

Canadian Railway and Marine World

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ACTON BURROWS, Proprietor
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Items marked with an asterisk are accompanied by maps, portraits or other illustrations.

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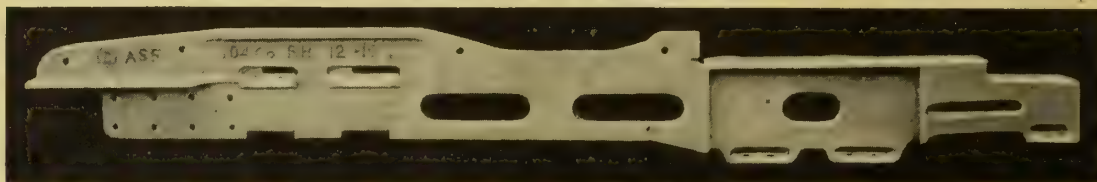
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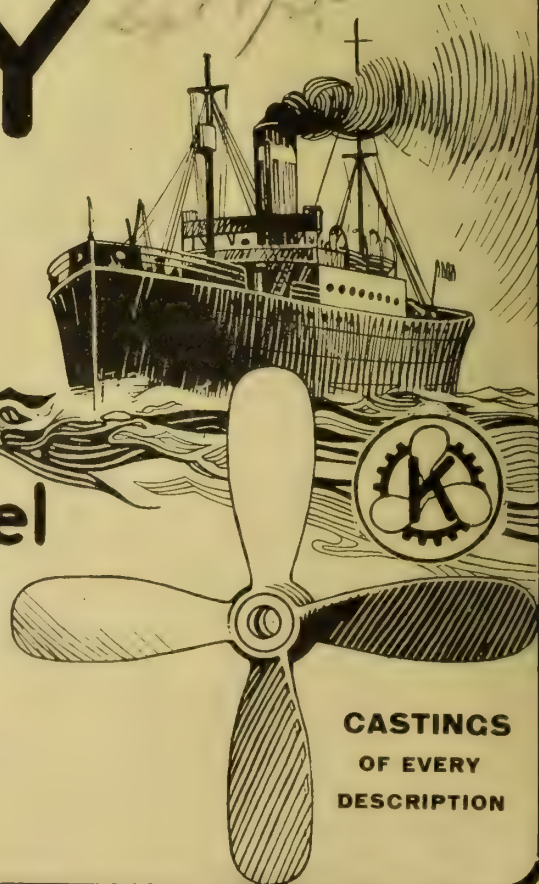
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When men meet in a public place they converse guardedly and with reserve. But let these same men meet as members of an exclusive club; or as fellow wearers of the emblem of some society and the natural barriers of distrust immediately disappear.

So it is with advertisers in Canadian Railway and Marine World—their representatives and their business letters receive a welcome of fellowship which can be secured in no other way.

CANADIAN RAILWAY AND MARINE WORLD

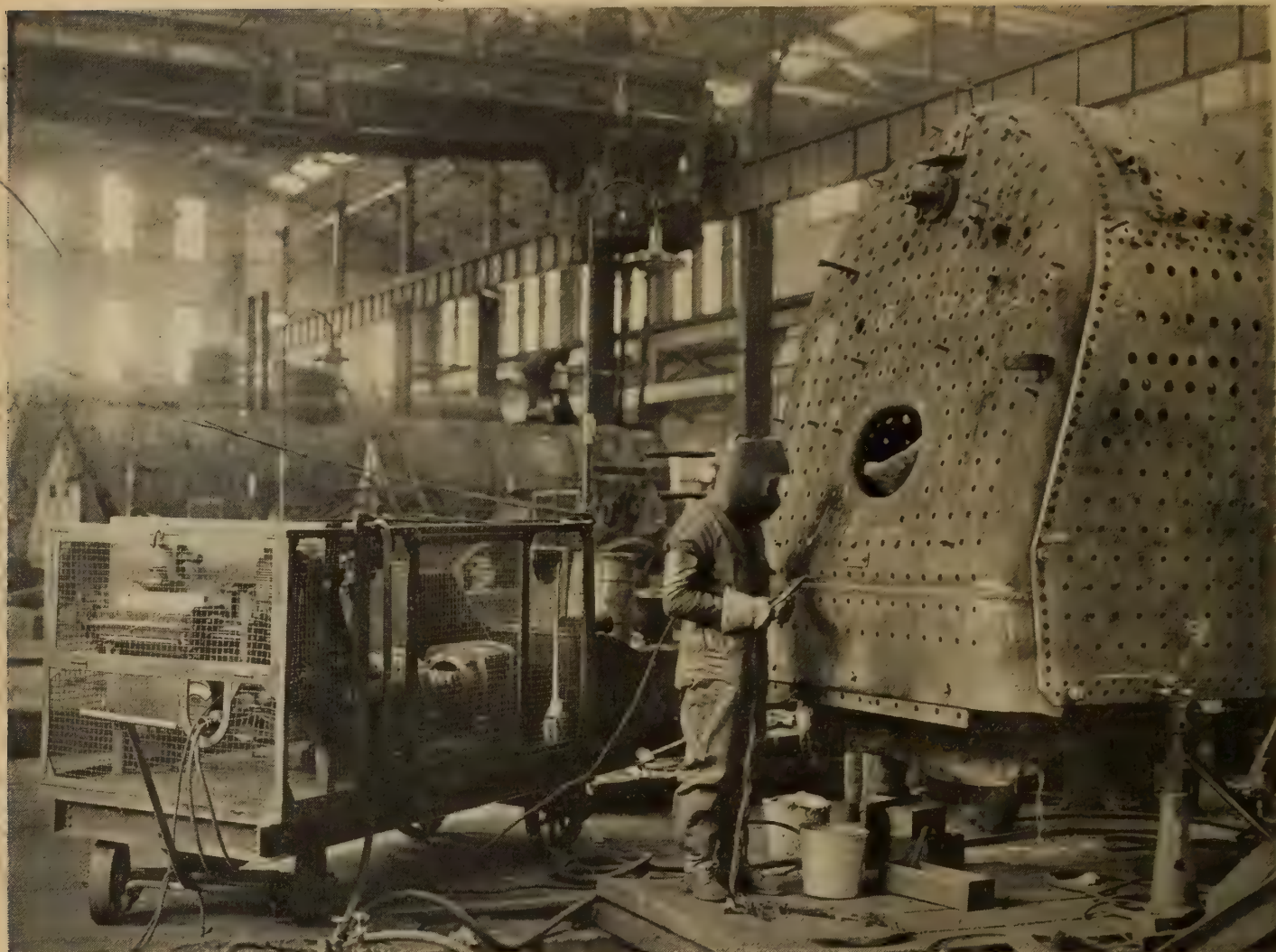
Toronto

Member of

Canada

*Audit Bureau of Circulations, Associated Business Papers,
Canadian National Newspapers and Periodicals Association,
Canadian Press Association.*





He knows his steel welds will have strength when he uses
Wilson's No. 9

Wilson "Color-tipt" Welding Metals

For Steel—Use Metal No. 4, 6, 9 and 17

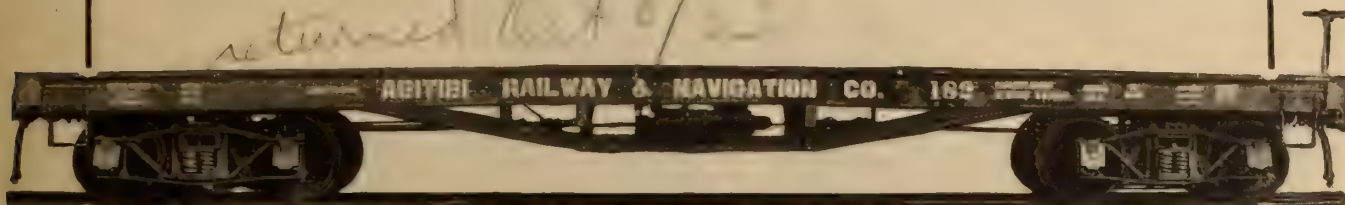
For Cast Iron—Use Metal No. 12

For Brass, Bronze and Copper—Use Metal No. 20

G. D. PETERS & CO., LTD.

New Birks Building

MONTREAL



*A Good Opportunity to Purchase
Dependable, Rebuilt*

FLAT CARS

THESE cars measure 41 feet long, and have a carrying capacity of 80,000 lbs. The woodwork is entirely new and the trucks have been thoroughly rebuilt. They represent an excellent opportunity for railroads and other users of flat cars to purchase this equipment at an attractive figure.

Built to comply with all M.C.B. and I.C.C. rules and regulations and fitted with U.S. safety appliances.

If you are in the market for:

Locomotives
Cranes
Steam Shovels
Dump Cars
Passenger or
Baggage Cars
Flats,
Coal or
Box Cars,
Etc.

—give us an opportunity to quote you.

**100
FLAT CARS
ALREADY SOLD**

We have just completed delivery of 100 of these cars which will be used on a logging railroad.

CANADIAN EQUIPMENT CO., LIMITED
MONTREAL

285 Beaver Hall Hill - Phone: Plateau 3440
Contractors', Industrial and Railroad Equipment

Representing in Eastern Canada:

KILBOURNE & JACOBS MANUFACTURING CO., COLUMBUS, OHIO
DUMP, QUARRY AND INDUSTRIAL CARS, ETC.

Canada's
commerce
carriers

Canadian Government Merchant Marine, Limited



REGULAR FREIGHT SERVICES

From Montreal and Quebec in Summer
From St. John, N.B., and Halifax, N.S.,
in Winter.

To the United Kingdom, Liverpool, London,
Glasgow, Cardiff, Swansea, etc.
To Barbadoes, Trinidad and Demerara.
To Havana, Cuba, and Jamaica.
To South America, Rio de Janeiro, Santos,
Montevideo and Buenos Aires.
To India, Dutch East Indies and Straits
Settlements via Mediterranean.
To Australia and New Zealand via Panama Canal.

To St. John's, Newfoundland.

From Vancouver, B.C.

To Sydney and Melbourne, Australia.
To Auckland, Wellington, Dunedin, and
Lyttleton, New Zealand.
To China and Japan.
To India and Straits Settlements.

Pacific Coastal Service.

Sailings every ten days.

From Vancouver and Vancouver Island ports.
To Seattle, San Francisco and Wilmington.

REGULAR FREIGHT AND PASSENGER SERVICE

Every three weeks from Montreal in Summer and Halifax, N.S., in Winter,
To Hamilton, Bermuda, Nassau, Kingston, and Belize.

Superior First Class Accommodation.

Excellent Cuisine.

B. C. KEELEY, General Agent, Vancouver, B.C.

F. G. WOOD, General Ontario Freight Agent, Toronto, Ont

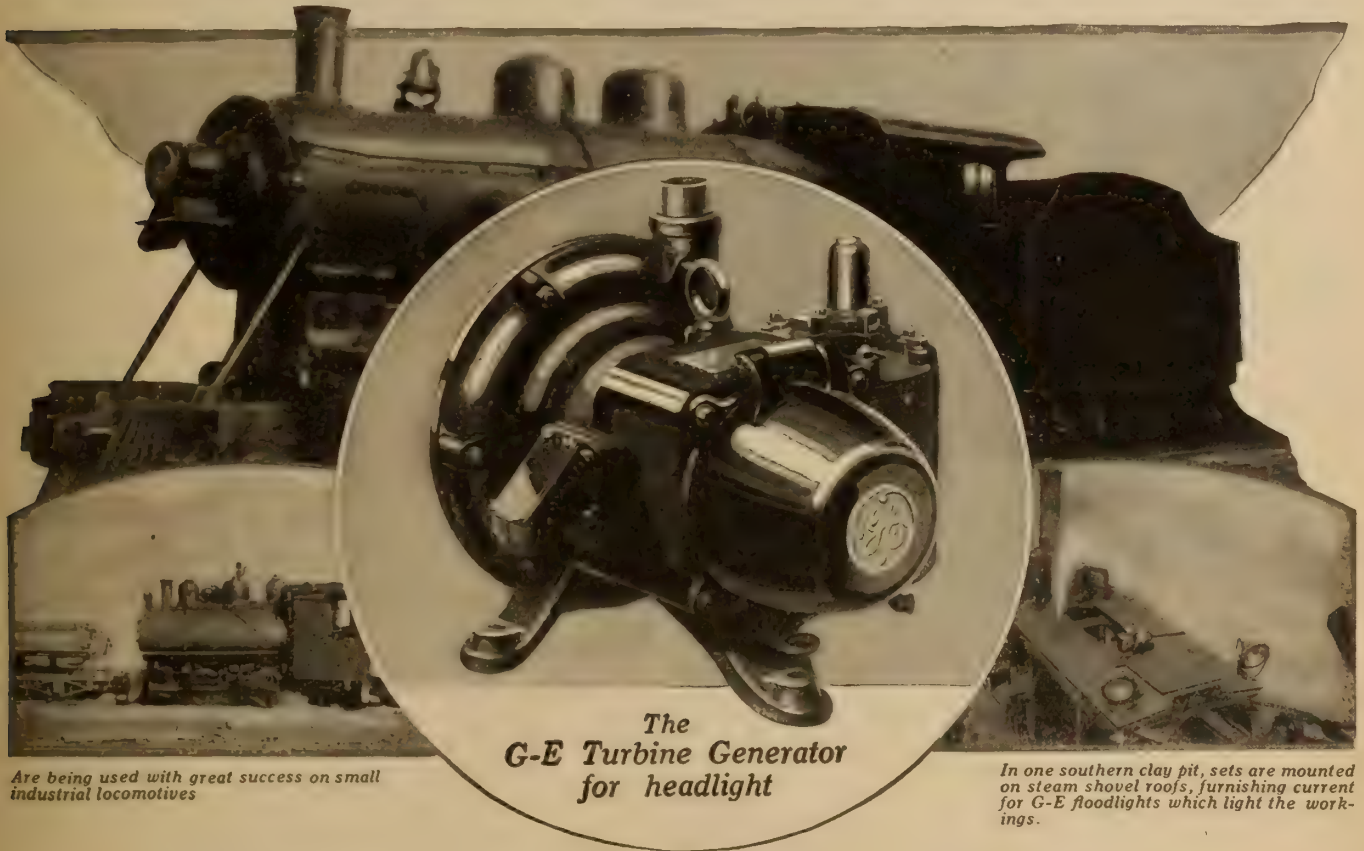
R. B. TEAKLE, General Manager.

W. A. CUNNINGHAM, General Freight Agent,
230 St. James Street, Montreal, P.Q.



Canadian National Railways

An accurate maintenance record tells the unvarnished truth about a machine. It can always be consulted with confidence



Are being used with great success on small industrial locomotives


In one southern clay pit, sets are mounted on steam shovel roofs, furnishing current for G-E floodlights which light the workings.

Over Three Years in Operation Upkeep Only 37 Cents a Month

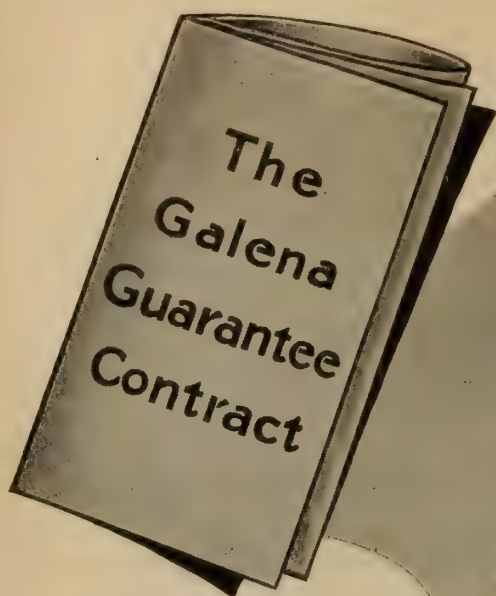
On one American railroad more than 250 G-E Headlight Turbine Generator Sets have been in operation for over three years. A carefully kept maintenance record shows but 37 cents a month per machine for spare parts. This exceedingly low upkeep, coupled with the dependability of this sturdy lighting set, accounts for its increasing popularity with engineers and executives.

The severe tests of four years' service and the manufacturing experience the General Electric Company has had with turbines great and small, combine to make G-E Headlight sets reliable. They are strong, highly efficient and can be closely regulated.

Canadian General Electric Co., Limited

HEAD OFFICE  TORONTO

Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Cobalt, Ottawa, Hamilton, London, Windsor, South Porcupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.



A Document that insures protection

"PRICE PER GALLON" comparison of lubricating oils arbitrarily places all oils—good, bad and indifferent—on the same quality level. It does not consider "Service"—the true determining factor of value.

Railroad tickets are not sold on the basis of "so much per ride," irrespective of distance or class of accommodation afforded. They are priced in accordance with the extent of service represented.

Service must gauge the value of railway lubricants as well as railway tickets. And lubricating service may be ascertained and recorded as accurately as sales of railway tickets can be checked.

The Galena Guarantee Contract stipulates that your lubrication will not exceed a certain sum per thousand miles of service. It offers an absolute protection to the customer as it is literally an insurance of service.

The guarantee in itself is evidence of our confidence in Galena lubricants to deliver uniform service, day after day, through the ever-changing conditions of weather and operation. It represents the difference between "oil buying" and lubrication buying.

"The Galena Contract Is A Bond of Service!"



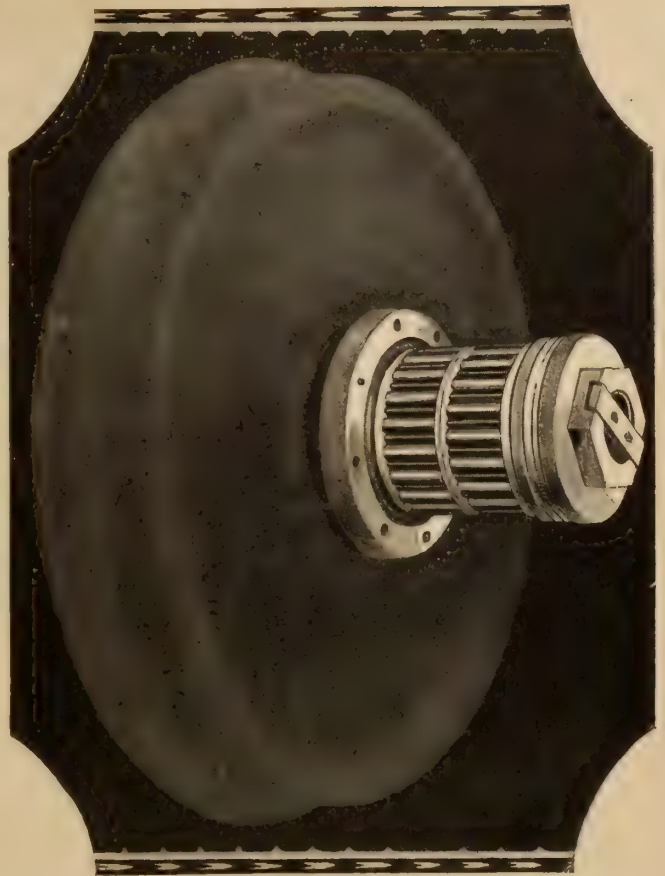
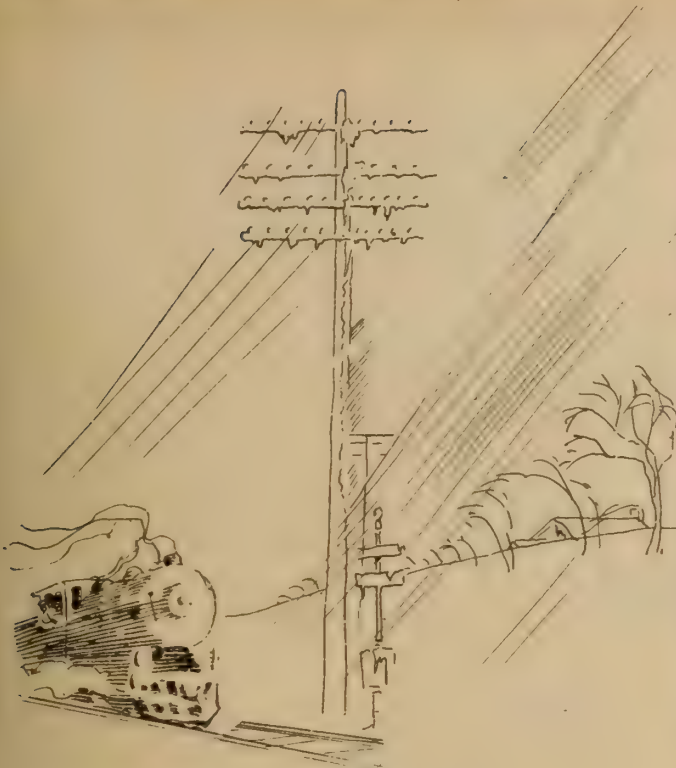
Galena-Signal Oil Company

Toronto

of Canada, Limited

Montreal





COLD WEATHER ENORMOUSLY INCREASES TRAIN RESISTANCE!

Actual tests made and reported in the Proceedings of the American Railway Engineering Association show that when a train stood still long enough to "freeze up," starting resistance ran up to

30 lb. per ton

—over five times the starting resistance of the same train after it had stopped only a few minutes.

This enormous resistance is directly chargeable to the journal bearing, oil and packing congealing into one solid mass.

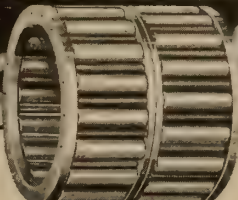
With STAFFORD ROLLER BEARINGS the journal is not held in the vise-like grip of a friction bearing, nor is it immersed in the oil-soaked packing; thus "frozen up" conditions cannot possibly occur.

Stafford Roller Bearings are guaranteed three years.

STAFFORD ROLLER BEARING CAR TRUCK CORPORATION

LAWTON MICHIGAN

"IT ROLLS THE FRICTION AWAY"



RAILWAY TRACK MATERIAL

**Angle Bars
Tie Plates
Spikes
Bolts
Nuts**



THE
STEEL
COMPANY
OF
CANADA
LIMITED

HAMILTON MONTREAL

Dearborn BULLETINS



Savings that are Constant

The more extensive the record of comparison is between Dearborn Scientific Feed Water Treatment and other methods, the more favorable is the showing of Dearborn.

In the test stages this saving is brought forcibly to the attention and is welcomed. We ask you to remember, however, this point:

Dearborn Treatment will continue its record of saving, but in a greater proportion, after the boilers are cleaned, than shown in its original tests.

For Dearborn Treatment based upon water analysis and laboratory control of water variation is practical perfection in remedying scale formation, foaming, pitting and corrosion.

If you are not using Dearborn Treatment, we know we can save money for you. For the past 35 years, over one thousand new customers—stationary power plants and railroads—on an average per year, have adopted Dearborn Treatment and service and ARE STILL USING IT. Write—give us the opportunity to prove Dearborn to you under your own service conditions.

Dearborn Chemical Company

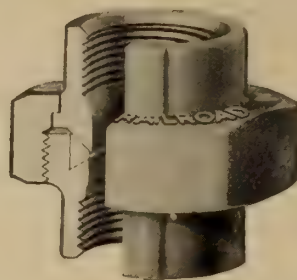
Limited

2454-2464 Dundas St. W.

TORONTO, CANADA



No. 517 Reducing
Pump Stud Union.



No. 519



No. 519 1/2. Male and
Female Union.



No. 594 Tee
with Female Union.

CRANE

RAILROAD UNIONS AND FITTINGS



No. 595 Tee
Reducing or Outlet



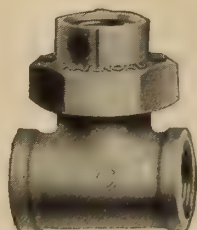
No. 596 Tee
with Male Union.

**Are Absolutely Leak-Proof, and
Eliminate Unnecessary Joints.**

**THEY REQUIRE NO GASKETS AND
MAY BE TAKEN APART EASILY.**



No. 592 Elbow
with Male Union



No. 598 Tee
Union on Outlet.

*Manufacturers of Valves, Fittings and Piping
Equipment and Distributors of Pipe
Plumbing and Heating Supplies.*



No. 590 Elbow
with Female Union

Branches and Warehouses:
HALIFAX, OTTAWA, TORONTO,
HAMILTON, LONDON, WINNIPEG,
REGINA, CALGARY, VANCOUVER.

Sales Offices:
ST. JOHN, N.B., QUEBEC, SHERBROOKE,
EDMONTON, VICTORIA,
SYDNEY, AUSTRALIA.

**CRANE
LIMITED**

HEAD OFFICE & SHOW ROOMS
386 BEAVER HALL SQUARE
MONTREAL

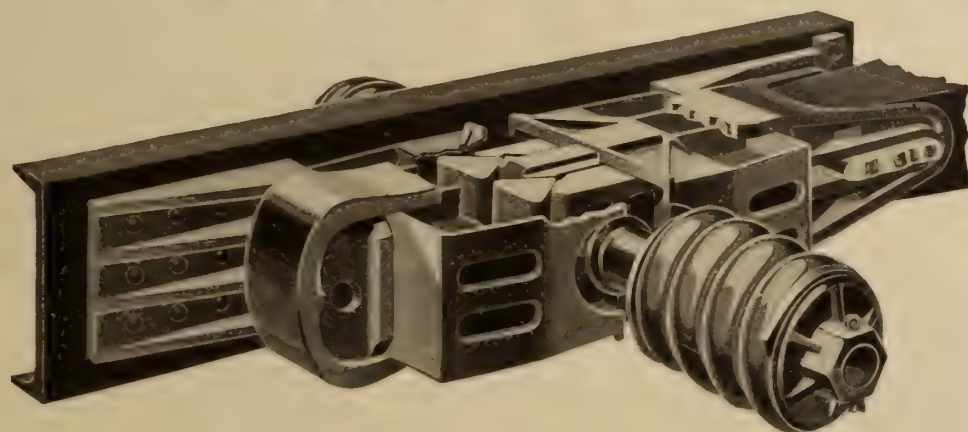
Works
1280 ST. PATRICK ST.
MONTREAL

**CRANE-BENNETT
LIMITED**

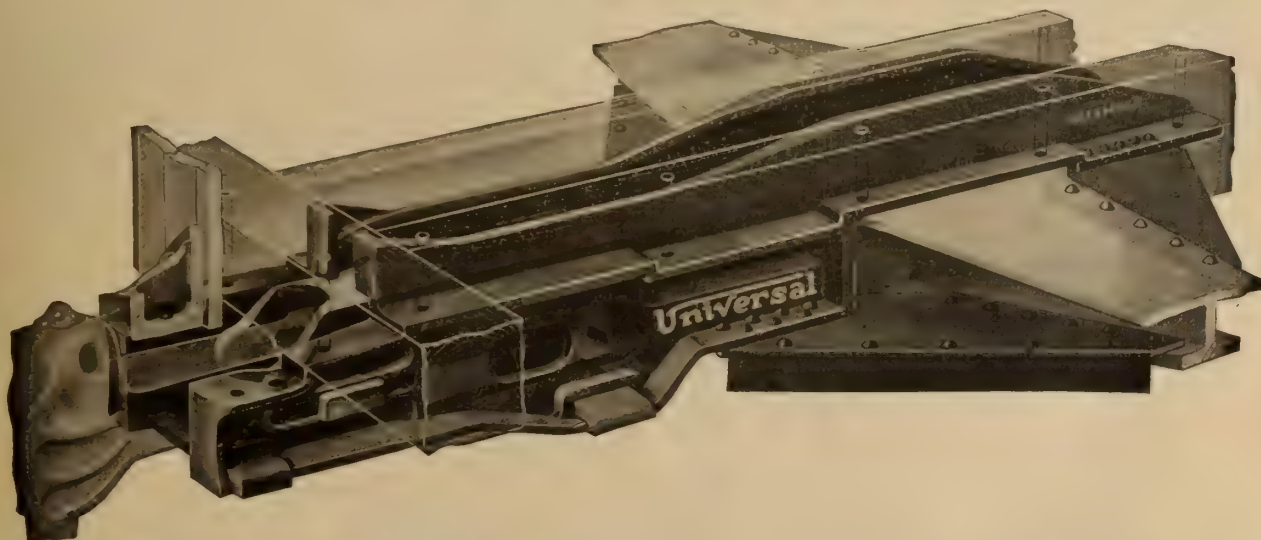
Head Office and Warehouse:
LONDON, ENGLAND.

Sales Offices:
BIRMINGHAM, CARDIFF,
GLASGOW, LEEDS, MANCHESTER.

CARDWELL FRICTION DRAFT GEAR MADE IN CANADA



Universal ATTACHMENTS MADE IN CANADA



REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING

CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

MADE IN CANADA

WEBB. G. KRAUSER

Transportation Building, MONTREAL



**"SHIP THIRTEEN FOUR TENTHS MILES
ELECTRIFICATION TODAY SURE"**

There are plenty of examples of successfully electrified tunnels, main trunk lines, mountain divisions, suburban sections and yard tracks.

But it is not possible—never will be possible—to wire for "thirteen and four-tenths miles of Type K Electrifications complete."

The contact system (overhead or third rail), the transmission line, the method of rail bonding—all these are of first importance. Each presents broad opportunity for inventive ability in the solution of the special problems of the particular road which is being electrified.

The O-B organization welcomes demands on the knowledge and experience gained through contact with most of the projects already developed.

The **Ohio**  **Brass Co.**
Mansfield Ohio, U.S.A.

Products: Trolley Material, Rail Bonds, Electric Railway Car Equipment, High Tension Porcelain Insulators, Third Rail Insulators



DIAMETERS-8 to 84 INCHES

PEDLAR'S "PERFECT" TONCAN METAL CULVERTS

NO matter what the size needed, there is a Pedlar Culvert that will solve the problem.

Our standard range of sizes run from 8 to 84 inches in diameter. When occasion demands, we can provide larger diameters than 84 inches.

The above illustration shows a 12-foot Culvert made especially for one of our customers.

Lengths Up to 40 Feet

with specially designed coupling bands for assembling individual culverts into longer lengths than 40 feet. We also manufacture Steelcrete, Metal Lath, Metal Roofing and Siding, Rib Fabric, Floor Tyle, etc.

Write for Culvert Booklet "R.M."

The PEDLAR PEOPLE Limited
ESTABLISHED 1861

Executive Offices: Oshawa, Ont.

Factories: Oshawa, Ont., and Montreal, Que.

Branches: Montreal, Quebec, Ottawa, Toronto, Hamilton, Winnipeg, Calgary, Vancouver.

EVERYTHING IN SHEET METAL

Clean Filing

Clean filing cannot be done with dull files.

To keep a dull file in use is to waste time and effort.

As soon as a file begins to get dull, replace it with a new file.

Replace it with one of these standard brands, and you can be sure of maximum service before your new file in turn becomes dull.

**Kearney & Foot
Great Western
American
Arcade
Globe**

**Standard for
over Fifty Years**

Made in Canada by

**Nicholson File
Company**

PORT HOPE - ONTARIO

Immune to Winter's Blasts

IN the G. R. S. Electric Interlocking System electrical power is used exclusively to operate the functions.

Only in winter does the operation of an interlocking plant receive its severest test.



Hail, sleet, snow, wind and zero temperature have no effect on a well insulated and protected wire carrying electrical current to its function. Because an electric current is immune to these severe winter elements, so also is the system of G. R. S. Electric Interlocking, for it is electric throughout.

*An electric current does
not freeze*

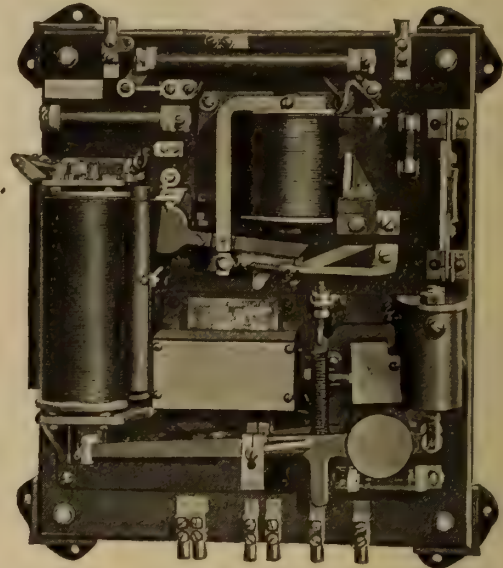
When you think "interlocking"—think G. R. S. Electric Interlocking, the *Modern System* immune to the frigid blasts of winter.



GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

LACHINE

QUEBEC



"Safety" Car Lighting Regulator Panel

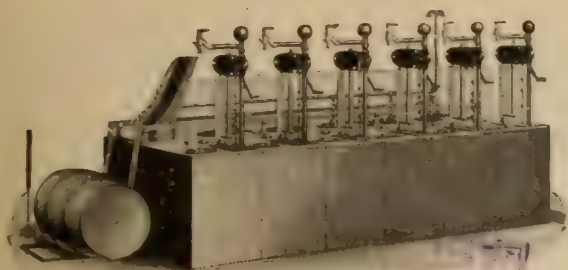
When you buy Safety Equipment, you buy more than high-grade apparatus, electrically and mechanically right. With the physical value goes all the pioneer experience in car lighting—a mastery of the science gained in over 35 years of specialization—the assistance of experts skilled in this specialty—a service country-wide in scope. Safety Equipment represents standard practice as determined by daily contact with operating conditions. And back of it are the resources and responsibility of this Company as a warranty of sound design and honest construction.

"Made in Canada"

THE
SAFETY
CAR HEATING AND
LIGHTING
COMPANY

Montreal

New York



Are You Playing Fair with Your Store Records?

Are you checking in every quart of oil as accurately as you measure it out? You know, when you use Bowser Oil Batteries, that you use all the oil you buy. Play fair with your store records.

Bowser storage tanks, oil tight, of all metal construction, prevent spillage and waste, thereby eliminating the fire hazard. Bowser piston-type pumps accurately measure the oil in the exact quantities required.

Write today for Booklet C-14, and let our engineers make a survey—at our expense—of your storage and distribution problems. Savings in time and labor from 15% to 35% can be pointed out.

Bowser Equipment is MADE IN CANADA by

S. F. BOWSER & CO., LTD.
Toronto - Canada

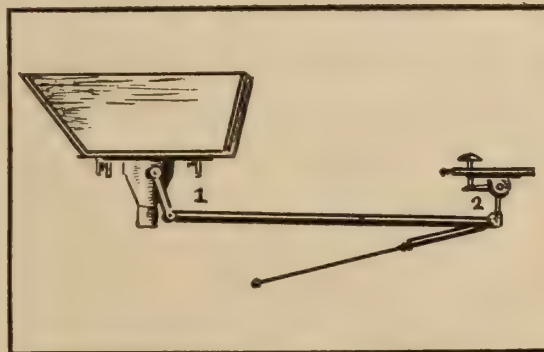
Branch Offices and Service Departments throughout Canada and in principal cities abroad.

BOWSER
ESTABLISHED 1865
ACCURATE MEASURING PUMPS

BOWSER PRODUCTS

For Handling Gasoline and Oils Wherever Sold or Used	
Filling Station Pumps and Tanks for Gasoline.	Carload Oil Storage Tanks.
Portable Tanks for Oil and Gasoline.	Dry Cleaners' Underground Naphtha Clarifying Systems.
Storage and Measuring Outfits for Paint Oils, Kerosene and Lubricating Oils.	Richardson - Phenix Oil Circulating and Filtering Systems and Force Feed Lubricators.
Power Pumps.	

Write for Booklets



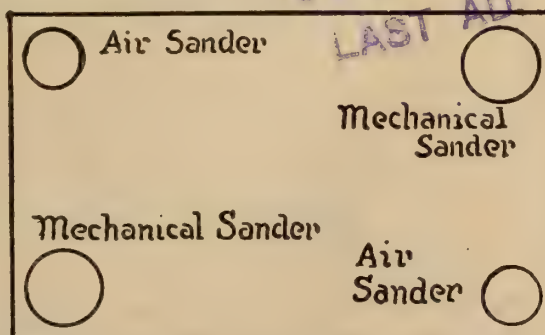
Sanders for Electric Railways

Both pneumatic and mechanically-operated sanders are made by the Nichols-Lintern Co.

The mechanically-operated N-L sander has been accepted and installed as standard equipment by some of the largest railroads in Canada and the United States. When the air is lost the N-L mechanical sander used with a hand brake is an emergency device that will prevent many accidents. N-L mechanical sanders are admirably adapted for use on safety cars and are economical on sand. They apply all the sand you need, but no more.

The air sander is usually used on interurban cars for sanding round curves and may be equipped with either independent or auxiliary valve. It is also used on city cars when it is desirable to locate sand hoppers at other points than close to or directly above the rail.

Let us send you full particulars of these improved sanders.



This is the way we recommend these Sanders be used on Safety cars—giving a properly-balanced Sander Equipment.

Railway and Power Engineering Corporation Ltd.

133 Eastern Avenue Toronto

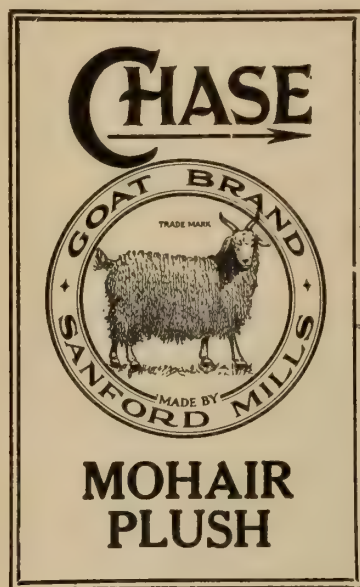
Branches: Montreal

Winnipeg

New Glasgow

For Railroad, Hotel and Steamship Upholstery

CHOOSE "CHASE" MATERIALS



The trade mark "Chase" stands for seventy-five years' leadership in manufacturing.

CHASE GOAT BRAND CAR PLUSH: This product, made from the fleece of the Angora Goat, has been the choice of railroads and steamship lines for over thirty years. It is **DURABLE—FAST IN COLOR—RICH APPEARING—MOST SANITARY.**

Recently there was exhibited a car seat upholstered with our Mohair Plush, and the seat had already been in service twenty-five years.

CHASE LEATHERWOVE: The modern, leather-like upholstery material for use where flexible toughness is the one thought.

For cleaning Plush and other upholstery fabrics choose **CHASE PLUSH RENOVATOR**—That remarkable liquid cleanser which does not start the dyes or injure the fabric. **GUARANTEED** effective but **NOT HARMFUL**. Write for samples.

L. C. CHASE & CO., BOSTON, New York, Detroit, Chicago, San Francisco

Newfoundland Dockyards Limited

Proprietors

(REID NEWFOUNDLAND COMPANY LIMITED)

St. John's

610 Feet Graving Dock

WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT
DEEP WATER PIER

SHOPS EQUIPPED WITH MODERN
MACHINERY

PNEUMATIC TOOLS, ELECTRIC AND
ACETYLENE WELDING PLANT
IN OPERATION

VESSELS PAINTED WITH ANTI-
FOULING PAINTS

Rates on Application

Canadian National Railways

ACROSS CANADA



THE CONTINENTAL LIMITED

Daily in Either Direction Between Montreal and Vancouver

Depart Montreal (Bonaventure Stn.) 9.00 p. m.

Through All-Steel Compartment-Observation-Library Car; Standard and Tourist Sleeping and Dining Cars; Colonist Cars and Coaches.

THE NATIONAL

Daily in either direction between Toronto and Winnipeg

Dep., Toronto (Union Station), 10.35 p.m. (Standard time).

Tickets and full information obtainable from nearest Canadian National or Grand Trunk Railway Agent.



A Warmer Clime for Winter Time

For Winter Jaunts To Summer Haunts

British Columbia — California — Florida — Alabama
Arizona — Georgia — Louisiana — Mississippi — New
Jersey — New Mexico — Texas — North Carolina —
South Carolina

Cruises Through Sunlit Seas

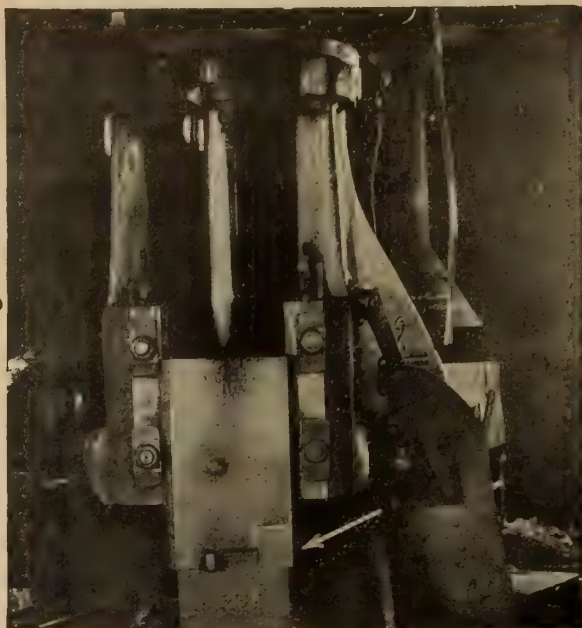
to West Indies — Bermuda — Cuba — South America
— Mediterranean — Around the World

Golfing, Tennis, Polo, Bathing, Fishing or just rest.

for descriptive literature and information write to

C. E. HORNING,
D.P.A., Toronto, Ont.

E. C. ELLIOTT,
D.P.A., Montreal, Que.



Arrow shows Thermit weld made on ram of steam hammer



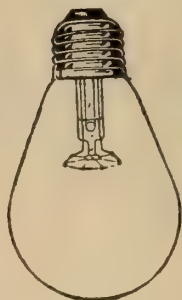
A Thermit weld is made in one operation regardless of the thickness of the section and, therefore, there is only one shrinkage which can always be allowed for in advance.

Use Thermit for all heavy repairs, such as locomotive frames, and many other locomotive parts.

Send for our latest Thermit Locomotive Repair Pamphlet 2144.

METAL & THERMIT CORPORATION
15 Emily Street, Toronto

General Offices
120 Broadway
New - York



110-115-120 Volts

WESTINGHOUSE
KILL New Construction Mill Type Lamp
LAST AD. A Mazda B Lamp in a Tipless P-19 Bulb



220-230-240-250 Volts

The advantage of this new style lamp over the former Mill Type Lamp is its shorter stem and ring-type coiled filament. It is thus capable of withstanding greater shock, vibration, and rougher usage.

This lamp is especially adapted for use in trains, ships, and wherever there is unusual vibration.

Canadian Westinghouse Company, Limited, Hamilton Ontario

TORONTO, Bank of Hamilton Bldg.
HALIFAX, 105 Hollis St.
CALGARY, Canada Life Bldg.

MONTREAL, 285 Beaver Hall Hill
FORT WILLIAM, Cuthbertson Block
VANCOUVER, Bank of Nova Scotia Bldg.

OTTAWA, Ahearn & Soper, Ltd.
WINNIPEG, 158 Portage Ave. E.
EDMONTON, 211 McLeod Bldg.

Repair Shops:

MONTREAL—113 Dagenais St.
WINNIPEG—158 Portage Ave. E.

VANCOUVER—1090 Mainland St.

TORONTO—366 Adelaide W.
CALGARY—316 3rd Ave. E.



Ottawa Car Manufacturing Co., Ltd.

301 Slater St., Ottawa, Ont.

Electric City and
Interurban
Passenger Cars

Electric Express
Cars and
Locomotives

Sprinklers and
Work Cars

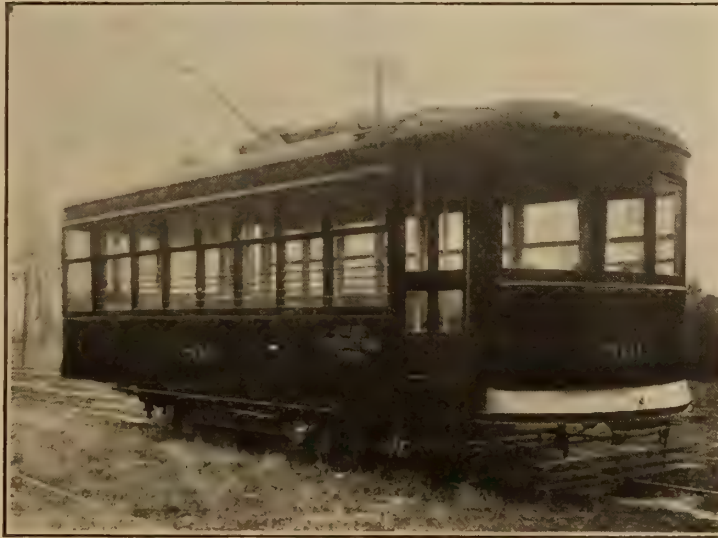
Car Seats

Car Curtains

Bronze Car
Trimmings

Bronze Motor
Bearings

Bronze Axle
Bearings



One Man Safety Car.

Sole Licensees
of all rights for
Manufacture and
Sale in Canada of
The Ackley
Brake
No Staff and 2-E

Brass Foundry and Forgings

*Our Foundry is one of the largest and best equipped, and one of the most modern in the Dominion.
We are in position to machine castings and forgings of every description.*

Buffalo Brake Beam Company

BUFFALO BEAMS ARE BEST BEAMS

Offices:

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32 Nassau Street

ST. LOUIS
Syndicate Trust
Bldg.

MONTREAL
10 St. Antoine St.



Works:
BUFFALO,
N. Y.

Canadian Works: HAMILTON, ONT.

Brake Beams for all Classes of Cars, Locomotives and Electric Equipment



4-6-2 TYPE LOCOMOTIVE

Built for the Canadian National Railways

We are specialists in building locomotives.

We build all types and sizes, also all kinds of spare and repair parts for locomotives and tenders.

Our experience puts us in a position to give you expert advice as to what particular type and size of locomotive is best suited to your needs.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

TRACKWORK

OF EVERY CLASS

**CANADIAN
STEEL FOUNDRIES
LIMITED
MONTREAL**

KILL
LAST AD.

Water Service Everywhere

LONDON,
HAVRE, HAMBURG,
AND ROTTERDAM

Intercontinental Trans-
port Services, Limited.

Regular sailings between
above ports and ST.
JOHN, N.B., in winter,
and MONTREAL in sum-
mer. Further particulars
on request.



SHIP YOUR
FREIGHT
BY WATER

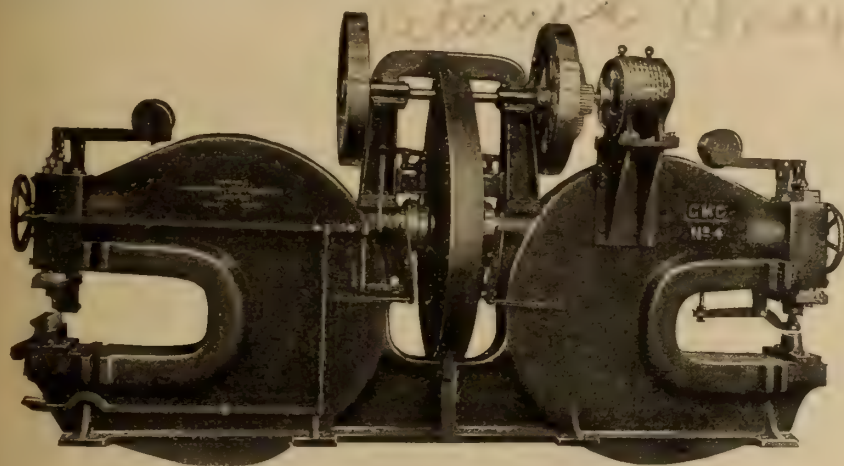
Save both Time and
Money. We have excel-
lent facilities for hand-
ling Freight of all kinds.

CANADA STEAMSHIP LINES LIMITED

Toronto Office,
32 Front St. West

Head Office, Victoria Square,
MONTREAL

ST. JOHN, N.B., OFFICE
147 Prince William St.



No. 4, 36" Double End Punch and Shear, Motor Driven.



"The Better Line"

**PUNCHES
and
SHEARS**

Built to "produce the goods." These are exceptionally sturdy tools, with heavy frames and strong working parts to withstand the most severe usage. Numbers of them are in satisfactory service in various Railway Shops throughout Canada. Let us figure on your next year's requirements.

Details and illustrations cheerfully sent on request.

CANADA MACHINERY CORPORATION, GALT, ONTARIO
LIMITED

Toronto Sales Office

721 Bank of Hamilton Bldg.

**LEDOUX
JENNINGS,
LIMITED
Montreal**



*Builders
of*
**AUTOMOTIVE
EQUIPMENT**

Front View of

A "Canadian Gasoline Rail Car"

Four Ragonnets Save \$30,000 Per Year



The Ragonnet Power Reverse Gear

SWITCH ENGINES cost about \$30,000 per year to operate, according to the latest available data.

Save the need of one engine and you save that sum and more.

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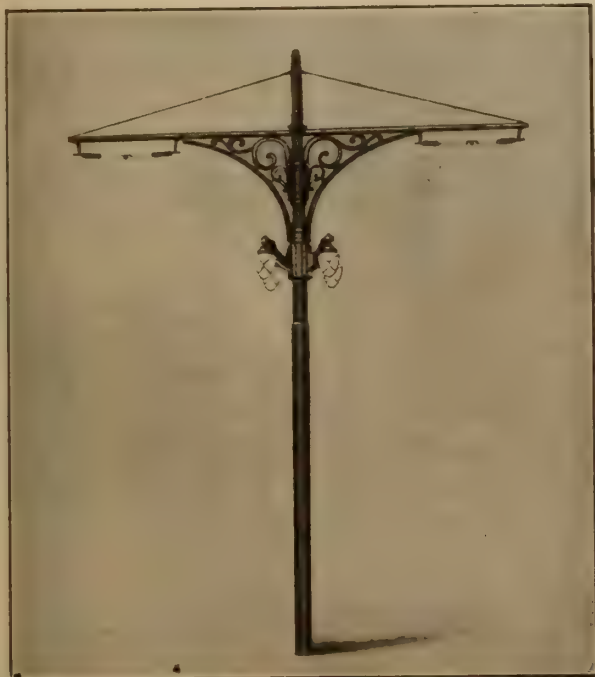
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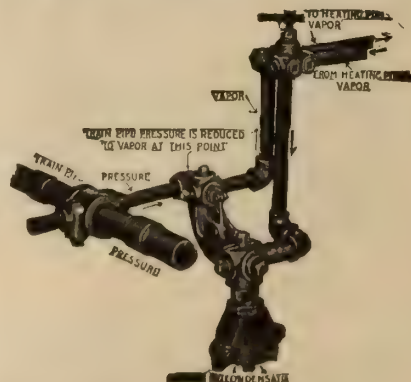
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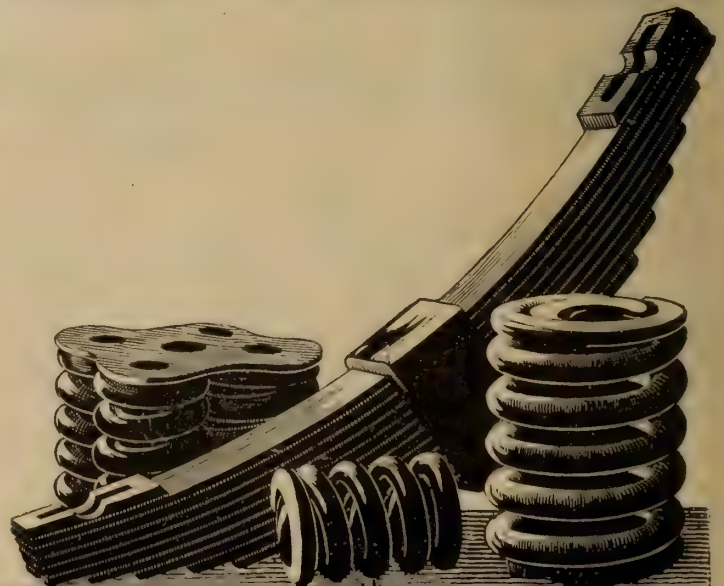
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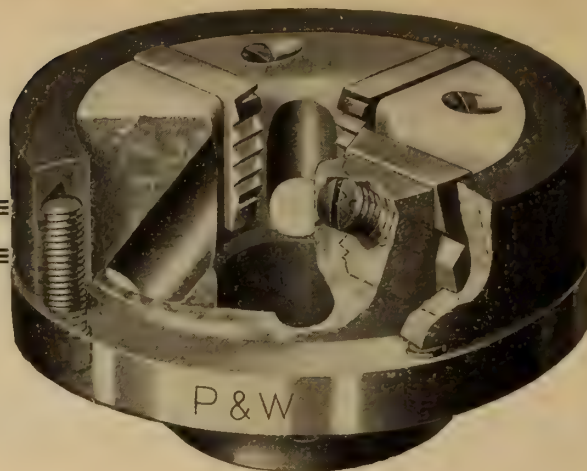
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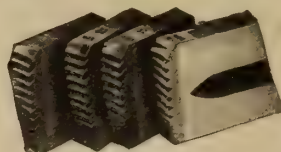
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Canadian Railway and Marine World

January, 1923

Some Fundamental Needs in the Canadian Railway Industry.

By Edwin Winfield, Assistant Editor, Canadian Railway and Marine World.

The Canadian railways may be regarded as constituting a large transportation machine, the function of which is to furnish transportation to the Canadian people. The usual economic considerations applying to human activities demand that to best serve the people's interests, the machine should turn out a good product, and at the lowest possible net cost; that is, it should furnish efficient and cheap transportation. It has done so in the past; what of the future? In the following paragraphs, a few enquiries, necessarily very brief and very general, into some of the things influencing the quality and cost of the railway transportation which the Canadian people will buy and pay for in the future, will be made, and corresponding conclusions drawn.

Railway Mileage and Facilities.—The statement that Canada has grossly overbuilt in the railway field has been so frequently repeated that it has become a commonplace. There is no doubt that, chiefly through error in the matter of distribution, railway mileage has been provided in the country in excess of the economic necessity for it. The Canadian transportation machine is uneconomical, like any other machine that cannot be kept working full time, because all of its capital cost was not justified. While paralleling, and bad mileage distribution in relation to traffic requirements, made the machine too big, and therefore uneconomical in the first place, the course of events in the past few years, which has had the effect of limiting immigration and growth in population, has prevented our transportation machine from becoming more economical, by limiting the demand for its product.

The curve in fig. 1, showing the number of people to support each mile of railway (line, not track), was constructed on the supposition that the increase in population as between 1901 and 1911, and between 1911 and 1921, was fairly uniform. On this basis, Canada's population in 1907 was 6,472,513, and the railway built being 22,452 miles, there were 288 people for each mile of line. After the orgy of railway construction between 1910 and 1916 had run its course, there were but 211 people per mile of line. In 1921 this number had been increased to 221. The U.S. has in the neighborhood of 400 people per mile of line, the United Kingdom about 2,000, and Australia about 275. It is evident, therefore, that Canada has a large transportation machine in relation to the number of people to provide a market for its product.

As to railway rolling stock and other facilities, experience has demonstrated that passenger equipment has been provided in the past in sufficient quantity to meet the country's needs. Freight equipment has also been provided in sufficient quantity to meet the country's needs, except in periods of very heavy traffic, such as experienced in the autumn of 1922, at which time of year a natural flow of cars into U.S. territory generally serves to

intensify any car shortage that occurs. Shops for adequately maintaining and repairing equipment have been provided, as has all other physical plant necessary for efficient railway operation.

Passenger and Freight Traffic.—While it is axiomatic that increased population would mean an increase in traffic offering to the railways, it would be interesting to know if increased population would result in the railways being afforded more traffic per individual of the population than when the population was smaller. Considering the decrease in the number of people to support one mile of railway which has taken place in Canada as between 1907 and 1921, passenger traffic density for the railways as a whole has kept up well. In 1907 there were 90,921 passengers carried one mile per mile of line. In 1912 this figure was 108,888, and in 1913 it was 111,353. In 1915, 1916 and 1917 the figure ran below 80,000, but in 1918 it got up to 81,306, and in 1919 to 93,668. Taking the good years with the bad, the number of passengers carried one mile per mile of line was not quite so much smaller between 1914 and 1921 than between 1907 and 1914, as the change in the number of people supporting each mile of railway would lead one to believe it would be. Fig. 2, showing the number of miles travelled by rail annually by each person, indicates that passenger traffic fluctuates violently, the amount of travelling people do being influenced in great degree by prevailing economic conditions. The average of 375.3 miles per person, between 1914 and 1921, compared with the average of 358.6 miles per person between 1907 and 1914, has been responsible for keeping passenger traffic density up somewhat more than it would be expected to be, based on the number of people per mile of railway, between 1914 and 1921. However, it would be doubtful if this increase in the average amount of travelling done per individual per year could be taken as any indication that passenger travel per individual tends to increase as population increases. It is probable that as population increases, and as human needs and desires increase, and as the luxuries of one generation become the necessities of the next, railway travel tends to increase. On the other hand though, the increasing use of automobiles is tending, and will further tend, with more good roads, to restrict railway passenger travel. On the whole, it may be concluded that the increase in passenger traffic on Canadian railways will vary about directly with the increase in population.

Applying our enquiry to the freight end of the railway business, however, it may be seen that freight traffic increases at a much faster rate than population. Notwithstanding the great decrease in the number of people to support each mile of railway, as between 1907 and 1921, the number of ton miles of revenue freight per mile of line has shown a large increase. In 1907 the

freight traffic density for the Canadian railways—the number of tons of freight carried one mile per mile of line—was 518,486. In 1918, despite the great decrease in the number of people per mile of line, as shown in fig. 1, there were 798,093 tons carried one mile per mile of line. In 1920 this figure was 809,832. Fig. 3 shows the number of ton-miles of freight carried per individual of the population from 1907 to 1921. While freight traffic also fluctuates violently in accordance with prevailing economic conditions, it is evident that as population has increased, the number of ton-miles of revenue freight furnished the railways by each individual has also increased. Taking the average for 1907, 1908 and 1909, each person in Canada furnished the railways with 1,892 ton-miles of freight annually. Taking the average for 1919, 1920 and 1921, each person furnished 3,332 ton-miles annually. While population increased by approximately 29%, the amount of freight traffic furnished the railways by each person increased by 75%. The U.S. has had this same experience; while the U.S. population doubled, U.S. railway freight traffic quadrupled. If the past is any indication of what may be expected in the future, it may therefore be taken for granted that, as Canadian population increases, railway freight traffic per unit of population will continue to increase at a much faster rate. This proportionately greater increase in freight traffic than in population, is a logical result of the greater diversity of human needs, more efficient methods of production, resulting in larger ton-nages being originated by comparatively few people, and the establishment of new producing areas and markets and the extension of old ones.

Transportation costs to the public.—Railway transportation can be bought in Canada today at a cost much lower than the average for all other commodities. This statement is proved by the figures supporting the trend curves in figs. 4 and 5. In fig. 4, the percentage increases in the cost of living, as furnished by the Labor Department, are compared with the percentage increases in freight and passenger rates, using the levels in the year 1911 as a basis. The cost of living, which includes such items as food, fuel, light, rent, etc., has at all times been relatively higher than either freight or passenger rates. These cost of living figures are for the month of July for each year; the average receipt per revenue ton-mile of freight and per revenue passenger-mile are averages for each whole year, and for 1922 to July 1. In July, 1920, the cost of living was 106% higher than in July, 1911, while the average freight rate for 1920 was but 38% higher than in 1911, and the average passenger rate but 50% higher. In July, 1922, the cost of living was still 58% higher than in July, 1911, while the average freight rate for the first 6 months of 1922 was but 47% higher than in 1911, and the average

passenger rate 50% higher. In addition to this, freight rates have been again cut, effective in Aug. 1922. In addition to the restoration of the 1898 Crowsnest Pass rates on grain from Western Canada, large decreases in commodity rates were ordered.

In fig. 5, freight and passenger rates are compared with average wholesale prices, also furnished by the Labor Department. These prices cover almost every kind of commodity. In this chart, 1913 has been taken as the basis. In July, 1920, when the average wholesale price was 157% higher than in July, 1913, the average freight rate was but 41% higher than in 1913, and the average passenger rate but 48% higher. In July, 1922, wholesale prices were still 67% higher than in 1913, but freight rates for the first half of 1922 had aver-

experienced by the Canadian National Rys., but will, on the contrary, wonder how our privately-owned railways have continued to operate.

Railway Operating Efficiency.—One of the reasons why the privately-owned railways have been able to operate at a small profit and the Canadian National Rys. have been able to get along with no greater operating losses than they have incurred, is because operation has been very efficient. Any enquiry into railway operating efficiency here must be very limited. While operating efficiency involves many numerous and complex considerations, it has been felt that car loading, utilization of cars, condition of locomotives, locomotive hauling capacity, train make-up, etc., are all reflected more or less in the average train load hauled, and for that reason fig. 6, show-

As a matter of fact, the railways have handed on to the public, through lower rates, and to their employees, through increased wages and more favorable hours and working conditions, amounts which total considerably more than they have been able to save by increased operating efficiency. Figs. 4, 5, 7 and 8, and the calculations supporting them, prove this. In fig. 7 it can be seen at once that as gross earnings per freight, passenger and mixed train mile increased, due to higher rates, railway operating expenses increased faster, so that railway net earnings per train mile decreased. In 1911, while the railways derived average gross earnings of \$2.10 a train mile, with expenses of \$1.46 a train mile and net earnings of 64c. a train mile, in 1920 they had gross revenues per train mile of \$4.19, but train mile operating expenses, amounting to \$4.07, left net earnings of only 12c. There was some improvement in 1921, when net earnings per train mile for the roads as a whole were 34c., but in the first half of 1922 the net earnings per train mile were but 21c. While better traffic conditions in the autumn of 1922 will likely increase this figure for the complete year, despite the further decreased rates, it is all too evident that the railways' net earnings are still seriously restricted in comparison with what they were a few years ago.

For the purpose of showing that these unfavorable operating results for the railways as a whole have not been unduly influenced by the results on the Government-owned roads, the operating ratios for all the roads and for the C.P.R. by itself are shown in fig. 8. The C.P.R. has been affected by exactly the same conditions as the other roads. The simple truth of the matter is that since 1917 railway rates have not been high enough to allow the railways to pay the wages they are paying, and the material prices they are paying, and derive as favorable net earnings as they were able to prior to 1917.

Having presented these few facts in connection with the Canadian railway industry, it might be well to refer back to the statement that the Canadian transportation machine is uneconomical, because there is not enough work for it, i.e., that the railways could handle traffic at less cost if they had more of it. It may readily be demonstrated, on an analysis of railway operating expenses based on statistics and experience, that a railway can handle additional traffic at a less cost per unit than its original traffic is costing it to move, up to a point where the capacity of its facilities is reached, but as this principle is true of practically all productive industry in more or less degree, no demonstration of the fact is necessary here. It will be accepted as axiomatic, therefore, that increased traffic density will mean a tendency to reduced operating costs.

Taking into consideration the fact that it is the freight traffic which is the real money earner for the railways, and combining this with the relationship as between population and freight traffic density, as demonstrated above, it is at once evident that the greatest influence for reduced railway operating cost, and therefore reduced transportation costs for the public, will be exerted by increased population. Even if freight traffic density increased but directly in proportion to the increase in population, an increased population would be of assistance in reducing transportation

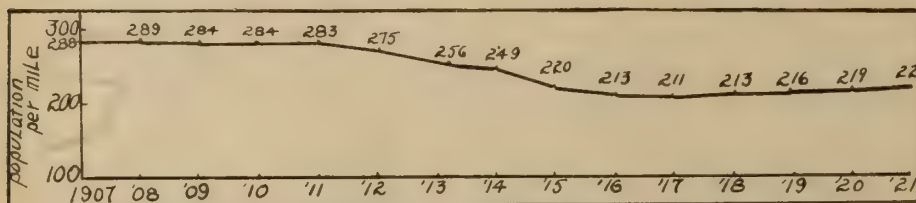


Fig 1. Number of People per mile of Line.

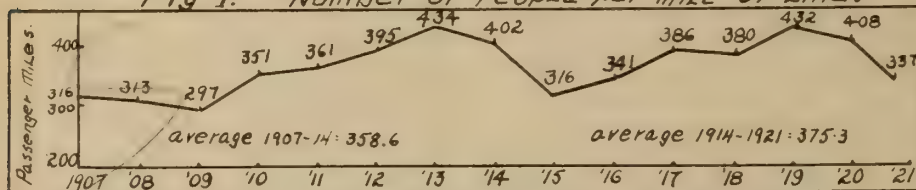


Fig 2 No. of Passenger miles per individual, annually.

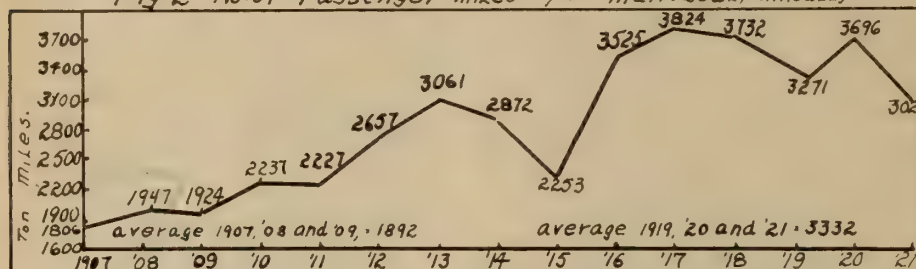


Fig 3 No. of ton miles of freight per individual, annually.

aged but 50% higher than in 1913, and passenger rates 48% higher, while freight rates have since been largely reduced, as stated above, and wholesale prices have changed but little one way or the other.

The mistake in railway regulation (which, on account of the interconnection between Canadian and U.S. rail transportation, and the enforced similarity between Canadian and U.S. rate levels, can be traced back to its origin in the policies of the United States Railroad Administration during the period of Federal control), occasioned by the undue slowness in adjusting rail rates to meet fluctuating price conditions, is made evident on examining the trend curves shown in fig. 4 and 5. Because railway rates were not finally adjusted upward, until commodity prices had reached and passed their maximum, the public got the idea that railway rates had been made unduly high, but an examination into the matter demonstrates conclusively that railway rates never were inflated like commodity prices, and are at present comparatively low. When one considers the manner in which commodity prices soared, and then considers that railways are among the greatest purchasers of commodities, he will express no wonder at the deficits

ing the average number of ton-miles of revenue freight handled per freight train mile, is given. It is evident that the more tonnage one locomotive and crew can handle in one train, the cheaper will each ton be handled. The average number of tons of revenue freight per freight train mile had increased from 305 in 1907 to 460 in the first half of 1922. Larger cars, larger and more efficient locomotives, better grades—all of the things that make for increased operating efficiency, and cheaper handling of traffic, have combined to bring about this result. While the cost of handling traffic by no means decreases directly in proportion to the increase in the average train load hauled, consideration of the increase in the average train load will at least afford some indication of the amount by which the railways have succeeded in reducing relative operating costs. The word "relative" is important; higher wages and material costs have, of course, acted to increase actual unit operating costs considerably, as will be indicated further on.

Railway Earnings.—Figs. 4 and 5 at once make evident that any savings the railways have been able to make by increased operating efficiency have been in large part handed on to the public in the form of relatively lower rates.

costs, but with freight traffic density increasing much faster, proportionately, than population, increased population will be even more beneficial to the railways and the country. It may at once be stated, therefore, that the prime requisite for the solution of our railway problem is increased population.

With railway wages at a fair and reasonable level, and with prices for railway materials determined by the usual economic influences, about the only things of consequence, outside of increased population, which will aid in solving the Canadian railway problem are, first, increased operating efficiency, and second, keeping down of the annual cost of additional capital required for railways to the lowest possible point. These two things are very important and, if overlooked, it is possible that a great part of the advantages to be

from time to time, will have to be acquired and paid for. All these things will require expenditures which will aggregate large amounts.

Maintaining and increasing operating efficiency and economy also requires an initial expenditure of money. Money must be spent to keep track in good condition, and to keep cars and locomotives in good shape, and to maintain the entire physical railway property in such condition that transportation can be produced efficiently and economically. Money must be expended for grade revisions, for improving terminals, so that lower terminal handling costs shall prevail, and for acquiring and adopting the numerous devices and methods which mean ultimate economy. If this money is not spent, operating efficiency will not be increased and transportation costs will not be lowered. In the writer's

alike suffer through the lack of it. When earnings are low, there is a tendency to postpone the investment of new capital for things which would make operation more efficient, and the net result of all these natural tendencies is that increase in operating efficiency ceases.

So far as the annual charge for capital is concerned, it would be well if the public would realize that, in connection with railways, it is faced with the problem of determining what proportion of its transportation service it will pay for as it gets it, and what proportion it will get on credit. The amounts which have had to be paid on Canadian National Rys. account, for fixed charges and for operating losses, indicate that the public has been getting too much transportation on credit. This cannot go on forever. The nearer the Government roads can come to earning their operating ex-

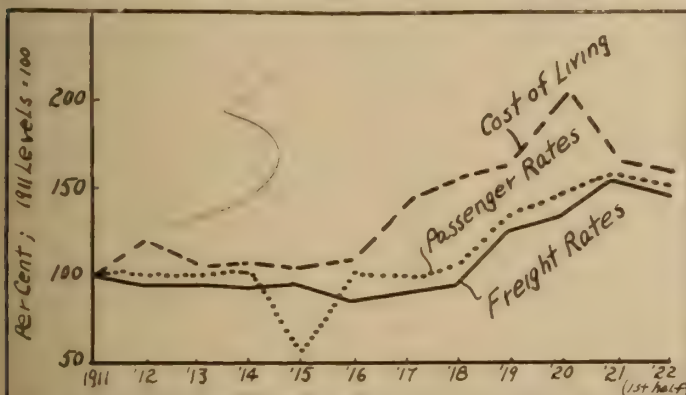


Fig 4. Percentage changes in Living Costs and Freight and passenger rates. 1911 = 100.

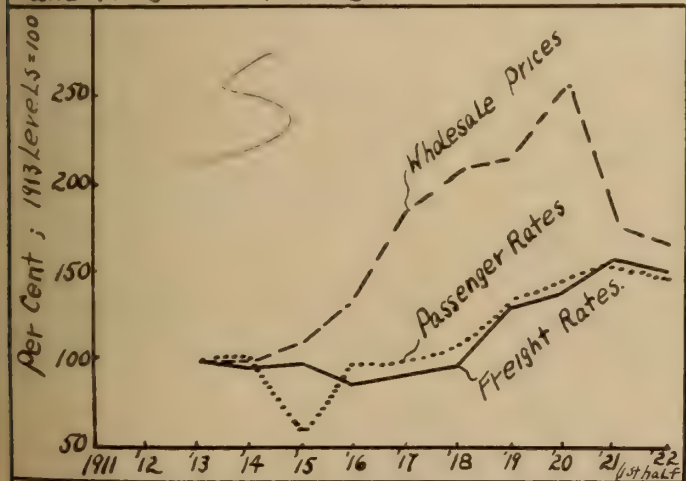


Fig 5. Percentage change in Wholesale Prices and Freight and passenger rates. 1913 = 100.

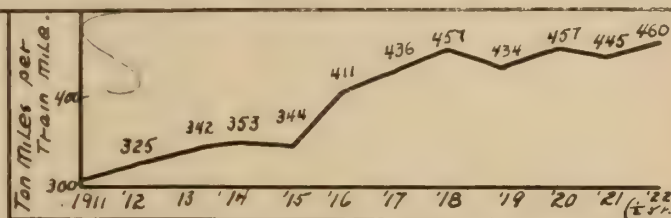


Fig 6. Ton miles revenue freight per train mile

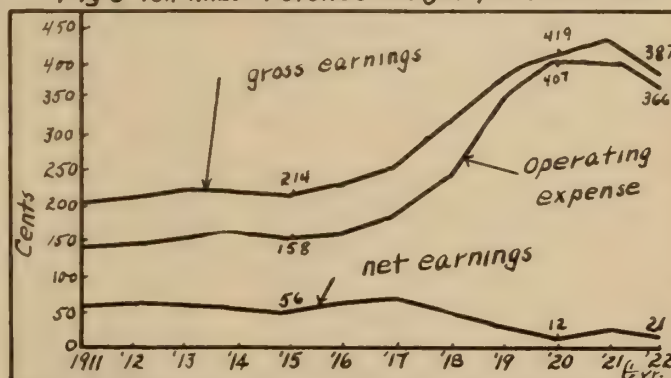


Fig 7. Earnings and expenses per Train Mile

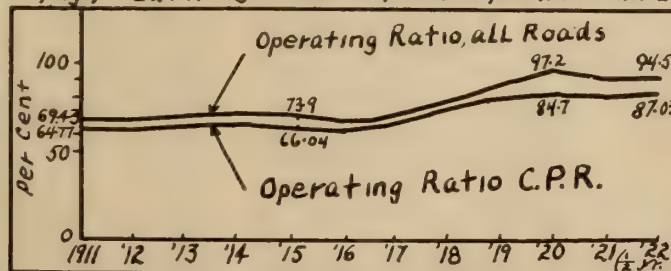


Fig 8. Operating Ratios, all roads and C.P.R.

secured by increased population will be lost.

If Canada is to enjoy the industrial growth which the character of her people and her natural resources indicate that she should enjoy, and if the number of people are brought into Canada in the next decade which it is proposed to bring in, it is evident that Canadian railways will be called upon to handle a great deal more traffic than they ever have in the past. Although the number of people per mile of railway is small, compared with other countries, the fact remains that there is already great need for properly located branch line mileage, and it is likely that railway construction will proceed at a fair rate. Additional passenger cars, freight cars, locomotives and auxiliary equipment of all descriptions will have to be furnished, while other facilities, as found necessary

opinion, a let-up in the increase in operating efficiency, and payment of an unduly large sum annually for additional capital, which would combine to offset advantages gained by the railways and the country by increased population in the future, can be prevented by one thing only, and that is adequate railway net earnings in the present.

In support of this statement, and in so far as operating efficiency is concerned, it may be stated that if railway net earnings are deficient, a tendency is at once produced to cut down on maintenance, and there is a tendency toward getting along with old and inefficient machines, instead of securing a new machine which would do the work at half the cost and pay for itself in a short time. A tendency is produced toward postponing the acquisition of new rolling stock, while producers and consumers

penses, the smaller will be the annual charge for capital (or for that part of the national debt which would have been cancelled if the taxes collected could have been used for the purpose, which is the same thing), which will have to be paid in the future, and the better the financial standing of a business or a Government, the lower will the interest rate be. A fundamental principle in an individual's affairs, or in the affairs of a business, or a nation, is that summed up in the statement, "The more we can pay as we go, the better off will we be in the end," and that applies very appropriately to the present Canadian railway situation.

Leaving aside all discussion as to the advisability of rate reductions already made, particularly with reference to the application of those reductions to various branches of industry, it would seem

that any further reduction in railway rates in the near future would be bad policy. The few figures presented show clearly that the railways are now in receipt of net earnings which are inadequate, while they are at the same time charging rates which are relatively much lower than in pre-war years. It would be well if, during the next few years, the railways be allowed to keep the benefit of any saving they may make possible by increased operating efficiency or otherwise, so that they may still further increase operating efficiency, in preparation for the big traffic of the future. It would be well that the privately-owned roads be enabled to provide for increasing operating efficiency out of earnings, instead of through additional capital issues. It would be well that the Government roads be given a chance to earn their operating expenses, and a portion of their fixed charges, so that the country will not be swamped with debt arising out of loans for railway expenditures. If the railways are not allowed adequate earnings, it can be taken as certain that operating efficiency will suffer, and increased traffic brought by increased population could not be handled economically. If the Government lines are not given an opportunity to pay their way, the pyramiding additions to the national debt will have the public taxed to death. Why not pay our obligations for transportation received, by adequate rates, and have done with it, instead of paying them over and over by paying compound interest forever?

If the policy of false economy which threatens be avoided, and if the railways be allowed adequate net earnings for the next few years, so that operating efficiency may continue to increase, and so that the public will not be called upon to pay for transportation at a rate which will be necessary to provide for interest on unduly large new capital expenditures, it may be expected that our railway problem will proceed to its final solution. If our transportation machine is to produce efficient transportation, it must be kept in condition to do so; mileage, equipment, necessary facilities must be properly co-ordinated, and rounded off into a correctly proportioned and smooth-working mechanism. If we get the population, our transportation machine will automatically become more economical through increased demand for its product, but if we do not keep the machine in good condition, and improve it here and there as opportunity offers, it will be found that its loss of efficiency will wipe out the economy introduced by increased population. But with railway net earnings adequate while the population is coming, it may reasonably be expected that the additional demand for transportation caused by the increased population, combining with the increased operating efficiency secured by reason of adequate net earnings, will place Canadian railways in a position to handle a volume of traffic hitherto undreamed of, more efficiently, and consequently at less cost to the public, than ever before.

Locomotive Stokers for G.T.R.—In reference to the announcement in Canadian Railway and Marine World for Dec., 1922, pg. 600, that the G.T.R. had ordered 12 Elvin mechanical stokers, to be applied to mikado locomotives, we are advised that they will be built by Montreal Locomotive Works.

Railway Rolling Stock Orders and Deliveries.

Abitibi Ry. & Navigation Co., Iroquois Falls, Ont., has bought a small Shay locomotive from Lima Locomotive Works, Lima, Ohio.

St. Marys Cement Co., St. Marys, Ont., has ordered one 4-wheel switching locomotive, type 0-4-0-T, from Montreal Locomotive Works. Following are chief details:—

Gauge	.....	36 in.
Weight, total	.....	28,800 lb.
Wheel base	.....	4½ ft.
Cylinders, diar. and stroke	.....	9 x 14 in.
Driving wheel, diar.	.....	27 in.
Driving journals	.....	4¼ x 6 in.
Boiler, type	.....	Straight top
Boiler, diar. first ring outside	.....	29½ in.
Boiler, pressure	.....	175 lb.
Firebox, length and width	.....	30½ x 26 in.
Tubes, no. and diar.	.....	48—2 in.
Heating surface tubes	.....	191 sq. ft.
Heating surface, firebox	.....	26.5 sq. ft.
Heating surface, total	.....	217.5 sq. ft.
Grate area	.....	5.5 sq. ft.
Tractive power	.....	6,250 lb.
Factor of adhesion	.....	4.6
Tank type	.....	Saddle
Capacity, water	.....	600 gals.
Capacity, fuel	.....	475 lb.

Canadian Car & Foundry Co.'s report for the year ended Sept. 30, 1922, issued recently, contains the following paragraph:—"Traffic on Canadian railways is now showing signs of substantial improvement. The movement of the large crop seriously taxed their resources, and this, together with the general improvement in business, has emphasized the need for additional rolling stock of all kinds. The uncertain position of the Canadian National Rys. has now been clarified by the conclusion of litigation between the Government and the G.T.R., and by the definite constitution of a board of directors controlling the combined national systems, under the authority of a distinguished railway administrator as chairman. It is hoped that early action will now be taken to provide the large renewals of rolling stock and motive power which the Canadian railways will undoubtedly require."

Abitibi Ry. & Navigation Co. has bought 100 flat cars from Canadian Equipment Co. They were built up from second-hand trucks, etc., with entirely new woodwork throughout, and will be used by the company for logging operations. They are built to M.C.B. and Interstate Commerce Commission standards, and are equipped with U.S. safety appliances, latest improved drop brake staff, etc. Side sills are bored for automatic trip stake pockets, which will be applied by the owner. Following are the chief dimensions:

Length over end sills	.....	41 ft.
Length over striking plates	.....	42 ft.
Width over decking	.....	9 ft. 4 in.
Side sills	.....	5 x 12 in.
Intermediate and center sills	.....	5 x 9 in.
End sills	.....	8 x 10 in.
Draft rigging	.....	Miner
Coupler	.....	M.C.B. automatic
Body and truck bolsters	.....	Steel
Coil springs	.....	8 per truck
Journal boxes	.....	McCord
Journals	.....	5 x 9 in.
Wheels, type and diar.	.....	M.C.B. 33 in.
Brake beams	.....	Metal inside hung
Weight	.....	28,500 lb.
Capacity	.....	80,000 lb.
Air brakes	.....	Westinghouse or New York

Canadian National Railways Rolling Stock, Etc.

The Grand Trunk Railway management, some two or three months ago, invited tenders for rolling stock, but they were not acted on, and were allowed to lapse, probably because no appropriation had been provided. Following the appointment of the Canadian National Rys.' new directorate, headed by Sir

Henry Thornton, it was decided to consolidate the Canadian National Rys. and the G.T.R. requirements, and, late in November, R. C. Vaughan, Vice President, Purchasing, Supplies and Stores Department, Canadian National Rys., invited tenders for the following rolling stock and work equipment, to be sent in by Dec. 14:—

Locomotives: 40 Santa Fe, about 69,600 lb. tractive power; 8 mikado, about 54,600 lb. tractive power; 16 mountain, about 49,600 lb. tractive power; 5 eight-wheel transfer; 3 six-wheel switching.

Passenger cars: 20 standard steel sleeping; 35 standard steel first class; 8 steel underframe first class; 10 steel mail; 30 steel baggage; 50 steel underframe express.

Freight cars: 100 freight refrigerator; 2,000 box, 40-ton; 1,250 stock; 100 hopper; 800 automobile; 100 general service, 50-ton; 50 caboose; 276 coal car bodies.

Work equipment: 100 ballast cars; 2 snow ploughs; 3 locomotive cranes, 15 to 20-ton, with pile drivers and leads; 2 locomotive cranes, 20-ton, without pile drivers and leads; 1 railway ditcher; 6 air dump cars, 10 to 12 yards capacity; 2 pile drivers; 2 wrecking cranes, 160 tons; 1 wrecking crane, 120 tons; 4 spreaders, with ditching attachment.

The specifications for the foregoing were prepared jointly by the Canadian National and the G.T.R. Mechanical Departments' officials.

An Ottawa press dispatch of December 21, stated that orders had been given for the locomotives, and that the cars would be ordered the following week. At the time of writing (Dec. 22), we are officially advised that no orders have been placed for any of the rolling stock for which tenders were invited, but that the matter will probably be dealt with between Christmas and the New Year, after Sir Henry Thornton returns to Ottawa from the United States.

Railway Lands Patented.—Letters patent were issued during Nov., 1922, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres
Canadian Northern Ry.	34.53
Canadian Pacific Ry. grants	1,115.03
Canadian Pacific Ry. roadbed and station grounds	22.81
Grand Trunk Pacific Ry.	12.20
Grand Trunk Pacific Branch Lines Co.	68.09

Total 1,252.16

Industrial and Logging Railways in British Columbia.—The British Columbia Minister of Railways' annual report for the year ended Dec. 31, 1921, shows that there were being operated within the province 83 logging and industrial railways, with a total length of 558.45 miles. The rolling stock used consisted of 161 steam, 27 electric, and 13 air locomotives; 9 gas driven cars, and 2,997 cars of all kinds.

Buffalo & Fort Erie Bridge Co.—The Dominion Parliament will be asked to incorporate a company with this title to build a bridge across the Niagara River for pedestrians, vehicles, carriages, electric cars, and for any other like purposes, with approaches from near Walnut St., Fort Erie, Ont., to near Hampshire St., Buffalo, N.Y. German & Brooks, Welland, Ont., are solicitors for applicants.

Sir Henry Thornton's Assumption of Office, and his Activities.

As stated in Canadian Railway and Marine World for Dec., 1922, Sir Henry W. Thornton, K.B.E., President, Canadian National Rys., arrived in New York from England on Nov. 28, being met by Hon. G. P. Graham, acting Minister of Railways and Canals, and Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, and Vice President Canadian National Rys. From New York he went direct to Ottawa, via Valleyfield and Coteau Jct., on G.T.R. business car Bonaventure, accompanied by Major Bell, arriving on Dec. 1, and being received by one of the Governor General's A.D.C.'s and some Railway and Canals Department's officials. He proceeded at once to the temporary offices secured for him at 122 Bank St., on the sixth floor of the Jackson Building, where a small clerical staff had been provided for him, and where R. A. C. Henry and V. I. Smart, of the Department's technical staff, had been transferred to for special service.

One of his first official acts, on Dec. 2, was to have a conference with S. J. Hungerford, Vice President and General Manager, Canadian National Rys., who went from Toronto for that purpose. On Dec. 4 he had a conference with the Prime Minister, and in the evening spoke at a dinner given by the Government to the U.S. Postmaster General and other delegates attending the postal conference between Canadian and U.S. officials.

He arrived at Montreal early on the morning of Dec. 5, accompanied by Major Bell, and made an inspection of the G.T.R. terminals, including Bonaventure station, Turcot and Southwark yards and Point St. Charles shops, on which he was accompanied by the following G.T.R. officials: W. D. Robb, Vice President and General Manager; J. E. Dalrymple, Vice President of Traffic; Major F. L. C. Bond, Chief Engineer; J. C. Garden, General Superintendent, Motive Power and Car Department; W. R. Davidson, General Superintendent, Eastern Lines; and R. Gilmour, Superintendent, Montreal Terminals. Sir Henry and a number of G.T.R. and Canadian National Rys. officials were entertained by Mr. Robb at luncheon at the St. James Club, after which Sir Henry had a number of conferences with officials and others and in the evening he attended the Montreal Board of Trade's dinner, an extended report of his speech at which is given on pgs. 17 to 20 of this issue. He returned to Ottawa that night.

Sir Henry left Ottawa by the Canadian National afternoon train on Dec. 8, accompanied by the following C.N.R. officials: S. J. Hungerford, Vice President and General Manager; W. A. Kingsland, General Manager, Eastern Lines; H. T. Hazen, Chief Engineer, Canadian Northern Eastern Lines; W. R. Devenish, General Superintendent, Ontario District; G. P. MacLaren, Engineer of Maintenance, Ontario District; W. R. Kelly, Superintendent, Ottawa Division; S. McIlwain, Ottawa Division Engineer, and R. A. C. Henry of the Railways and Canals Department. On Dec. 9 he met a number of C.N.R. officials in the morning, at the head office, 1 Toronto St., and was the principal guest at one of the frequent luncheons given by Lieut.-Governor Cockshutt, at Government House, to business men from various parts of the province, at which he spoke. In the afternoon he visited the C.N.R. shops at

Leaside, and afterwards conferred further with C.N.R. officials. In the evening he dined with Mr. Hungerford and other C.N.R. officials at the Toronto Club.

On Dec. 10 he went to Stratford, to see Hon. W. C. Kennedy, Minister of Railways and Canals, who was convalescing there after his severe illness, and he then returned to Toronto. On Dec. 11 he received a deputation in the morning from the Toronto Board of Trade, which urged the selection of Toronto for headquarters for the final co-ordinated Canadian National System, and then inspected the new union station and adjoining terminals. He was entertained at luncheon by the Empire Club, the attendance being the largest in its history. In the course of his speech, he stated that he intended to have a study made of Ontario's water powers, with a view to their use for railway electrification, etc. In the afternoon he left for Belleville, Ont., where he attended a dinner given by the city to W. D. Robb, Vice President and General Manager, G.T.R., and was one of the speakers.

Sir Henry started his inspection of some of the Quebec, and of the Maritime Provinces lines on Dec. 12, when he left Montreal at 9 a.m., accompanied by Major Bell and Gerard Ruel, director and General Counsel, Canadian National Rys. Of the other directors, E. R. Decary joined him at Quebec and accompanied him east, and on the return trip as far as Moncton, and J. H. Sinclair, of New Glasgow, accompanied him from Halifax to Campbellton, N.B. The following C.N.R. officials were in the party: S. J. Hungerford, Vice President and General Manager; C. A. Hayes, Vice President, Traffic Department; M. H. MacLeod, Vice President, Construction Department; R. C. Vaughan, Vice President, Purchasing, Supplies and Stores Department; C. E. Brooks, Mechanical Assistant, Locomotive Department, to Vice President, Operation and Maintenance Departments; G. E. Smart, Mechanical Assistant, Car Department, to Vice President, Operation and Maintenance Departments; W. A. Kingsland, General Manager, Eastern Lines; L. S. Brown, Assistant General Manager, Eastern Lines; A. F. Stewart, Chief Engineer, Canadian Government Rys. east of Armstrong, Ont.; W. U. Appleton, General Superintendent of Rolling Stock, Eastern Lines, and F. B. Tapley, Engineer of Maintenance of Way, Canadian Government Rys. east of Armstrong, Ont. The following G.T.R. officials were in the party: W. D. Robb, Vice President and General Manager; J. A. Yates, Treasurer, and J. C. Garden, General Superintendent, Motive Power and Car Departments. Major F. L. C. Bond, Chief Engineer, joined the party at St. John, N.B. The party travelled by special train, comprising C.N.R. business car 73, for the President; G.T.R. business car Ontario, for Major Graham Bell; C.N.R. business cars 51 and Kaien; G.T.R. business cars Ottawa and Quinte, and a compartment observation car. The party was accompanied by the general superintendents, district engineers and master mechanics over their respective districts, and by the superintendents, assistant superintendents, assistant master mechanics, bridge and building masters and roadmasters over their respective jurisdictions.

Short stops were made, on the way

east, at West Jct. and Riviere du Loup, Que., and Moncton, N.B. A stop of a little over an hour was made on Dec. 13 at Amherst, N.S., where the Maritime winter fair was in progress, and where Sir Henry addressed an audience of over 1,000 in the armories. After a short stop at Truro, N.S., Halifax was reached on the same afternoon, and Sir Henry spoke in the evening at a dinner given by the city council and board of trade, and next morning the terminal facilities, etc., were inspected and deputations were received from the city council and board of trade, and also from Dartmouth. Sydney, N.S., was reached on Dec. 15, at 2.30 a.m., and after the deputations from the Sydney and North Sydney boards of trade, and a delegation from Sydney Mines, had been received, was left again at 9.55 a.m. New Glasgow was reached at 6.15 p.m., where a dinner given by the business men was attended, and the party started again at 11.05 p.m., proceeding to Prince Edward Island. Charlottetown was reached on Dec. 16, at 9.30 a.m., and was left again at 2.10 p.m., after a board of trade luncheon had been attended. Moncton was reached on Dec. 16, at 9.30 p.m., where a dinner given by the board of trade, in connection with the 50th anniversary of the opening of the Intercolonial Ry., was attended, at which Lieut.-Governor Pugsley urged that the portions of the G.T.R. outside of Canada should be got rid of. Next morning, the general offices, shops, and other terminal facilities were inspected, and St. John was reached that evening. The St. John terminals, etc., were inspected on the morning of Dec. 18, and delegates were received from the city council and board of trade, to whom Sir Henry, in replying to Lieut.-Governor Pugsley's suggestion at Moncton, said he did not think it necessary or advisable to get rid of the G.T.R. lines in the U.S. He then spoke at the Canadian Club's luncheon, left St. John at 2 p.m., reached Fredericton at 5 p.m., and after addressing the civic club there, left at 10.40 p.m. An hour's stop was made at Bathurst, N.B., on Dec. 19, when a deputation from the board of trade was received. A similar stop was made at Mont Joli, Que., and a short one at Rimouski, Que., where the mayor and the president of the board of trade were received, Quebec being reached at 10.50 p.m. On the morning of Dec. 20, Sir Henry conferred with the harbor commissioners, inspected the terminals, and then spoke at a board of trade luncheon, leaving at 2.59 p.m., and reaching Montreal at 7.35 p.m., where the party dispersed, Sir Henry leaving for Ottawa at midnight. He left there again on Dec. 21 for the United States, owing to his mother-in-law's serious illness, expecting to return Dec. 26.

It is probable that Sir Henry, Major Bell and other officials will leave Ottawa, about Jan. 8, for an inspection trip of the Pacific coast.

Radiophone Operation of Railways.—Daily press reports stated recently that the Michigan Central Rd. was about to experiment on its Canadian lines with a system of operating trains by radiophone; that the first train to be so equipped would be run in January, and that if successful the system would be adopted generally on the company's lines. We are officially advised that there is nothing in the report.

Report on Possible Timiskaming & Northern Ontario Railway Electricification.

S. B. Clement, Chief Engineer, T. & N.O.R., North Bay, and J. G. G. Kerry, M.Sc., Consulting Engineer, T. & N.O.R., Toronto, were instructed by the Ontario Government, in Dec., 1921, to investigate and report on the advisability of electrifying the T. & N. O. Ry., with particular reference to sources of hydro-electric power available for the undertaking. A. L. Mudge was appointed as special electrical engineer, and A. T. McMaster as special hydraulic engineer. Messrs. Clement and Kerry presented their report recently, recommending a 3,000 volt d.c. system, as follows:—

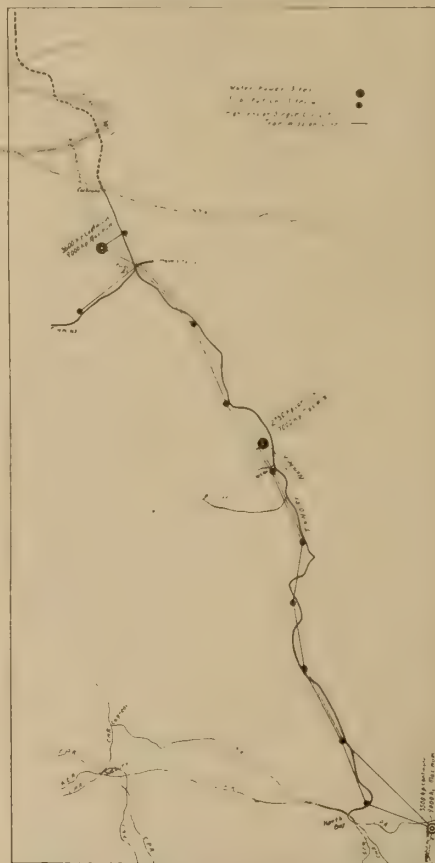
"We recommend electrification as a reliable and economical system of operation for the main line, for the Iroquois Falls and Porcupine Branches, and for other branch lines where the traffic has been sufficiently developed to justify the additional capital investment involved. We recommend electrification of the main line from North Bay to Cochrane (252.3 miles), and of the Iroquois Falls Subdivision (7 miles), and Porcupine Subdivision (33.1 miles), as providing a sound and self-supporting investment for the capital funds of the province in a further development and upbuilding of northern Ontario. We recommend that the commission take immediate steps to secure title, and control, of the water powers on the Amable du Fond, Blanche and Frederickhouse Rivers, referred to in the accompanying estimates. We recommend that after title to these water powers has been secured, opportunity should be given to the companies operating power plants in the district, such as Riordan Co., Northern Ontario Light & Power Co., Abitibi Power & Paper Co., Northern Canada Power Co. and others, to tender on supply of electric power for the commission. Comparison of such tenders with our final estimates of the cost of producing power from plants to be built by the commission, will determine how maximum economy in power cost can best be obtained. In any case, it would be desirable to establish connections with the power plants already in the district, for mutual assistance in cases of failure of any of the sources of power supply. Our estimates, however, do not include any specific amounts to cover the cost of making such connections. We recommend that the study of detail engineering questions be continued, and plans and specifications for electrification and for power development be completed, so that actual tenders for all the work involved may be obtained.

"From the standpoint of maintenance and transportation, the operation of the commission's railway, by the use of transmitted electric power, will prove to be entirely reliable and satisfactory, and will result in certain distinct advantages over steam operation, particularly in winter. This opinion is based on information received from officials of railways now operated by electricity, and has been verified by our examination of these railway electrifications."

In support of the foregoing recommendations, the report stated that while traffic on the T. & N.O.R. is relatively light, the opportunity to secure a power supply at low cost is exceptional, and tends to offset the effect of light traffic. The estimate of water power development capital cost was as follows: Frederickhouse River development, 50 ft.

head, 9,000 installed turbine h.p., \$1,000,157; Blanche River development, 115 ft. head, 7,000 installed turbine h.p., \$863,440; Amable du Fond River development, 130 ft. head, 9,000 installed turbine h.p., \$935,481; 100 miles of 66,000 volt feeder transmission line at \$4,300 a mile, \$430,000; total cost generating stations and high tension feeder transmission line, \$3,229,078.

The estimated cost of electrifying the line to give it a capacity to handle the expected 1925 traffic, calculated at 25% greater than that handled in 1921, was reported as follows: Railway transmission system, 312 miles of 66,000 volt line, \$1,279,200; railway substations, 7-1,500 k.w. automatic, \$735,000; 2-1,500 k.w. hand, \$190,000; 1-3,000 k.w. hand, \$165,000; 1-1,500 k.w. portable, on 2 cars, \$90,000; power indicating and lim-



Location of Water Power Sites, Substation Sites and Transmission Lines, for T. & N. O. Ry. Electrification.

iting device, \$62,500; 3,000 volt d.c. power distributing system, overhead feeders and bonding, 410 miles, \$2,740,000; twelve 150-ton freight locomotives, \$1,800,000; five 150-ton passenger locomotives, \$750,000; nine 80-ton switching locomotives, \$774,000; 10 heater cabs, 43 tons, light, \$275,000; gasoline motor repair car for overhead work, \$25,000; cost of power development as estimated above, \$3,229,078; less salvage value of released steam equipment, \$900,000; total cost, \$11,214,778.

The report compared the actual cost of operation in 1921, with steam locomotives, with the estimated cost of operation with electric locomotives, those items affected by the type of power used comparing as follows:—A., with steam power: Water station maintenance, \$11,375; fuel station maintenance, \$2,495;

water, \$31,947; locomotive repairs, \$307,103; locomotive house expense, \$141,985; locomotive depreciation, \$21,288; fuel for locomotives, \$817,845; hire of freight cars for transporting locomotive fuel, \$13,133; transportation of locomotive fuel on T. & N. O. R., \$466,567; total, \$1,413,378. B., with electric power: Water, \$250; transmission line maintenance, \$24,960; substation operation, \$37,000; substation maintenance, \$12,500; power distribution system maintenance, \$63,000; locomotive repairs, \$167,130; locomotive house expense, \$37,140; locomotive depreciation, \$60,480; electric power supply, operation and maintenance, \$96,872; coal for heating passenger cars, \$13,000; heating tenders, repairs and maintenance, \$18,500; wages, heater tender firemen, \$16,650; heater tender depreciation, \$5,500; total, \$552,982. Balance in favor of electrical operation, \$860,936; capital cost of electrification, \$10,914,778, this being \$300,000 less than above estimate for 1925 traffic, on account of two less freight locomotives being required; rate of interest earned on investment, 7.89%.

The report then compared the costs of operation on the basis of the supposed 1925 traffic, and found a saving of \$1,049,596 in favor of electrical operation, or at the rate of 9.35% on the estimated capital cost of \$11,214,778. It then compared the costs on the basis of a traffic 50% greater than that handled in 1921, and found a saving of \$1,249,738 in favor of electric operation. On a capital cost of \$12,105,778 (the increase in capital cost being due to the acquisition of 3 more freight locomotives, 2 more passenger locomotives, 1 more switching locomotive, and 2 more heater tenders, on account of the increased traffic), that saving would represent a return of 10.31%.

The report showed the cost of coal to be a most important factor in making comparisons. Analysis showed that cost on T. & N. O. R. locomotives was \$5.12 in 1914 and \$9.49 in 1921. In the comparisons given above, coal at the 1921 cost was taken. While it is natural to assume that a decrease in its cost would be accompanied by a decrease in the costs of electrifying and electrical operation, this was not figured on by the investigators, and a comparison of steam and electric operating economy on this basis for the 1921, 1925, and 1921 plus 50%, traffic, with coal at \$7.50 a ton, showed that on the 1921 traffic the saving in favor of electrical operation would be \$631,481, or 5.79% on the investment, while on the 1925 traffic it would be \$851,798, or 7.59% on the investment, and on the 1921 plus 50% traffic it would be \$1,022,528, or 8.45% on the investment. The report stated that A. A. Cole, Mining Engineer for the commission, had been consulted concerning the possibility of using peat from the various bogs near the railway as locomotive fuel, and had advised that there is no reason to think that it could be done.

It was further pointed out that while the T. & N. O. R. locomotives now in use are modern and efficient, recent developments in locomotive design and practice indicate that a reduction of possibly 20% in fuel consumption might be made. If the improvements possible were made on the steam locomotives, at an estimated capital cost of \$300,000, the net annual saving on the basis of the estimated

1925 traffic would be \$138,068. On the other hand, however, on the testimony of officers of railways where electrification had been carried out, and on that of electrical manufacturing companies' experts, the report stated that an annual saving of \$229,837, on the basis of the 1925 traffic, could be expected from indirect economies due to electrification, and it was further stated that the two considerations, viz., the saving due to improving the steam locomotives, and the indirect economies from electrification, may be conservatively considered as offsetting each other.

Additional reasons advanced in the report for the adoption of electrical operation were as follows: Electrification will enable increased traffic to be handled with less increase in track facilities than if steam operation is continued, and will obviate the necessity of enlarging the motive power shops and ultimately removing them to a new site. Electrification, in eliminating smoke and cinders, and giving a smoother acceleration to trains, will prove attractive to tourists, and will have a very definite advertising value. It will decrease the danger from forest fires. It will release the commission from dependence upon locomotive fuel imported from the U.S., and will result in the utilization and further development of a great natural resource, the water powers of the Nipissing and Timiskaming districts, making the whole of the commission's undertaking self-contained.

The study on which the report was based included: 1, Consideration of traffic conditions and tendencies; 2, analysis of operating expenses under present steam operation; 3, examination of the more important steam railway electrifications in the U.S. and Canada, and conferences with operating and engineering officials in charge; 4, conferences with representatives of manufacturers of heavy electric railway equipment; 5, estimates of cost of installing electrical equipment of suitable type and of sufficient capacity to handle the present and estimated future traffic. These estimates were based on the 3,000 volt d.c. system for locomotive operation, but no attempt was made to come to a final decision regarding the details of electric equipment; 6, investigation of sources of hydro electric power supply; 7, estimates of construction cost and operating expenses of hydro electric power developments; 8, estimates of operating expenses under electrical operation, for comparison with operating expenses under steam operation.

It was stated that the water powers mentioned above are such that, from the standpoint of cost, they would not be considered highly desirable for general commercial use, but that they are well suited, both as to capacity and location, to serve as primary sources of electric power for T. & N. O. R. use, and the Ontario Government has been requested to make no disposition of them pending further communication from the commission.

The report made it clear that while the investigation was of a preliminary nature, the subject had been gone into thoroughly within the limits imposed by that fact, and it was recommended that further studies, embracing the numerous engineering details involved, should be undertaken.

The T. & N. O. R. Commission, in presenting the report to the Ontario Government, recommended that electrifica-

tion be postponed for the present, and was given authority by the Government to continue its investigations in the matter.

The accompanying map shows the location of proposed water power sites, substation sites, and transmission lines.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian National Rys.—A. C. CAMPBELL, heretofore of the Freight Soliciting Department, Winnipeg, has been appointed Freight Agent, Moose Jaw, Sask.

H. A. DIXON, Chief Engineer, Western Lines, Canadian National Rys., Winnipeg, has been given jurisdiction as Chief Engineer over Canadian Northern Pacific Ry. lines, T. H. WHITE, heretofore Chief Engineer, Canadian Northern Pacific Ry., at Vancouver, having relinquished those duties and been appointed Consulting Engineer.

Canadian Pacific Ry.—G. C. COCHLAN, heretofore District Freight Agent, Detroit, Mich., has been appointed District Freight Agent, Toronto, vice C. S. Morse, transferred to Ottawa.

R. J. FOORD has been appointed City Ticket Agent, Toronto, vice W. E. Underwood, appointed City Passenger Agent there.

C. S. MORSE, heretofore District Freight Agent, Toronto, has been appointed District Freight Agent, Ottawa, vice F. P. Tinker, transferred to Detroit, Mich.

F. P. TINKER, heretofore District Freight Agent, Ottawa, Ont., has been appointed District Freight Agent, Detroit, Mich., vice G. C. Cochlan, transferred to Ottawa.

W. E. UNDERWOOD, heretofore City Ticket Agent, Toronto, has been appointed City Passenger Agent, there, vice G. S. Beer, whose appointment as Assistant District Passenger Agent, Toronto, was announced in a recent issue.

Edmonton, Dunvegan & British Columbia Ry.—M. W. BOUCHER, heretofore General Locomotive Foreman, has been appointed Assistant Superintendent. Office, McLennan, Alta.

S. R. LAMB, Resident Engineer, has had his jurisdiction extended over the maintenance of way.

J. G. REID, Chief Engineer and Superintendent, E. D. & B. C. R., has resigned and taken service with the Sydney E. Junkins Co., contractors for the C.P.R. pier B.C. at Vancouver, B.C.

Grand Trunk Ry.—H. HULATT, Manager of Telegraphs, after 16 years service, has resigned to enter other business, and that position has been abolished.

J. A. CLANCY, Superintendent, Transportation, Western Lines, has been transferred from Chicago, Ill., to Detroit, Mich., with office at 400 Jefferson Ave. East.

O. F. CLARK, Car Accountant, Western Lines, has been transferred from Chicago, Ill., to Detroit, Mich., with office at Brush St. station.

T. RODGER, heretofore Superintendent of Telegraphs, Eastern Lines, has been appointed Superintendent of Telegraphs and Telephones, with jurisdiction over the entire system, and will perform the duties performed hitherto by the Manager of Telegraphs, reporting to the

Operating Manager, Montreal, and the General Manager, Western Lines, Detroit, Mich. Office, Montreal.

Michigan Central Rd.—E. L. JENNINGS has been appointed General Agent, Detroit, Mich., vice S. W. Carder, whose appointment as Assistant General Freight Agent, Buffalo, N.Y., was announced in our last issue.

W. D. McVEY, heretofore Assistant General Freight Agent, Buffalo, N.Y., has been appointed one of the three Assistant General Freight Agents at Detroit, Mich., vice E. W. Brunck, promoted.

Grain in Store at Elevators.

The Dominion Bureau of Statistics, Internal Trade Branch, reports that for the week ended Dec. 8, 1922, the quantity of grain in store increased by: Wheat 17,965,860 bush., and oats 1,012,030; the decreases being: Barley 177,021, flax 19,541 bush., and rye 124,598.

In western country elevators decreases were shown of wheat 2,762,986 bush., and flax 42,896. The increases were: Oats 580,630 bush., barley 164,430, and rye 21,190. During the previous week, 16,787,634 bush. of all grains were received at western country elevators and 18,843,826 were shipped.

At interior terminal elevators, wheat decreased by 236,120 bush., barley 4,409, and flax 772, while oats increased 15,443 bush. The receipts during the week were 791,333 bush., and shipments, by rail, 473,057, and by ship (from Vancouver), 544,133.

The public and private terminal elevators at Fort William and Port Arthur showed increases, wheat 2,216,993 bush., oats 17,506, flax 36,129, and decreases, barley 404,440 bush., and rye 211,765. The total receipts of all grains at Fort William and Port Arthur during Nov., 1922, were 66,533,210 bush., and 8,934,165 lb. of mixed grains, and the shipments were, by rail, 1,525,506 bush.; all grains, 1,857,254 lb. of mixed grain, and by ship, 119,394,807 bush., all grains.

Winnipeg private terminal elevators showed decreases, wheat 238 bush., oats 1,705, and increase of barley, 291 bush.

Eastern public elevators showed increases, wheat 1,533,293 bush., oats 174,379, barley 14,152, and decreases, flax 12,002 bush., and rye 2,904. Receipts of all grains were, by rail, 846,750 bush., and the shipments were, by rail, 2,036,586, and by ship 795,437.

U. S. grain in store at eastern public elevators was 4,151,468 bush., compared with 3,926,302 for same period, 1921.

At Buffalo, N.Y., and Duluth, Minn., there were increases, wheat 16,675,261 bush., oats 186,078, barley 72,487, and rye 1,541.

United States Atlantic seaboard ports showed increases, wheat 539,652 bush., oats 39,699, rye 67,340, and barley a decrease of 19,532 bush.

The total amount of wheat exported during Nov., 1922, was 55,315,972 bush., compared with 29,254,036 for Nov., 1921.

Board of Railway Commissioners Examiners.—The Winnipeg Board of Trade is reported to have under consideration a proposition to ask for the appointment of four examiners, under the Board of Railway Commissioners, to investigate minor cases and report their findings to the commissioners for action. Abitibi Railway & Navigation Co. has bought 4,000 tons of relaying rails, 2,500 tons of 85 lb. and 1,500 tons of 56 lb., from Canadian Equipment Co.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Abitibi Railway & Navigation Co.—We were advised recently that the grading, trestle-building, track laying and ballasting on the 16 miles standard gauge logging railway from Iroquois Falls, the terminus of a branch of the Timiskaming & Northern Ontario Ry., to Hughes, Ont., where a junction is effected with the National Transcontinental Ry., had been practically completed, and that a 5-mile spur line had been built from mile 8, into the bush. (Nov., pg. 568.)

Burrard Inlet Tunnel & Bridge Co.—A press report states that the Northern Construction Co., which has a tentative contract to build a bridge over the second narrows of Burrard Inlet at North Vancouver, reported to the directors, Dec. 7, that after having completed investigations on the site, it was prepared to go on with the work under the terms of the agreement of Sept. 26, 1922, which provides for the construction of the bridge for \$1,250,000, payable in municipally guaranteed bonds, plus \$55,261 to cover any deficiency in the price realized on the bonds being put on the market, which latter provision it proposed to abandon.

The councils of the North Vancouver City, and of North Vancouver District, were reported recently to have passed bylaws asking the ratepayers to give them authority to issue debentures to cover their respective portions of the proposed bridge, the voting to take place Dec. 20, 1922.

At the North Vancouver City Council meeting, Dec. 4, the Mayor is reported to have stated that a committee of the council had waited on the Vancouver Harbor Commission respecting elevator sites on the north shore, and received an intimation that the commission had bought about a mile of water frontage on the north shore for elevator purposes. The construction of such elevators would be of great advantage to North Vancouver, and he thought that the Harbor Commission would look favorably upon a proposition to take over the company's undertaking. (Nov., 1922, pg. 568.)

Calgary & Fernie Ry.—The Dominion Parliament is being asked to extend the time within which the company, which was incorporated some years ago, may commence and complete its authorized line of railway from Calgary, Alta., to Fernie, B.C. The company was granted an extension of time for construction in 1921, but while surveys have been made, no construction has been started.

Connors Creek Logging Railway.—A press report states that work has been started on a 7-mile logging railway from Greencourt, on the Canadian National Ry. Onoway-Whitcourt branch, into the Connors Creek district, Alberta.

Cowichan Bay Ry.—The question of a proposed grant of 600 or 700 acres of the foreshore of Cowichan Bay to the Cowichan Bay Ry. Co., was discussed recently by representatives of the company and the landowners with the British Columbia Government. H. C. Hall, K.C., for the company, contended that the projected railway would be complementary to the Canadian National Ry., that it was being promoted with the concurrence of the former directors of that railway; that it was necessary for the development of the timber resources of the district, and that its construction would

increase the value of the farm lands in the area. H. G. Lawson, on behalf of other lumbering interests, claimed that the Esquimalt & Nanaimo Ry. had to provide its own booming ground, and contended that there was nothing in the company's claims to show that the foreshore area asked for was necessary for railway purposes. Property owners argued that the construction of the railway would cut off their access to the water; that it would destroy the value of property round the bay and the lake, and that the construction of a short spur line by the Canadian National Ry. would give all the accommodation desired. The Premier stated that the matter would be given consideration, and that no hasty decision would be arrived at.

We are advised that among those interested in this railway project are H. W. Bevan, E. F. Miller, J. T. Malter, Duncan, B.C., and H. C. Hall, Victoria. A preliminary report on the projected line has been made by D. O. Lewis, Director of the Engineering Corporation, Ltd., Vancouver, and formerly Division Engineer in charge of construction on the Canadian Northern Pacific Ry. on Vancouver Island, but no surveys have been made. (Nov., 1922, pg. 568.)

Duluth to Fort William and Port Arthur.—A Duluth, Minn., press dispatch of Nov. 9, gives some further information about the projected Duluth & Ontario Ry., to which reference was made in Canadian Railway and Marine World for Nov., 1922, pg. 568. The report states that Robert Waldron is negotiating for the taking over of the old Duluth & Northern Rd., from the Weyerhaeuser interests, who bought it recently from the Alger-Smith Co., and that if the purchase is made, the Duluth & Ontario Rd. Co. will be incorporated to take over the line and extend it. The new railway would run from Duluth to Knife River, the southern terminus of the Duluth and Northern Rd., continuing along that line to its most northerly point, at mile 99, and then on to Port Arthur. (Nov., 1922, pg. 568.)

Esquimalt & Nanaimo Ry.—Work was reported as having been started recently on the construction of the northern or railway side of the Johnson St. bridge, Victoria, B.C., by the city council's workmen, under the charge of F. M. Preston, City Engineer. The old railway bridge was removed to permit the work to go on, and the railway traffic is being carried over the highway portion of the bridge. (Nov., 1922, pg. 568.)

Hudson Bay Ry.—A recent press report stated that Canadian National Ry. officials had given orders for the picking up of all unused railway material along the Hudson Bay Ry. from Pas, Man., to the Kettle River Rapids, where the track ends at present. The material was said to include a large number of ties, 80 lb. steel rails, rail fastenings, switches, telegraph wire, and other construction material. It was stated that the work was to be started at once, and that it was the Government's intention not to do any further work in the way of completing the line, between the Kettle River rapids and Port Nelson, the projected terminus on Hudson Bay. We are officially advised that the work being done consists of picking up, principally, ties and lumber, to enable it to be used before its natural life is exhausted.

Another press report quoted J. A. Campbell, Manitoba Government Commissioner for Northern Manitoba, as saying that the material collected would be used for the betterment of the line, particularly north of Pikwitonei, at about mile 214, to which point a fortnightly train is being operated. Still another report stated that the ties and other material would be used in bettering the line from Pas to mile 214, and that the 80 lb. steel rails would be used in replacing 60 lb. rails on the Canadian Northern Ry line from Hudson Bay Jct. to Pas. (Aug., pg. 409.)

Lacombe & Northwestern Ry.—A party representing the Alberta Government returned to Edmonton recently, after having made an inspection of the extension of this line from the former end of track, about 4 miles beyond Rimbey, to Headley, 12 miles. The extension just completed gives the line a total length of 49 miles from Lacombe, and opens up a good lumber and farming country. It is said to be the intention to extend the line through to Edmonton, as soon as the Government can obtain the necessary appropriations from the Legislature. (Sept., 1922, pg. 458.)

Michigan Central Rd.—A press report states that the United States Secretary of War has granted a permit to the Niagara River Bridge Co., and the Michigan Central Rd., to build a bridge across the Niagara River to replace the present cantilever bridge over the river between Niagara Falls, Ont., and Niagara Falls, N.Y. A contract is reported to have been let to the American Bridge Co., Philadelphia, Pa., for the construction of this bridge.

Michigan Central Rd.—Plans for the extension of the yards at St. Thomas, Ont., are reported to have been under discussion for some time. The work, which it is stated is estimated to cost \$500,000, involves the closing of Park Ave., in which matter Yarmouth Tp. is primarily interested. The township council refused to accede to this request, and negotiations have been going on, during which the council is stated to have suggested the erection of an overhead bridge to carry Park Ave. over the tracks, as well as other modifications of the company's plans. A deputation of Yarmouth Tp. residents protested at a recent council meeting against the proposal to erect an overhead footbridge, and asked for the erection of a bridge to carry all traffic. It was pointed out that the council passed a bylaw in 1885 authorizing the Canada Southern Ry. to build an overhead bridge at this crossing. The matter was referred to the council's solicitor. (Oct., 1922, pg. 518.)

Montreal to National Transcontinental Ry.—The Montreal Chamber of Commerce passed a resolution recently asking the Quebec Government to investigate the possibility of building a direct railway from Montreal to the National Transcontinental Ry. as a provincial enterprise. Two projects have been discussed at different times to provide this connection, but both failed. The first was through the Lake Manuan district to Parent, and the second was the North Ry., which in 1912 was authorized to build from Montreal to the National Transcontinental Ry. at the crossing of the Bell River, Que., and thence to James Bay. The right to build the Montreal-Bell River portion of the line

was bought from the promoters, together with surveys, etc., for \$250,000 in 1914.

Newfoundland Ry.—A recent press report stated that work had been started on a branch railway from near Grand Lake, mile 363.25 from St. John's, on the transinsular line, to Junction Brook, in connection with the proposed Humber River power development plant. It is stated that the branch will leave the main line about 3.5 miles east of Grand Lake station, and continue across Junction Brook. This Junction Brook, or River, carries the waters of Grand Lake and Sandy Lake into the Humber River. The report also stated that 4 pile drivers had been delivered at Grand Lake for use on the work. Other work in connection with the project is also reported to have been started at Deer Lake, about 10 miles west of Grand Lake. (Aug., 1922, pg. 440.)

North Shore Ry.—A press report states that negotiations are nearing completion for the resumption of coal mining in the Beersville district, New Brunswick, and that as a result the North Shore Ry., built in 1903 by the Beersville Coal & Ry. Co., will be re-opened. The railway passed to the North Shore Ry. Co. in 1907, and after some years of unsuccessful operation, went into the hands of a receiver. During the war period it was proposed to take up the rails and sell them at the high prices then prevailing, but this was not done, and in 1918 the railway property was sold at auction for the benefit of the creditors, and was bid in by F. S. Gage, Haverhill, Mass. G. B. Burchell, Little Bras d'Or, N.S., is reported to be interested in the present project, according to a statement credited to the New Brunswick Minister of Lands and Mines, and is negotiating for the purchase of the property. The railway extends from Adamsville Jct., on the Intercolonial Ry., 31 miles easterly from Moncton, and extends to the Beersville collieries, 8.63 miles.

The Quebec Development Co. is reported to have started work on the construction of a railway from Hebertville, mile 198 from Quebec, on the old Quebec & Lake St. John Ry., for use in the building of a dam at the Grande Descharge of Lake St. John. Contracts are reported to have been let for grading and trestle-work on the line from Hebertville to St. Joseph D'Alma, for a bridge across the Little Descharge, and for another one over a small branch of the Saguenay River, as well as for piers, foundations and other works. Arrangements are also reported as being made for contracts for the construction of the dam at the Grande Descharge. Hebertville is three miles south of Hebertville station, so that the railway will run northerly from Hebertville station to St. Joseph D'Alma, which is on the shore of the Little Descharge. Alma Island separates the outflow of Lake St. John into two branches, the Little Descharge and the Grande Descharge, which farther on becomes the Saguenay River.

The Premier of Quebec is reported to have announced, Dec. 9, that an order-in-Council had been signed ratifying a contract between the Government and the Quebec Development Co. for the building of two dams at the Grande Descharge. The first part of the project would, it was stated, be started immediately, and was expected to be completed in about three years, at a cost of about \$12,000,000. The first development is expected to produce 200,000 h.p., and

the fully completed plan is expected to produce 1,000,000 h.p. Sir William Price, Quebec, and J. B. Duke, New York, are reported as being associated with the enterprise.

Salmon River Valley.—A Prince Rupert, B.C., press report states that C. F. Caldwell, President New Alaska Mining Co. and the Portland Canal Ry. & Terminal Co., has arranged with C. A. Carlson, of the Siems-Carlson Construction Co., Spokane, Wash., to build a railway from Hyder up the Salmon River Valley. We are unable to trace a place named "Hyder," but Hydah is a stopping place on the Grand Trunk Pacific Coast Steamship route between Vancouver and Prince Rupert, at the mouth of the creek or canal, into which the Dean or Salmon River flows.

St. Francis Valley Ry. Co.—The Quebec Legislature has extended the time for the construction of the company's proposed line from Richmond or Melbourne to St. Francis du Lac, to Dec. 21, 1924, for a section of 5 miles, and to Dec. 21, 1928, for the remainder of the line. (April, 1919, pg. 191.)

Sydney & Louisburg Ry.—A press report states that re-ballasting of the Sydney & Louisburg Ry., between Sydney and Louisburg, N.S., with crushed slag has been completed.

Timiskaming & Northern Ontario Ry.—The question of the construction of a branch line from Swastika through the Kirkland Lake mining district to the Quebec border, has been discussed, and a delegation of mining men is reported to have interviewed G. W. Lee, Chairman T. & N. O. R. Commission, recently in regard to it. We are officially advised that the Commission is not doing anything in the matter at present. (Oct., 1922, pg. 518.)

Timiskaming & Northern Ontario Ry.—We are officially advised that track has been laid on 44.4 miles, from Cochrane, Ont., to the second crossing of the Abitibi River, on the 70-mile extension of the line to near Newpost on the Abitibi River, and that a considerable amount of work has been done on the remaining 26 miles. The contractors are Grant, Smith & Co. and McDonnell, Ltd. Newpost is about 115 miles from tide water near Moose Factory on James Bay, Hudson Bay, which is the final objective of the line. The T. & N. O. Ry. Commission has legislative authority to extend the line to this point, and engineering parties are reported to have been on the field locating a route. No further construction, however, can be undertaken beyond Newpost, until an order-in-Council has been passed and funds provided. We are officially advised that, while it is intended to continue with the construction of the line to James Bay, the question of calling for tenders has not been definitely decided upon. (Oct., pg. 578.)

Victoria Lumber & Manufacturing Co.—A press report states that about 40 miles of logging railway line are being built by the Victoria Logging & Manufacturing Co., in connection with its mills at Chemainus, Vancouver Island, B.C. The line under construction is to open up the Haslam Creek district, and will be tributary to Oyster Harbor, 2 miles north of Ladysmith. Grading on about 10 miles of the line is reported to have been completed, and work is in progress on bridges and the track laying. This piece of line is expected to be ready for operation in March. It is reported that another line to be built will serve a district farther south on the

Chemainus River, and that it will run by way of Copper Canyon to about 3 miles from Sahtlan station, on the Esquimalt & Nanaimo Ry.

Wigwam Pulp & Paper Co.—We are officially advised that the Canadian Pacific Ry. and the Great Northern Ry. (U.S.A.) have decided to take no action at present in connection with the proposal to build a spur line to serve a mill proposed to be erected near Elko, B.C., by the Wigwam Pulp & Paper Co. (Nov., 1922, pg. 568.)

Freight and Passenger Traffic Notes.

The building in which the C.P.R. downtown freight office is located, at the corner of Dundas and Richmond Streets, London, Ont., is reported to have been re-rented from April 1, and the C.P.R. officials expect to have to move to another building before that date.

The C.P.R. is reported to have hauled 82,262 cars of grain from western points to Fort William, Ont., between Sept. 1 and Nov. 21. The total shipment in bushels was 100,750,894, of which 96,701,456 was carried on east by water, and 4,049,237 by rail.

A London, Eng. cable, referring to the arrangement made for the removal of the embargo on the importation of Canadian cattle to Great Britain, states that it will mean the exportation from Canada of about 200,000 annually, the carrying of which will add \$2,000,000 to Canadian railways freight revenue.

Canadian railways withdrew, on Dec. 10, the requirement that freight charges to the U.S.-Canada boundary on shipments of coal and coke, be prepaid, and on Dec. 6, the Coal and Coke Association were reported in New York to have announced that arrangements had been completed to accept all shipments of coal and coke to Canadian destinations with charges collect.

Guy Tombs, transportation agent, etc., and formerly with the Canadian National Rys., is reported, in speaking at the Canadian Association of British Manufacturers' luncheon at Montreal recently, to have said, when it is considered that there are 14 passenger trains operated daily between Montreal and Ottawa, it is realized that too much money is being spent on passenger service. The equipment of transcontinental passenger trains cost in the neighborhood of \$6,000,000, which would have provided 2,000 box cars, of which he considered the railways badly in need.

The Canadian National Rys., as a result of suggestions received relative to the self-propelled car service put in operation on its Vancouver Island line between Victoria and Sooke River road, have decided to reverse the schedule, and to start the car from the latter point instead of from Victoria. The new service was put in operation Dec. 11, a double daily service being given. Cars leave Sooke River Road at 8 a.m. and 3 p.m., reaching Victoria at 9.15 a.m. and 4.15 p.m.; returning from Victoria at 10.30 a.m. and 5.30 p.m., reaching Sooke River Road at 11.48 a.m. and 6.53 p.m.

With the opening of service by the Canadian Government Merchant Marine from Halifax to the West Indies on account of close of navigation at Montreal, the general cargo rates will be reduced to the basis of 40c. per c.f., and 75c. per 100 lb. It is presumed that other lines will give similar rates.

Mainly About Railway People Throughout Canada.

H. H. Collins, cashier, G.T.R., Montreal, died there, Dec. 2, from pneumonia. He was born at Brighton, Eng., in 1865, and entered G.T.R. service in 1886, as clerk in Audit Department, Montreal. He was transferred to the Treasurer's office in 1892, and was appointed cashier, Aug. 8, 1908. His father was in G.T.R. service for several years, and is now on the superannuation list, and a son, Leslie Collins, is in the Vice President and General Manager's office. W. Collins, of the Motive Power and Car Department, is a brother.

Mrs. M. Carvell Fisher, widow of the late Capt. A. M. Fisher, R.A.M.C., who died at Ottawa, Ont., Dec. 12, from pneumonia, was the only child of Hon. F. B. Carvell, Chief Railway Commissioner for Canada.

Wm. Fulton, District Passenger Agent, C.P.R., Toronto, in addressing the Toronto Rotary Club recently, pleaded for consideration for ticket clerks, who work under great tension, and have to take the greatest care to supply correct transportation. He dealt with the C.P.R.'s extensive operations, and contended that passenger rates, which are now only slightly above pre-war levels, are very reasonable.

Capt. Thos. E. A. Hall, Division Engineer, Nipissing Division, Ontario District, Canadian National Rys., Capreol, Ont., died there, suddenly, Dec. 1. He was born at Liverpool, Eng., in 1878, and was educated there, going to South Africa to complete his course in railway engineering. He served through the South African war, came to Canada shortly after, and entered C.P.R. service as instrument man, and Resident Engineer, on the construction of the Bolton-Sudbury line, and later served in the Maintenance Department. He transferred to Canadian Northern Ry. service in 1909, and, to 1913, was Resident Engineer on the construction of the Toronto-Ottawa line, at Brighton, Ont., and from 1913 to 1915 was Division Engineer, Division F, Ottawa-Capreol Line, Canadian Northern Ry., opening up and completing construction on that division. In 1915 he went overseas as Captain in the Canadian Army Service Corps, and served throughout the war, and for some time after the signing of the armistice. As a result of his services, he suffered from heart displacement due to concussion, and was in receipt of a pension. He returned to Canada in 1919, since when he had been, to March, 1921, Division Engineer, Ottawa Division, Canadian National Rys., Ottawa, Ont.; March, 1921, to April, 1922, Division Engineer, Montreal Division, C.N.R., Montreal; and from April, 1922, until his death, Division Engineer, Nipissing Division, Ontario District, C.N.R., Capreol, Ont. He had been feeling unwell for about three months, due to war injury, and had made arrangements for three months leave to go to California for a rest, and was getting ready to take the train, when his death occurred.

D. B. Hanna, ex-President, Canadian National Rys., who left Toronto, Nov. 25, returned Dec. 14, after visiting Seattle, Wash., Victoria and Vancouver, B.C., and Winnipeg.

John Irving, formerly General Sales Agent, Nova Scotia Steel Co., died at his house in Westmount, Montreal, Dec. 8, aged 55, after an illness of about a year, during the last two months of

which he was confined to bed, first at Montreal General Hospital and then at his house. He was a son of the late Wm. Irving, an architect, who came to Canada from Edinburgh in 1885, and was born in Toronto. For several years he played in the Toronto lacrosse team. He entered the Nova Scotia Steel Co.'s service in 1898, and for some 13 years past had his headquarters in Montreal. He was a member of Ashlar Masonic Lodge, Toronto; of the St. James, Mount Royal Hunt, and Beaconsfield Golf Clubs, Montreal, and of Isleway and Red Rock Fishing Clubs. In 1904 he married Miss I. A. Kidner, of Toronto, who, with a son, aged 16, and a daughter, aged 10, survive him. His funeral at Montreal, Dec. 11, was attended by a large number of prominent railway officials and business men, the pallbearers being Brig.-Gen. Sir Alexander Bertram, of the John Bertram & Sons Co., machine tool manufacturers, etc.; W. W. Butler, President, Canadian Car & Foundry Co.; P. R. Diamond, Canadian Bronze, Ltd.; F. Gutelius; Robt. Hobson, President Steel Co. of Canada; Wm. Inglis; J. A. Kilpatrick, President, Dominion Wheel & Foundries, Ltd.; G. E. Smart, Mechanical Assistant, Car Department, to Vice President, Operating and Maintenance, Canadian National Rys.; V. G. R. Vickers, Vice President, The Holden Co.; and Thos. Watson, President, Canada Machinery Corporation.

Howard G. Kelley, formerly President, G.T.R., Montreal, has been retained as Consulting Railroad Advisor to the Joint New England Railroad Committee, which has been appointed to study and consider the railway situation in New England, in connection with amendments to the Interstate Commerce Act, and is making his headquarters in Boston, Mass. The study will include the physical condition, the operating problems, and the financial situation, and will occupy several months. Mrs. Kelley suffered severe cuts and bruises about her face, when a taxicab, in which she was riding on Sherbrooke St., Montreal, on Dec. 11, collided with an automobile truck.

W. B. Lanigan, Freight Traffic Manager, C.P.R., left Montreal, early in December, for Victoria, B.C., expecting to return about the middle of January.

R. W. Leonard, C.E., formerly Commissioner, National Transcontinental Ry., has been elected a director of Canadian Locomotive Co., Kingston, Ont., succeeding the late J. L. Whiting.

R. W. Long, Division Freight Agent, G.T.R., Toronto, addressed the Toronto Purchasing Agents' Association at its luncheon on Dec. 15, on "How freight rates are made."

Walter B. Mallon, whose appointment as Canadian Traffic Agent, Buffalo, Rochester & Pittsburgh Ry., Toronto, was announced in our last issue, was born at Rochester, N.Y., Oct. 9, 1894, and entered the company's service Jan. 15, 1917, since when he has been, to April 23, 1917, clerk, Lincoln Park, New York; and from April 23, 1917, to Oct. 1, 1922, rate clerk, Rochester, N.Y.

D. W. McDonald, Assistant Superintendent, Sydney & Louisburg Ry., Glace Bay, N.S., who had one of his legs badly mangled by a moving train at Victoria Jct., towards the end of November, is reported to be progressing satisfactorily.

C. W. Milestone, who died at Truro,

N.S., Dec. 3, aged 65, was born in the United States, of Yorkshire, Eng., parents, and came to Canada in 1882. He entered C.P.R. service in Aug., 1882, as train dispatcher at Winnipeg, and was appointed Chief Dispatcher, there in 1885, and Superintendent at Moose Jaw, Sask., in 1890, which position he held until he resigned from the service, Aug. 31, 1902. On leaving C.P.R. service, he entered the coal business in Saskatchewan, retired in 1921, and removed to Truro, N.S.

R. C. Morgan, Superintendent, Winnipeg Terminals, C.P.R., who has been on leave of absence for some months, to enable him to act as General Manager, Reid Newfoundland Co., at St. John's, Nfld., was, we were advised from there on Dec. 12, expecting to leave on Dec. 17 for either Port Arthur, Ont., or Winnipeg, to spend Christmas, and it had not been decided then whether he would return to St. John's or resume his former position at Winnipeg.

G. A. Mountain, Chief Engineer, Board of Railway Commissioners, Ottawa, has been elected President of the Civil Service Professional Institute there.

W. D. Robb, Vice President and General Manager, G.T.R., was entertained, on Dec. 10, by the City Council and Chamber of Commerce of Belleville, Ont., where he spent 13 years as Locomotive Foreman. The Mayor gave him a golden key to signify the freedom of the city, and at a dinner in the evening, the speakers, in addition to the Chamber of Commerce President, and Mr. Robb, included Sir Henry Thornton, President, and Major G. A. Bell, Vice President, Canadian National Rys., who stopped off en route from Toronto to the Maritime Provinces; Sir Joseph Flavelle, formerly Chairman of the Board of Directors, G.T.R.; W. C. Chisholm, K.C., General Solicitor, G.T.R.; and J. D. McMillan, Superintendent, Belleville Division, G.T.R.

Mrs. Stephen, widow of the late George Stephen, and mother of George Stephen, Assistant Freight Traffic Manager, C.P.R., Winnipeg, died at Outremont, Montreal, on Dec. 3.

Jas. Stewart, grain merchant, etc., Winnipeg, and also a Canadian National Rys. director, and President, Maple Leaf Milling Co., has been elected a Bank of Montreal director, succeeding the late R. B. Angus of the C.P.R. directorate.

Lady Thornton, wife of the President, Canadian National Rys., arrived at New York, Dec. 12, from England, by the s.s. Majestic, with her daughter, to join Sir Henry Thornton at Ottawa, and they left a few days later for the U.S., where Lady Thornton's mother is seriously ill.

C. S. Wainwright, whose appointment as General Agent, Freight Department, Canadian National Rys., Grand Trunk Pacific Ry., Grand Trunk Pacific Coast Steamship Co., and Grand Trunk Ry., Los Angeles, Cal., was announced in our last issue, was born at Montreal, and entered railway service in 1890, with the Montreal & Ottawa Ry., and served subsequently with the Assistant District Freight Agent, G.T.R., Toronto, National Despatch Fast Freight Line, Chicago, Ill.; and as rate clerk and chief clerk, G.T.R., Detroit, Mich., and Toledo, Ohio; Travelling Freight Agent, and Commercial Agent, Canadian National - Grand Trunk Rys., Los Angeles, Cal.

Canadian National Railways Construction, Betterments, Etc.

Dominion Atlantic Ry. Connection.—In connection with the Board of Railway Commissioners' recent order authorizing the Halifax & South Western Ry. to divert its line near mile 52.9, Middleton Subdivision, N.B., to connect with the Dominion Atlantic Ry., we were officially advised recently that the H. & S. W. Ry. connected with the D. A. Ry. at Middleton Jct., about 0.6 mile west of Middleton, with a Y connection; and that the H. & S. W. R. Port Wade Branch crossed the D. A. Ry. with a diamond crossing about 200 ft. east of Middleton Jct. switch, and connected to the west leg of the Y. The proposition approved by the Board of Railway Commissioners is to join the Port Wade Branch to the D. A. Ry. just west of the junction switch, and to eliminate the diamond crossing.

Chester Trestle Bridge.—Work on the new bridge spanning the brook leading from Mill Lake to the ocean near Chester station, mile 51, on the Halifax & South Western Ry., is reported to be proceeding. Concrete foundations have been put in. The work includes an arch over the public road leading to the lake property.

Moncton Diversion.—The cutoff between the Intercolonial main line and the St. John line at Moncton, N.B., has been completed, and has been put in operation for both passenger and freight traffic. The diversion starts from the main line about 3.5 miles west of Moncton, and connects with the line to St. John, about 2.5 miles out of Moncton.

Island Pond Yard Office.—A press report states that the new office building in the Island Pond yard, St. John, N.B., is completed. It is of frame, one story high, and is on the site of the one destroyed by fire in Jan., 1922.

Limoulo Locomotive House.—We are officially advised that work was started in Aug., 1922, on a 6-stall addition to the 15-stall locomotive house at Limoulo, Que. The addition is 100 ft. long, and is of brick construction. There is also under construction a 200-ton coaling plant, a 2-track ash track, the installing of a 150-ton Fairbanks-Morse track scale, and a new standpipe at Limoulo. The tracks in the yards are being extended and the shop and switching leads are being rearranged.

Cadorna-Chaudiere Signals.—We are officially advised that on account of the volume of traffic being moved over the Cadorna-Chaudiere section of the line in Quebec, it has been arranged to install automatic signal protection on the 11 miles of track. The installation will consist of 25 T2 D.C. signals, 74 model 12 and 13 D.C. relays, 12 tower indicators, electric locks, switch boxes and other accessories. The signal protection will be carried through existing mechanical interlockings, to which electric locking will be added. The signals will be controlled by the absolute permission scheme, in accordance with the railways' standard circuit arrangement. The installation will be made by the railways' signal and electrical department staff and will do away with the necessity of stopping trains, as at present, to take up and give back staffs under the present system of staff operation between Cadorna and Cap Rouge.

Montreal Station Staircase.—The C.N. Rys. are building a staircase from Dorchester St., Montreal, where the street

is carried across the tracks on a bridge, down to the platform level of the tunnel terminal station. Heretofore, passengers going to the station from Dorchester St., or north of that street, have had to get down to the Lagauchetiere St. level by a circuitous route, but the stairs will enable them to get to the station directly from the Dorchester St. level. The stairway is being built of steel throughout; rests of steel towers built on concrete piers, and will have a canopy roof of corrugated iron. There will be three landings, the top one being on the level of the Dorchester St. sidewalk.

Longlac-Nakina Cutoff.—The cutoff proposed to be built between the Canadian Northern Ry., at Longlac, Ont., and the National Transcontinental Ry. at Nakina, 29.4 miles, was described very fully in Canadian Railway and Marine World for December on pg. 623. Opposition to its construction developed in Quebec, and the Quebec Harbor Commissioners sent a protest to the Dominion Government, which is said to have been endorsed by some M.P.'s for that province. When returning from his Maritime Province trip recently, Sir Henry Thornton had a conference with the Harbor Commissioners in Quebec on Dec. 20, which resulted in their deciding to withdraw the protest and endorsing the proposal to build the connection. At the time of writing (Dec. 22), Canadian Railway and Marine World believes that it has been decided to proceed with construction, and that an order in council authorizing this is in process of going through at Ottawa. At the time of writing (Dec. 22), Canadian Railway and Marine World understands that the whole matter is before the Dominion Government, and the probability is that it will be decided to proceed with construction, in which case the tenders which were received up to Dec. 4, 1922, will doubtless be dealt with at an early date.

Regina Terminals.—The Board of Railway Commissioners gave a judgment recently providing for opening up Retalack St., across the Grand Trunk Pacific Ry. at Regina, Sask., the cost of construction and maintenance to be borne by the city. The Chief Commissioner pointed out that the G. T. P. Ry. had planned for the erection of terminal facilities, including a station and a hotel at the point, and a highway crossing so close thereto would have been an element of danger. The G. T. P. Ry. had become a part of the Canadian National Rys. system, and the whole terminal project had fallen through, changing the situation entirely. In all probability the particular track to be crossed would be nothing more than a siding. Under these circumstances, there was no reason why the highway should not be extended across the railway track at the city's expense.

Drumheller C.P.R. Connection.—The Board of Railway Commissioners approved recently of the C.N.R. completed plan, showing proposed C.P.R. connection and transfer track at Drumheller, Alta., and has ordered that, pending its building, the C.P.R. may use the North American Collieries' spur as a connection with the Canadian National Rys. up to and including Jan. 1, 1923. The whole of the work to be completed at the C.P.R.'s expense by Jan. 1, 1923.

Red Deer Extension.—The Board of Railway Commissioners has authorized

the opening for traffic of the line from the junction with the Brazeau subdivision, mile 60, to Red Deer, between miles 0 and 6.1, and also the west leg of the Y. at the junction with the Brazeau subdivision. The Brazeau line extends from Warden to Brazeau, 173.6 miles, and the line into Red Deer branches off just west of Burbank, mile 58.9.

Brazeau Subdivision Bridge.—Tenders were received to Dec. 13, for the excavation of a rock cut of approximately 19,000 cubic yards adjoining the bridge at mile 157.3, Brazeau Subdivision, Alberta District, and the placing of the material excavated to form a rock dyke across the adjacent ravine.

Jasper and Lucerne Division Points.—We were officially advised recently that no decision had been reached as to the consolidation of the divisional terminals at Jasper and Lucerne, at one of these places. Jasper and Lucerne are divisional points on the Grand Trunk Pacific Ry. and the Canadian Northern Ry., respectively, and are both located on the joint section between Lobstick Jct. and Red Pass Jct., between which a joint line was established during the war period, the rails released being shipped to France. The reason for the proposed consolidation of these two terminals into one is to reduce operating expenses and to facilitate operation. The facilities at both of these points consist of locomotive house, the usual locomotive facilities and tracks, station buildings and four or five yard tracks.

Kyax Bridge.—We are officially advised that tenders received recently for a bridge foundation and rock filling at the crossing of the Kyax River, mile 1,713.2, Skeena Subdivision, Grand Trunk Pacific Ry., near Prince Rupert, B.C., have not been acted upon. Additional information is being gathered, which will probably affect the present plans, and it is likely that tenders will be asked again next spring.

British Columbia Terminal Expenditures.—A recent Victoria, B.C., press report stated that the British Columbia Government had passed orders in council for the payment out of the terminals guaranteed bonds, of \$18,912.46, for work on the Canadian National Rys. terminals in Vancouver. The sums paid for work done on the several terminals out of the proceeds of the guaranteed bond issue to date are, therefore, now as follows: Vancouver, \$4,015,666; New Westminster, \$1,842,106; Port Mann, \$1,187,715; Steveston, \$290,183; Patricia Bay, \$206,687; Victoria, \$412,848; total, \$7,955,205. The report of the Minister of Railways for the year ended Dec. 31, 1921, recently laid before the Legislature, showed that the expenditures on the terminals at that date amounted to \$7,850,511, and that the total amount realized for the bonds amounted to \$9,043,843.12.

Michigan Central Rd. Absorption.—A St. Thomas, Ont., press dispatch of Nov. 20, said it had been announced at the C.M.R. offices there that the M.C.R., which is a subsidiary of the New York Central Lines, would be absorbed by the latter on Jan. 1, and that its name would disappear. Canadian Railway and Marine World is officially advised that the statement quoted was not made by any M.C.R. official, and that nothing is known of the matter at the M.C.R. general offices.

American Railway Association Mechanical Division Meeting and Committees.

The American Railway Association's Mechanical Division General Committee has decided not to hold the usual convention in 1923, but instead to have merely a business meeting lasting only two or three days. If this decision is adhered to, it will mean that the large meeting at Atlantic City, as held in preceding years, with the accompanying display of equipment and devices, will not take place. It is probable that the business meeting proposed will be held in Chicago or some place other than Atlantic City. The reason assigned for this action is that owing to the shopmen's strike, and the large amount of business the railways have been handling, the committee members have not had time to devote to the preparation of reports, and it is considered that the time remaining is too short to hold meetings and prepare reports in time for the usual regular convention.

The Division's officers are: Chairman, J. Coleman, Assistant to General Superintendent, Motive Power and Car Department, G.T.R., Montreal; Vice Chairman, J. Purcell, Assistant to Vice President, Atchison, Topeka & Santa Fe Ry., Chicago, Ill.; Secretary, V. R. Hawthorne, Chicago, Ill.

In addition to the general and nominating committees, the following standing committees were appointed, and were given alphabetical designation as well as names: A, Arbitration; A-1, Prices for labor and materials; B, Autogenous and electric welding; C, Car construction; C-1, Brakes and brake equipment; C-2, Couplers and draft gears; D, Design of shops and locomotive terminals; E, Electric rolling stock; F, Loading rules; G, Locomotive and car lighting; H, Locomotive design and construction; I, Safety appliances; J, Specifications and tests for materials; K, Tank cars; L, Wheels. Those committees having a number after the designating letter are to be considered as part of the committee whose letter they bear, and the chairmen of such committees will be expected to attend meetings of the main committee.

The Division's general committee has appointed the general, nominating and

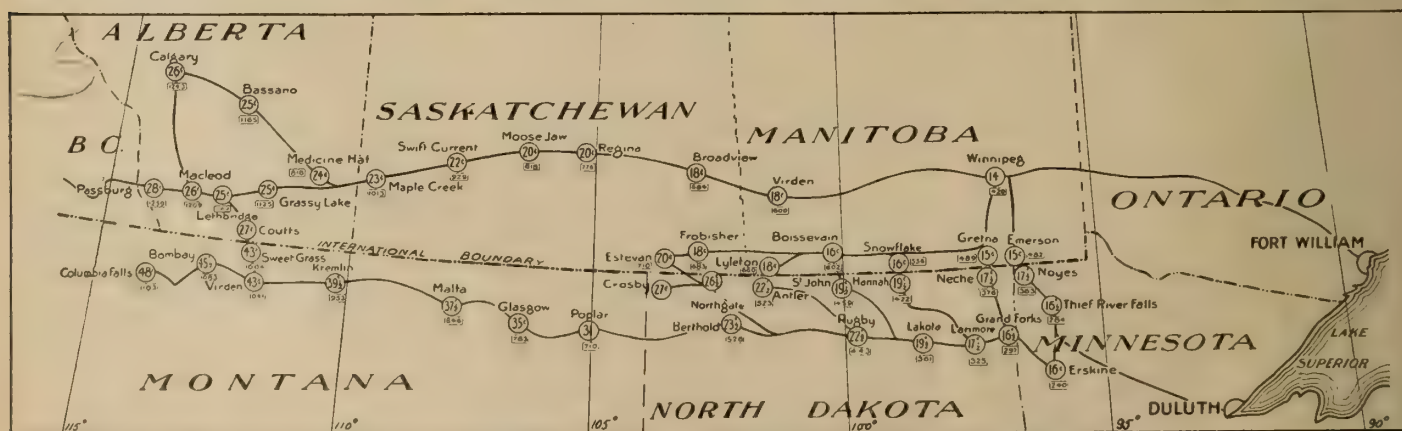
standing committees to serve until June, 1923. It reviewed the list of committees and their personnel, and in line with a suggestion by the Association's executive committee, that a careful survey be made so as to adjust the committees along the most efficient and economical lines, several committees were consolidated, others eliminated, and the personnel of others reduced. The committees on brake shoe and brake beam equipment, and trainbrake and signal equipment, were consolidated as the committee on brakes and brake equipment. The committees on car repair shop layouts, locomotive terminals design and operation, modernization of stationary boiler plants, and scheduling of equipment through repair shops, were consolidated as the committee on design of shops and locomotive terminals. The committees on locomotive headlights and classification lamps, and train lighting and equipment were consolidated as the committee on locomotive and car lighting. The committees on locomotive construction, mechanical stokers, feed water heaters for locomotives, lateral motion on locomotives, and design and maintenance of locomotive boilers, were consolidated as the committee on locomotive design and construction.

Canadian railways officials, or officials of U.S. railways having Canadian affiliations, who have been placed on the various committees, are as follows: C. E. Brooks, Mechanical Assistant, Locomotive Department, to Vice President, Operation and Maintenance, Canadian National Rys., Toronto, on locomotive design and construction committee; H. G. Burnham, Engineer of Tests, Northern Pacific Ry., St. Paul, Minn., on specifications and tests for materials committee; J. Coleman, Assistant to General Superintendent, Motive Power and Car Department, G.T.R., Montreal, on general and arbitration committees; H. M. Curry, General Mechanical Superintendent, Northern Pacific Ry., St. Paul, Minn., on locomotive design and construction committee; G. Fisher, Master Car Builder, G.T.R., London, Ont., on prices for labor and materials commit-

tee; W. H. Flynn, Superintendent Motive Power, Michigan Central Rd., Detroit, Mich., on locomotive and car lighting committee; W. J. Hatch, General Air Brake Inspector, C.P.R., Montreal, on brakes and brake equipment committee; E. J. Robertson, Superintendent Car Department, Minneapolis, St. Paul & Sault Ste. Marie Ry., Minneapolis, Minn., on loading rules committee; W. H. Wilson, Assistant to Vice President, Northern Pacific Ry., St. Paul, Minn., on car construction committee; W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal, on general and car construction committees; L. K. Silcox, General Superintendent, Motive Power, Chicago, Milwaukee & St. Paul Ry., Chicago, Ill., formerly of Canadian Northern Ry., Mechanical Department, Toronto, on general, electric rolling stock, and wheels committees.

Railway Taxation in Manitoba.—The C.P.R. Co. and the Canadian National Rys. pay taxes on their lines and other property in Manitoba to the Manitoba Government, under agreements entered into in 1917, the C.P.R. paying \$225,000 and the Canadian National \$85,000 a year. These agreements have expired, and it is reported that negotiations are in progress between the railways and the Provincial Treasurer to settle terms for new agreements. Under the act fixing taxation on railways the government is entitled to levy a tax of 3% on the gross earnings of each railway in the province, a subsection providing that on the Canadian Northern Ry. the tax is to be 2% during the life of the bonds of the line guaranteed by the province. The amount of the tax paid prior to 1917 was \$125,000 by the C.P.R. and \$65,000 by the Canadian National Rys. The railways are reported to be asking for a reduction from the amounts now paid.

The C.P.R. is stated in a Winnipeg press dispatch to have marketed 84,959,194 bush. of grain on its Western Lines from Sept. 1 to Oct. 14. During the same period, 44,817 cars were shipped equivalent to 65,219,498 bush.



A Comparison of Wheat Rates in Canada and in United States Adjoining Territories.

The map given above shows the railway charge, in cents per 100 lb., for hauling wheat from various Canadian and United States points to the head of Lake Superior, viz., Port Arthur and Fort William in Canada, and Duluth in the United States. In most cases the

mileage is shown beside the rate. In every instance the Canadian rate is much more favorable than the U.S. one. The points chosen are thoroughly representative. Any other selection would yield just as favorable a comparison for Canada. More of the U.S. wheat area lies

east than of the Canadian wheat area, and the Canadian farmer has often a much longer haul. The Canadian railways have done their share towards offsetting this natural disadvantage, as is shown clearly by the figures at different points on the map.

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Can Political Interference with the Canadian National Rail- ways' Management Be Prevented?

On every possible occasion since Sir Henry Thornton was appointed President of the Canadian National Rys., he has emphasized the fact that, before he accepted the position, Prime Minister King assured him that there would be no political interference with the management. He announced this in an interview he gave the press on the day of his appointment in Ottawa; in New York when en route to England; at various farewell functions at which he spoke in England; at the Montreal Board of Trade's dinner to him on Dec. 5, a full report of his speech at which is given farther on in this issue; and practically at every other place at which he has spoken, including that political hotbed, the Maritime Provinces, during his recent trip. And he has given politicians clearly to understand that while, like anyone else, they will be listened to courteously, he does not intend to be influenced by them. Canadian Railway and Marine World thinks he has acted wisely in doing so, and that he cannot reiterate too often the promise given him by the Prime Minister, and his evident intention of insisting on its fulfilment. Ordinarily, such an undertaking by a prime minister would be considered conclusive, but Sir Henry will do well to be on his guard, and to see that Mr. Mackenzie King does not deviate from his assurance. Unfortunately, the Prime Minister's record in this respect is very unsatisfactory, and it is important that Sir Henry should know of something that occurred no longer ago than in July last, when a member of the Manitoba Legislature telegraphed the Prime Minister in reference to President D. B. Hanna's decision that C.N.R. officials or employees, who became candidates for the Dominion Parliament, or a provincial legislature, should not remain in the railways' service. Mr. King replied, in part, as follows: "The control of the Canadian National Rys. is vested in a board of directors which is held responsible by the Government, as representing the people, for the management and operation of the roads. It is a fundamental principle of Government policy not to interfere, or to permit interference, with the board of directors in the discharge of its duties. The Government is therefore not in a position to say to the board of directors what, in this or in any matter, should or should not be done."

Had Mr. King stopped at that, he would have taken a perfectly proper position, but the rest of his telegram was as follows: "On the other hand, the Government does not hesitate to make known the attitude which, in its opinion, should be adopted by the board of directors of the Government railways with respect to the right of railroad workers to offer themselves for political office. As regards workers on the Government railroads, the Government would hope and expect that the same attitude would be taken in the matter of their political rights as is taken towards their employees by the privately owned railroads and in particular by the C.P.R. Co. which operates the other important railway system in the Dominion, and is the only real competitor of the Canadian National Rys. I regret that the Minister of Railways is absent from Ottawa today, which deprives me of an opportunity of immediate conference with him. I am sending

copies of your communication and this reply to the Deputy Minister of Railways with the request that its contents be communicated immediately to the Chairman of the Board of Directors of the Canadian National Rys."

Outside of the fact that Mr. King's method of dealing with the matter was most discourteous, as he at once, undoubtedly for political effect, made his telegram public, so that Mr. Hanna and other officials saw it first in the press, and before it was communicated to them officially, the position he took was a most hypocritical and unjustifiable one. First he declared that it was "a fundamental principle of Government policy not to interfere, or to permit interference, with the board of directors in the discharge of its duties," and then, in the very next sentence, he said that the Government did "not hesitate to make known the attitude which, in its opinion, should be adopted by the board of directors." That was a most glaring case of political interference, and the fact that Mr. Hanna paid no attention to the suggestion was probably one of the reasons why his services were not retained. We hope, for Sir Henry Thornton's sake, and for the Canadian National Rys.' sake, that Mr. King will not repeat the performance.

Canadian Railway and Marine World, in referring, in its Nov., 1922, issue, to attempted political interference with the C.N.R. management, absolved the respective Ministers of Railways and Canals who were in office since a government appointed board was created, viz., Dr. Reid, the late Mr. J. A. Stewart, and the present Minister, Mr. Kennedy, and said that it believed they had played the game fairly, but that some other members of the House of Commons, both Conservative and Liberal, did not. We mentioned a few of the things that we knew had occurred, including a Conservative minister's attempted interference with appointments on the Intercolonial Ry., and with Canadian Government Merchant Marine operations; a Liberal member's petty action in attempting to secure the dismissal of section laborers in Pictou County, N.S., who had voted against him; and another Liberal member's attempt to have some of his supporters appointed as gatekeepers in Cape Breton. We repeat these cases to show to what contemptible depths some politicians are prepared to go. The leopard cannot change his spots. What has been attempted in the past will no doubt be attempted again in the future, unless members of Parliament realize, as they should, that when Sir Henry Thornton put up his "No political interference" sign, he meant it to be observed, as we have no doubt whatever that he does. As a matter of fact, attempts to interfere with the management through the Government have already been made. As stated elsewhere in this issue, the Quebec Harbor Commissioners tried to influence the Government to prevent the building of the much needed connection between the Canadian Northern Ry. at Longlac, Ont., and the National Transcontinental Ry. at Nakina, which would greatly improve the system's efficiency, and this was backed up by a number of Quebec M.P.'s; and there are evident signs that attempts are being made to influence appointments, particularly in regard to the chief position at Moncton, N.B.,

should it be decided to establish a regional headquarters there, as appears likely will be the case.

Sir Henry Thornton accepted his position on a solemn assurance that he would not be politically interfered with. He has a three years contract, and Canadian Railway and Marine World believes that he has the courage and determination to keep the politicians in their proper places. In doing so, he should be

heartily supported by the people as a whole, and by the press, which should expose and condemn every attempt at political interference which may come to its notice. Canadian Railway and Marine World invites any of its readers, who learn of such attempts, to send it the facts, and assures them that their communications will, so far as their names, etc., are concerned, be treated as absolutely confidential.

Railway Freight Traffic and Equipment.

The usual seasonal increase in railway freight traffic which takes place every autumn was emphasized more than usual in both Canada and the U.S. in 1922, due to the extraordinarily large agricultural production in both countries, and to the greatly improved tone in general business and trade conditions. An examination into the traffic handled by the railways, and the adequacy or inadequacy of the equipment with which they handled it, will be of interest and value as indicating the future traffic trend and the extent of the requirement for enlarged facilities.

Unfortunately, the Railway Association of Canada does not publish a statement of the number of cars loaded with revenue freight, and immediate information concerning traffic conditions, necessarily of a general nature, must be derived from an acquaintance with conditions in the railway industry, while more specific information cannot be obtained till about two months after the termination of any period under review, from statistics published by the Dominion Government. The Railway Association, however, issues a statement of car surpluses and shortages which is of value in showing how railways are meeting the traffic demands. The Association reported that on Sept. 1, 1922, there was a surplus of 15,871 freight cars on Canadian lines. On Sept. 15, this had been reduced to 3,868. On Oct. 1, the surplus had been replaced by a shortage of 7,667 cars; on Oct. 15, the shortage was 7,914; on Nov. 1 it was 7,967; by Nov. 15 it was 10,193, and on Dec. 1 it had been reduced to 6,923. Latest reports on the situation show that while there has been in the immediate past a good deal of shortage in various localities, in the main the demand for cars is now being met, and it is probable that with the termination of the most intensive portion of the crop movement, the railways are now able to adequately cope with the demand for freight transportation.

In the U.S. there was no car shortage on Sept. 2. On Sept. 9 there was a shortage of 15,000 cars. At the end of the following week, there were demands for 62,937 more freight cars than the railways could meet. The shortage increased rapidly, until on Oct. 14 there were 156,309 requisitions for cars that could not be filled. The figure remained about constant till Nov. 4, when the shortage was reported as 175,500, and at Nov. 11 it was 174,498. Some decrease took place during the following week, and at Nov. 18 the shortage was 158,236. Further improvement in the following week brought the figure down to 152,565, and since then conditions have further improved. The shortage is accounted for by the large car loading which the U.S. lines experienced. From the beginning of the week ended Sept. 2 to the end of the week ended Nov. 25, 1922, there were 12,515,136 cars loaded

with revenue freight on U.S. lines, compared with 10,995,450 in the same period of 1921, and 12,392,911 in the same period in 1920. These large car shortages have always characterized periods of good business in the U.S., since the railway business became really established in that country, and although the shopmen's strike prevented U.S. lines from getting their equipment into as good condition to meet the autumn "rush" as they otherwise would have done, there is no doubt that a large car shortage would have been experienced even if there had been no strike.

Examination into the causes of the car shortage in Canada show that it was not due at all to an unduly large proportion of the freight equipment being in bad order. It has been ruled by the American Railway Association that if a railway can keep 93% of its freight cars in good operating condition, it is doing about all that can be expected in this direction, but the Canadian railways have done better than this standard requires, as is evidenced by the fact that on Oct. 1 the percentage of bad order cars on Canadian lines was 7.03, on Nov. 1 but 6.1, and on Dec. 1 but 5.2. A contributing reason for the shortage of cars on Canadian lines has been the much larger number of Canadian cars on U.S. lines than of U.S. cars on Canadian lines, but, as was pointed out in an analysis of this matter in Canadian Railway and Marine World for Dec., 1922, pg. 620, this is a natural condition, due to traffic currents and the nature of commodities shipped, and therefore a difficult condition to change. It would seem, therefore, that the greatest contributing cause of the car shortage which has been experienced in Canada has been insufficient equipment to meet the country's transportation needs. No shipper of freight has to be told about the loss and inconvenience which car shortage causes. When cars become scarce, freight rates immediately become a second consideration, and the ability to get the cars needed becomes of prime importance. A lack of transportation quickly clogs the industrial machine, and places a great barrier in the way of carrying on efficient and profitable commercial operations.

U.S. railways, during the past year, have placed orders for freight equipment which are larger than have been placed for years. Presumably, their officers recognize that the great industrial activity which has been looked for since the war's termination is about to begin in real earnest, and they, as a matter of good business, are preparing to handle the heavy traffic which will inevitably accompany it. If our hopes and expectations concerning Canada's commercial and industrial future are to be realized in appreciable degree, and if Canada's population increases in anything like the way in which the ambitious plans for immigration now being discussed would

lead one to believe it is going to increase, there is no doubt that a vastly increased freight traffic will have to be handled by the Canadian railways, for the reason that freight traffic increases proportionately much faster than population. It is reasonable to believe that Canadian railways, like U.S. railways, should prepare to handle the heavy traffic which they can logically expect in the near future, and the enquiries for equipment put out by the Canadian National Rys., as stated elsewhere in this issue, show that the C.N.R. management recognizes the correctness of that proposition.

"A Serious Charge Against a Canadian National Railways Director."

Canadian Railway and Marine World for Dec., 1922, referred to a charge made by Sir Henry Drayton, M.P., at Carleton Place, Ont., during the Lanark County election, to the effect that F. G. Dawson, of Prince Rupert, B.C., who was appointed a member of the Canadian National Rys.' directorate, by the Dominion Government, was a bootlegger on a large scale, and was spoken of by members of his own party as "the king of the bootleggers," and we quoted and endorsed the demand made by the Renfrew, Ont., Mercury, a leading Liberal paper, that, if the charge was true, Mr. Dawson's resignation should be demanded. Mr. Dawson is reported, in a press dispatch, to have made the following statement at Vancouver on Dec. 11:—

"Charges reported as being made by Sir Henry Drayton that I am a bootlegger are absolutely unfounded and unwarranted, and if definite statements were made they would in my opinion be libellous. My business is wholesale grocery, and when the British Columbia Moderation Act came into force my firm were appointed distributing agents in Northern British Columbia for a Victoria brewery, to distribute beer in that territory to the Government liquor stores. Hon. H. H. Stevens, M.P. for Vancouver, made a charge in a public speech some time ago that upon an inspection made we were several hundred barrels of beer short, which evidently had been disposed of illegally. I demanded, on behalf of my firm, an investigation. The B. C. Legislature had the matter thoroughly investigated by the Chief Inspector and by the public accounts committee, who absolutely exonerated me and my firm, there being absolutely no evidence against us. This report was tabled in the Legislature. This charge was evidently made for purely political purposes in an endeavor to discredit me in the eyes of the public, in the hope that my appointment to the C.N.R. board would reflect upon the Mackenzie King Government."

Canadian Railway and Marine World, in all fairness, gives as much prominence to Mr. Dawson's denial as it did to Sir Henry Drayton's charge, and pauses to remark that Sir Henry would now appear to have the floor.

Unreliable Press Reports.—St. Thomas, Ont., is establishing an undeniable reputation for unreliable press reports, that it would be better to be without. A number of press dispatches from there recently, dealing with Canadian Pacific, Michigan Central and Pere Marquette Ry. matters, have, on enquiry from official sources, proved to be either incorrect or greatly exaggerated.

Political Attacks on the Canadian National Railways' Managements.

Very soon after D. B. Hanna and his colleagues were appointed C.N.R. directors, by the Borden Government, the then opposition members and the opposition press commenced to attack them, the attacks increasing in intensity as the last general elections approached. Mr. Mackenzie King was one of the most bitter, and was joined by others members, and would-be members, in absolutely unfounded and contemptible attacks on the directors. One of those who joined in the attacks was the present Minister of Railways, Mr. Kennedy, but it is to his credit that after he became a minister, and saw the work that was being done, and how it was being handled, he changed his views materially. Now that Mr. Hanna and his colleagues have been got rid of, and a new board, headed by Sir Henry Thornton, has been appointed, Mr. Meighen, Sir Henry Drayton and other leading Conservatives are in the firing line, and are criticising such things as the President's salary, the date from which it started, the fact that on his brief return to England to close up his affairs there he spoke at several farewell functions which were tendered him, and similarly petty things. The Prime Minister and his party press are holding up their stained hands in hypocritical horror, but it does not lie with them to complain, as the Conservatives today are simply adopting the tactics pursued by the Liberals when in opposition, though so far in a much milder manner. It is lamentable that public men, and the daily press, with very few notable exceptions, cannot deal with the Canadian National Rys. question from a non-partisan standpoint.

Canadian Railway and Marine World was in favor of Mr. Hanna's services being retained, and did not hesitate to say so, but the Government decided otherwise. Sir Henry Thornton is in no way responsible for the circumstances which led up to his appointment, it should be recognized that he is on the job to stay, and he should be heartily supported in what is undoubtedly the most difficult task he has ever undertaken. Notwithstanding the unjustifiable way in which the Liberal politicians and press treated Mr. Hanna and his colleagues, we should like to see the Conservative politicians and press take a higher stand, and not sink to the level that Mr. Mackenzie King and his followers did.

Economy from Locomotive Superheating.

The Railway Gazette, London, Eng., in discussing the matter of economy in fuel consumption derived from locomotive superheating, draws attention to a case on a leading British railway, in which a shunting tank locomotive, which was superheated, showed a saving of only 3.7% of the fuel consumed over that consumed by a non-superheated locomotive of the same class, and to other cases in which locomotives doing 15 or 20 mile continuous runs showed a fuel consumption economy of 15.8, and even 18.7%, due to superheating. It is pointed out that the value of superheat is highest where locomotives are engaged in continuous runs, because if they have to stand idle a great deal, there is naturally bound to be a great loss in superheat, and a corresponding de-

crease in fuel economy. This is a feature of the superheating question which, to our knowledge, has not received much attention or discussion, but from the results of tests as quoted above, and from consideration of the conditions in practice, it appears evident that, while superheating will make any locomotive a more efficient and economical machine, the best results may be expected when the locomotives are operated on long runs with few stops. A further argument for reducing to a minimum the number of stops by trains is thus introduced, as in addition to fuel losses caused by accelerating, a further loss of economy is caused through the drop in superheat during the period of the locomotive's inactivity.

Sir Henry Thornton at Work.

Sir Henry Thornton has displayed unbending energy in the month that has elapsed since he arrived in Ottawa to take up his work as President of the Canadian National Rys. In addition to numerous conferences with other officers and officials, at Ottawa, and at the Canadian National and Grand Trunk headquarters, he has inspected a very large portion of the eastern lines, has met a great number of the public, and has addressed a much larger number. His first speech, at the Montreal Board of Trade's dinner, was a notable one, made before a record audience, the attendance at the Empire Club's luncheon in Toronto being but little behind it, and he was heard by a still larger number at Amherst, N.S., and by smaller gatherings at many Maritime Provinces' points and in Quebec City.

It has been suggested that it might have been better for Sir Henry to have delayed speaking until he had some definite announcements to make, but he has, and Canadian Railway and Marine World thinks, wisely, taken every opportunity of meeting the public, and telling them of the general principles on which he will proceed, and particularly of his determination that there shall be no political interference. He should certainly be pleased with the enthusiasm with which he has been received, and with the impression he has made.

Canadian National Railways' Headquarters.

The question of where the headquarters of the finally co-ordinated Canadian National Rys. System should be, is being treated in altogether too flippant a manner by a number of places which have no qualifications for it, and are simply making themselves ridiculous in putting forward their claims, and in taking up time in dealing with them. Halifax, Quebec, Belleville, Hamilton, and even New Westminster, have advanced claims. It is almost unnecessary to say that there are only three places that should, from a business standpoint, be considered, and so as to be absolutely impartial, we will state them in alphabetical order, which is also their geographical order from east to west, viz., Montreal, Ottawa and Toronto.

Said the President to the President.

The task allotted E. W. Beatty, K.C., President, Canadian Pacific Ry., of proposing Sir Henry Thornton's health, at the Montreal Board of Trade's dinner, was in several ways a difficult one, but he performed it with consummate skill,

and made a distinct impression at the start, when he spoke as representing the largest taxpayer in Canada, which has to contribute more than any other concern to any deficits which the Canadian National may have. His closing expression of hope that Sir Henry may be permitted to run the National System just as if he owned it himself, is undoubtedly shared by the people generally.

Make the Facts Public.

Mr. Meighen, the Opposition leader in the House of Commons, is reported to have said, in speaking at Hamilton, Ont., on Nov. 14:—"I have evidence on me that there has been political interference already in the management of the Canadian National Rys." Canadian Railway and Marine World suggests that Mr. Meighen take the public into his confidence fully, and tell them exactly what the interference he refers to consists of. Everything in the way of political interference should be exposed thoroughly, as quickly as possible, so as to deter repetitions.

Index to Canadian Railway and Marine World for 1922.

For a number of years, Canadian Railway and Marine World has published, early in each year, a very complete index to the contents of the previous year's issues, which we know has been very much appreciated by the large number of subscribers who bind the paper for reference. Owing to what we consider an arbitrary ruling of the Post Office Department, we have not been allowed to simply enclose the index as a supplement with the regular issue of the paper got out at the same time, but have had to bind it in as part of the issue, making it somewhat difficult to detach for binding with the previous year's volume.

We have therefore decided that the index for 1922, which will be published at an early date, will not be bound in as heretofore, but will be issued and mailed separately, and will only be sent to those who apply for it. Subscribers who wish to receive copies are therefore requested to advise us as early as possible, so that we may know the number that it will be necessary to print.

Rail Sawing on the C.P.R.

The C.P.R. has three rail sawing machines in operation, each having a capacity of about one track mile of rail per day of 10 hours, i.e., the machine will saw off both ends of each rail, and drill new bolt holes. The first machine to be put in operation was a semi-portable one, bought in 1902, and which has been stationed at Winnipeg ever since. The majority of rails treated by this machine have been used for branch line construction in the west. The second machine bought was installed at Angus shops, Montreal, in 1906. It is stationary, and is used principally in connection with frog shop work, to saw rails required for the manufacture of switches, frogs, and diamond crossings. In addition to this, it has sawn and redrilled a considerable mileage of relay rail for Eastern Lines branches. The third machine is portable and was built at Angus shops, Montreal, in 1907. It is mounted on a flat car and is moved from point to point as required.

Transcontinental Freight Rates Decision by Interstate Commerce Commission.

The Interstate Commerce Commission rendered a decision recently on an application filed in Aug., 1921, in which the important and far-reaching principles of the long and short haul, and water competition in its effect on rail rates, were involved. The case arose out of the application by U.S. railways having their western termini on the Pacific coast, for permission to establish lower rates to and from their Pacific coast terminals, than are in effect to and from intermediate points, on traffic having origin or destination in territory east of the Rocky Mountains, so that they would have "equality of opportunity" in competing with ships carrying similar traffic from Atlantic or Gulf of Mexico ports to Pacific coast ports via the Panama Canal. The application was, in the main, denied.

The railways concerned, including the Southern Pacific and all lines operating between Chicago, or the Missouri River, and the Pacific coast, stated in support of their application that the proposed lower rates were compelled by water competition. They contended that in no case were the proposed rates as low as water rates, but were designed to be only so much higher as to afford the railways equality of opportunity in competition with water lines, considering the additional cost of shipping by water, by reason of marine insurance, port charges, etc., and the longer time required when shipping by water. They also contended that, the proposed lower rates being compelled by water competition, the higher rates to intermediate territory would not be discriminatory or unreasonable in themselves. They further contended that their application merited relief from the long and short haul principle, as defined by statute, by reason of the water competition being actual and compelling. In connection with their application, they proposed to blanket the all-rail rates from the Atlantic seaboard to the Missouri River, on westbound movement to Pacific coast terminals.

The intermediate territory, in which the railways wished to charge higher rates than for the longer haul to and from the Pacific coast, includes such points as Spokane, Wash., Reno, Nevada, Salt Lake City, Utah, and Phoenix, Arizona, and at the hearings representatives of the cities in this territory vigorously protested against the railways' application. They were unable to see the justice of a rate system wherein they would be required to pay higher rates than charged cities on the Pacific coast, particularly when traffic westbound for the coast cities passed through the intermediate territory. They contended that if the rates as proposed by the railways for the Pacific coast cities were to be considered by the Commission as fair and just, the higher rates which they would have to pay on the shorter haul would be exorbitant. The Pacific coast interests supported the application, contending that the coast cities' advantageous geographical location would be only properly reflected in the establishment of terminal rates which would be on a competitive basis with the rates charged for water carriage via the Panama Canal.

Steamship interests having ships in the trade between the Atlantic and Gulf of Mexico ports and the Pacific ports

opposed the application, urging that shipowners must depend for their economic existence on the comparatively small amount of business originating at, and destined to, points on or near the coasts, while the rail lines have a monopoly of the business on the rest of the continent. They contended that if the reduced rates to and from the Pacific coast were granted the rail lines, the result would be a loss of a large portion of their traffic to the rail lines, and that the ultimate result would be a further reduction in water rates, made so as to hold the traffic to the ships, thus leaving both the rail and water lines in a worse position than ever. A good deal of the traffic going west by ship originates a considerable distance inland from the Atlantic and Gulf coasts, and eastern rail lines represented pointed out that if the reduced rates on traffic to the Pacific coast were granted, and if this resulted in a lot of traffic now going west by ship being diverted to the all-rail route, they would lose their revenue on local hauls from point of origin to the Atlantic coast and would obtain in place thereof only a division of the low rate to the Pacific coast terminal. Generally, however, the eastern rail carriers were ready to join with the western lines in making the proposed rate reductions effective.

Examination into the history of the case discloses that, until March 15, 1918, lower rates to the Pacific coast than to intermediate territory were allowed. On that date, due to the prevalence of high water rates, occasioned by the scarcity of shipping, and the removal of ships formerly engaged in the trade between Atlantic and Pacific ports to the trans-Atlantic service, water competition thereby ceasing to be a compelling force, the Commission decided that lower rates to Pacific coast cities than to points in intermediate territory unduly preferred the coast cities, and denied further relief from the operation of the long and short haul clause. Following this, intermediate territory points applied to the Commission to have their rates made lower than the Pacific coast rates, but the Commission, pointing out that water competition was likely to be resumed in a short time, dismissed the application. A few months later, in Aug., 1921, the railways' application to reinstate lower rates to the coast terminals was filed.

The Commission, in its decision, calls attention to the effect of the sections of the Transportation Act influencing the long and short haul principle, and particularly to sec. 500, which sets forth the policy of Congress as being to "foster and preserve in full vigor both rail and water transportation." The law demanding that the rate charged on a longer, as opposed to a shorter, haul should be reasonably compensatory, the Commission has evidently interpreted this as preventing it from following its former liberal policy in granting relief from the long and short haul rule, for the reason that it considered that the applicant railways had not demonstrated to its satisfaction that large revenue losses would not result from the proposed lower rates. The Commission was further of the opinion that the region west of Pittsburgh would be accorded a preferential rate structure by the railways' proposals to blanket the rates from Pittsburgh to the Pacific, from all

points of origin between the Atlantic and the Missouri River, while keeping in effect rates from eastern origins in the same territory to intermountain destinations graded somewhat in accordance with the length of hauls. As a result of the Commission's findings, the general application for lower rates to and from Pacific coast points was denied, although some concessions were made to the railways, one being the allowance of the proposed rate on crude sulphur, and another being the approval of rates proposed for the Southern Pacific's combined rail and water line from California terminal points to the Atlantic seaboard via Galveston.

Container Tank Car for Milk Traffic.

Canadian Railway and Marine World for Jan. 1922, gave on p. 18, details of the container car system of handling l.c.l. freight, as introduced on the New York Central Lines. The N.Y.C. has now carried the container car idea a step further, by applying the principle to milk transportation. At the recent New York State fair, the railway showed a container car fitted with 9 compartments, into each of which fits a large glass-lined tank, effectually insulated by cork. The tanks have double walls, and in principle resemble large thermos bottles. The capacity of each tank is 645 gall. The N.Y.C. management hopes to perfect this plan of transporting milk, so that any milk station shipping 645 or more gallons daily can avail itself of container car service and thereby save large sums in freight charges, and in depreciation of the ordinary milk cans now used. The expectation is that the container system will save much time in loading and unloading, and it is felt that the milk can be handled in a much more sanitary way than at present. The saving in ice is also expected to be material.

Toronto Transportation Club. — The following officers have been elected: President, G. W. Vaux, General Agent, Union Pacific Ry.; Vice President, W. S. Campbell, Manager, Transportation Department, Canadian General Electric Co.; Secretary, W. J. Hotrum, Chief Clerk, Local Freight Office, G.T.R.; Treasurer, M. MacDonald, Assistant Superintendent of Weighing, G.T.R.; chairman, membership committee, W. Fulton, District Passenger Agent, C.P.R.; chairman, entertainment committee, F. R. Caldwell, Manager, Cluett, Peabody Co.; chairman, publicity committee, Chas. Vail, General Manager, Vail & Sheppard; chairman reception committee, T. Symington, Superintendent, Canadian Cartage & Storage Co.; chairman, sick committee, G. S. Donaldson, General Agent, Chicago & North Western Ry. It is the intention to have monthly luncheons and semi-monthly dinners.

Vancouver Pier, C.P.R. — Canadian Railway and Marine World was officially advised, recently, that a contract for building the C.P.R.'s additional ocean pier at Vancouver, to be called Pier B.C., had been given the Sydney E. Junkins Co., of Winnipeg and Vancouver, and that work would be started as soon as possible.

Montreal Board of Trade's Dinner to Sir Henry Thornton.

Speeches by the Canadian Pacific and the Canadian National Railways' Presidents.

The dinner given by the Montreal Board of Trade, in Montreal, on Dec. 5, to Sir Henry Thornton, President, Canadian National Rys., was a most successful and enthusiastic function, over 650 being present, great interest being shown to hear his first public utterance in Canada, and those present represented the leading railway, banking, commercial, industrial and political interests. The speakers were President W. M. Birks, of the Montreal Board of Trade, who occupied the chair; Sir Joseph Flavell, ex-Chairman, Board of Directors, G.T.R., who proposed the toast of Our Country, in a very practical and interesting speech dealing with the railway situation generally, and the country's material development; Dean Gordon Laing, of McGill University Arts Faculty, who responded; E. W. Beatty, K.C., President, C.P.R., who proposed the health of Sir Henry Thornton, and the latter, who responded.

The C.P.R. President's Speech.

E. W. Beatty, K.C., President, C.P.R., said:—When your president was good enough to suggest for me the honor of proposing the health of Sir Henry Thornton, I not unnecessarily concluded that this pleasure was being afforded me because, as representing probably the largest taxpayers in Canada, I represented the largest stockholders in the system over which Sir Henry will preside. Large stockholders have a special interest in the successful administration of their property and in the personality of its executive head. I presume it is not only customary, but necessary, to propose the health of the guest of honor, but it does seem to savor of irony to suggest health to Sir Henry after one fleeting glance at his robust physique. It is equally customary, when addressing a toast to the guest of the evening, to inform you of his outstanding characteristics and indulge in flattering references, usually untrue, or at least inaccurate. It would be presumptuous for me to tell you of Sir Henry and his achievements. I felt, and still feel, that with what the chairman does not know of him and the free and full information he would give you in consequence of his ignorance, and what Sir Henry himself would not tell you, though well equipped to do so, you would probably receive all the misinformation you were entitled to obtain in one evening.

In confining what I have to say to general observations pertaining to Sir Henry's work, without confusing it with opinions or theories in respect of policies, I feel that I will not be in danger of detracting from the sociability and complete amity of this occasion, an occasion which is intended to express on behalf of the Board of Trade its utmost goodwill towards Sir Henry himself, its belief in the principles of private ownership of railways and its profound, if latent, conviction that the City of Montreal offers advantages for head or other offices not enjoyed by any other city in Canada. I must admit that the stubbornness of the members of the Board of Trade on the question of public ownership, and their confidence in the future of their own city as a railway center, might lend an atmosphere of discourtesy

and self-interest to this dinner, were it not for the fact that both their convictions and their ambitions are overshadowed by their desire to induce Sir Henry to appreciate that he is a very welcome citizen of Canada, whose work, if successfully accomplished, will be of lasting advantage to the country and whose success the citizens of Montreal and the members of the Montreal Board of Trade, no matter what their political, transportation or other religions may be, cannot but desire in every meaning of that word. The reason why we may suppress all other considerations is that the prosperity of the National Railways must inevitably mean that Canada itself is prosperous.

Some years ago, when I was younger and therefore more prone to make mistakes, or rather prone to make more mistakes, I rashly stated that anything that was good for Canada was good for the C.P.R. Co., inasmuch as their fortunes were inextricably linked together. It did not take long for enterprising gentlemen who had not the same appreciation of either the bona fides or the value of the C.P.R. to distort this phrase into: "What is good for the C.P.R. is good for Canada." Both expressions are equally true, however, if you eliminate the subtle suggestion of selfish interest first, contained in the latter. But it is undeniably true that if Canada is not prosperous, the National Railways cannot prosper, and if Canada is prosperous the National Railways' position must, of necessity, be substantially improved.

The guest of the evening has had a unique and varied railway experience. Having only met Sir Henry today, you will not expect me to introduce him in that personal and familiar way I would have been able to do if this dinner had taken place a week hence. I have learned on reliable authority, however, that he is 6 ft. 4 in. tall, that in his college days he was a famous football player, and is a married man. Some years ago I pointed out a prominent banker in Montreal to a gentleman who formerly earned his living by the scientific and forceful application of his hands to vulnerable parts of the anatomy of other gentlemen striving to do the same to him; I informed my pugilistic friend that the eminent banker had been a boxer in his youth, and his reply was that if he had been a good boxer, he would bet his shirt that he was a damn good banker. I do not know that Sir Henry is a good railway executive because he was a fine football player, but I do say that he is none the less competent and efficient because of his earlier athletic prowess. He enjoys in a marked degree the friendship and admiration of a large circle of friends, both in the United States and Great Britain. Some few days ago, when in New York, I had occasion to meet many of Sir Henry's former associates. They spoke of him in terms not only of respect and admiration, but, indeed, of affection. Each president expressed his conviction that the Government Railways were fortunate to secure his services and that the whole railway situation in Canada would be improved by his advent to this country. President Rea, of the Pennsylvania System, cheerfully informed me

that all he needed to say was that Sir Henry was trained in the service of the Pennsylvania Rd. Co. Once Mr. Rea admits that a man has been trained by the Pennsylvania, he concedes him every known virtue that can be possessed by a railway executive. But it is interesting to observe the fascination with which Sir Henry's task and Canada's peculiar and almost unique railway situation is viewed by railway presidents in the United States and the transportation men of Great Britain. To them it is, if anything, a greater problem than it is to us. They have never experienced a condition in which the railways of the country were divided, not equally, but not disproportionately, between a private and a government-owned system. They are correct in its uniqueness, but they are, I think, unduly apprehensive of the complications which such a condition is anticipated to create. In no essential way should such a condition mean lack of harmony, unfairness in competition or other conditions which have tended on some occasions to bedevil the transportation interests of a country.

There is one danger, of course, which is inherent in such a situation, but not a danger insuperable to successful co-administration, and that danger is that the government system might not be permitted to be administered entirely by those in charge of its administration. Given a strong, fearless and efficient organization and with a free hand to effect which all officers of successful enterprises enjoy, there is no reason why the general transportation problems of the two systems should not be handled as effectively and as fairly as if they were privately owned and operated. In fact, I feel so strongly that this is true that I would hazard the suggestion that the principal factors in harmonizing, improving and ultimately solving, the present situation will be the executives and the officers of the existing systems. You will, no doubt, appreciate that in this country of ours many railway problems are common to the two companies. Many questions of general policy depend for their execution upon the mutuality of opinion of the officers of those corporations, and in those larger questions not local to the individual lines, but concerned with the relationship of all companies to the public they serve, the co-operation, the frank exchange of views between those officers either determines or prejudices the determination of a solution. I do not think that I am speaking with too much assurance from the experience of the past when I say that in these problems I am confident that the officers of the C.P.R. and the National Railways can work in substantial accord to the mutual advantage of their respective companies and the public.

Sir Henry will be inundated with suggestions. It is a peculiar, but not unreasonable, circumstance that when the public money is involved, every one considers it his right to make suggestions, and to, in a measure, interfere, suddenly becomes a condition attached to his ballot. It will not be Sir Henry's fault if, at times, he is irritated, but having talked with him today I am confident that his irritation will not be serious or his equanimity permanently disturbed.

I would like to assure Sir Henry and to make the assurance now before he proceeds farther to portions of the country where the people are just as estimable, but probably less free from prejudice than those of Montreal, and therefore more likely to endeavor to poison his mind with suspicion, that in the solution of these common problems of which I speak he may be assured of frankness and candor, and an honest expression of opinion and desire to co-operate on the part of the officers of the C.P.R. Co.

Gentlemen, the toast of the evening is to Sir Henry Thornton, coupled with the expression of the hope that he may be permitted to run the National System just as if he owned it himself.

Sir Henry Thornton's Speech.

It is with a deep feeling of gratitude that I rise to express my thanks to those distinguished gentlemen who have preceded me for the kindness and cordial words they have said about me, and the generous manner in which you have received those words. Dr. Gordon Laing especially has left me speechless in his description of Montreal and the modest way in which he set forth the aspirations of the Province of Quebec. He has left little to the imagination, and I am proud to heartily endorse all he has said, after having had the pleasure of being with you thus far this evening. He has referred to the fact that the Province of Quebec is the only remaining reservoir of intelligence, and, may I say, common sense, because that is significant. If the Province of Quebec continues its course it will speedily accumulate all the cents in the rest of the Dominion.

Of late I have come to the conclusion that all the world is divided into three classes. First, those who are willing to enlist in the services of the Canadian National Rys., and are not slow about saying so. The second class represents the ordinary shareholders of the Grand Trunk Ry., who have contributed materially to my correspondence. And last, but by no means least, there are those who hold the secret, and are very willing to impart it, as to where the headquarters of the system should be located. The fact that the President of the C.P.R. has done me the honor of proposing my health is in itself a compliment which any railway man would appreciate, for we in the transportation industry regard the C.P.R. as one of the best managed and one of the most efficient of railways. Its original conception was courageous and statesmanlike, and its subsequent administration has reflected credit upon all who have been connected with it. If those of us, who are charged with the responsibility of organizing into one entity and working as one unit the Canadian National Rys., succeed in approaching the enviable record of the C.P.R., we shall have more than met our responsibilities. The C.P.R. should be, and I am sure is, the pride of the people of Canada, and much of the prosperity of the Dominion is due to the efforts of its officers and staff. We shall undoubtedly be rivals, and it is good that it should be so, but I feel certain that our rivalry will only reflect itself in an effort to furnish to the people of Canada adequate and efficient transportation at reasonable cost.

I have always envied the Prophet Daniel when he appeared upon one occasion at a dinner, the result of which promised to be unpleasant to the principal guest; and, with whatever delight

the lions may have looked forward to the dish which was about to be set before them, Daniel at least, as the honored guest, had the satisfaction of knowing that he would not be called upon to speak after the conclusion of the feast. Apart from the pleasure of meeting those whom I hope will become my Canadian friends, I should have preferred to make no public speeches until I had been in Canada for at least a year. At the expiration of that time my deeds, whatever they may be, would have spoken with more accuracy than any statements I can make tonight; for words are easy of pronouncement, but actions speak with a greater eloquence. Let me frankly say that I have not the intimate acquaintance with Canada and its transportation needs which many of you possess, and it would be folly, in the absence of a detailed study of the position, to speak in other than somewhat general terms.

The amalgamation of constituent railways now known as the Canadian National Rys. has for the last two years shown an improving financial position, although the position is not today what any one of us would wish. The fact, however, that the position is improving, shows that it will yield to treatment, and reflects much credit upon those who, until the appointment of the present administration, were charged with the administration of the constituent properties. I should be wanting in observation and appreciation if I did not take advantage of this opportunity to thank Sir Joseph Flavelle, Mr. Hanna, Mr. Kelley, Mr. Robb and Mr. Hungerford, their officers and their associates on the former boards of directors for the excellent spade work they have already done, and the zeal and efficiency with which they executed their responsibilities. I hope that those of us who will follow the trail they have so ably blazed may still count upon their valued advice and support.

I am not concerned with the events and circumstances which brought the Government to take over the national railway system. We are confronted by a condition, not a theory, and I must accept things as I find them. Whatever the reasons may have been, the people of Canada have embarked upon an adventure which has not been conspicuously successful elsewhere; but I emphatically deny that this forms any reason for failure here, providing certain basic principles are unalterably maintained. There is a distinction, if not a difference, between the government railways of Canada and government-owned and operated railways elsewhere. In Canada, as I understand the position, the Government is the only shareholder in these various properties, or at least sufficiently controls the voting power to appear as the single shareholder; and the Government has elected to administer the national railways in substantially the same way as though they were privately owned. The only difference between our railways and private railways is that, so far as we are concerned, there is substantially but one shareholder to deal with, namely, the Government, and on private railways there are perhaps several thousands of shareholders. Experiments in government-owned railways elsewhere have taken the form of directly operating the railways by officers and men who were actually the servants of the government, rather than the servants of the railway. Now this distinction is obviously important, as well as vital, and it certainly

tends to make the elimination of undesirable influences from the administration of our railways easier than might otherwise be the case.

No Political Interference.—Much has been said about the dangers of political interference with our railways, and this is at least one subject upon which I can speak with emphasis and authority. The existence of politicians seems to be the price which is paid for a democratic form of government; and, generally speaking, there are two things in every country which, in the minds of at least 50% of the population, afford reasonable grounds for complaint: one is the weather, and the other is the government. But in a democracy the people get the kind of government they elect to office; and if the weather is disagreeable the Dominion of Canada provides a great variety of climates, any one of which can easily be reached by those who avail themselves of the services of the Canadian National Rys. Perhaps I should be generous and inform you that the C.P.R. has also a passenger service. Politicians are much maligned. In earlier days they were designated as statesmen, just as 15 or 20 years ago anyone who acquired a fortune was considered a captain of industry, while today opulence is generally looked down upon as an indication of profiteering. However all this may be, we all recognize that politicians do exist, and presumably because they exist they are essential in our scheme of government. But let it be emphatically understood, now and once and for all, that there is to be no political interference, direct or indirect, in the administration and working of the Canadian National Rys. I cannot put it any more forcefully without transgressing the rules of polite speech, but if I knew of any words which would make this point more clear, I should unhesitatingly employ them. The Prime Minister has solemnly assured me that there is to be no political interference, and it was with this distinct understanding that I accepted the post which the Government has done me the honor to offer. This assurance is the only assurance that any government, irrespective of political complexion, would be compelled to make under similar circumstances. It is vital to the success of our railways, and any other procedure spells inevitable disaster. From time to time the din of battle and the clash of political arms lead one at least to suspect that there are political disturbances going on in the land, and I have reason to believe that something of the kind is going on at the moment, or has taken place during the last few days. With these periodical political upheavals, neither I nor any officer of the Canadian National Rys. have, nor should have, any concern, other than the interest which every patriotic citizen should take in what is going on about him. Our job is to devote ourselves entirely and with tranquility to rendering to the people of Canada an honest and efficient railway service. I think I can speak with authority for my co-directors, and I shall certainly speak with authority for myself, when I say that, without fear and without favor, the Canadian National Rys. are to be operated of the people, by the people and for the people, and, moreover, for all of the people of the Dominion. I know that political interference presents itself in many seductive disguises, and sometimes it tends to make itself felt in many unknown ways. Of all of this I am fully

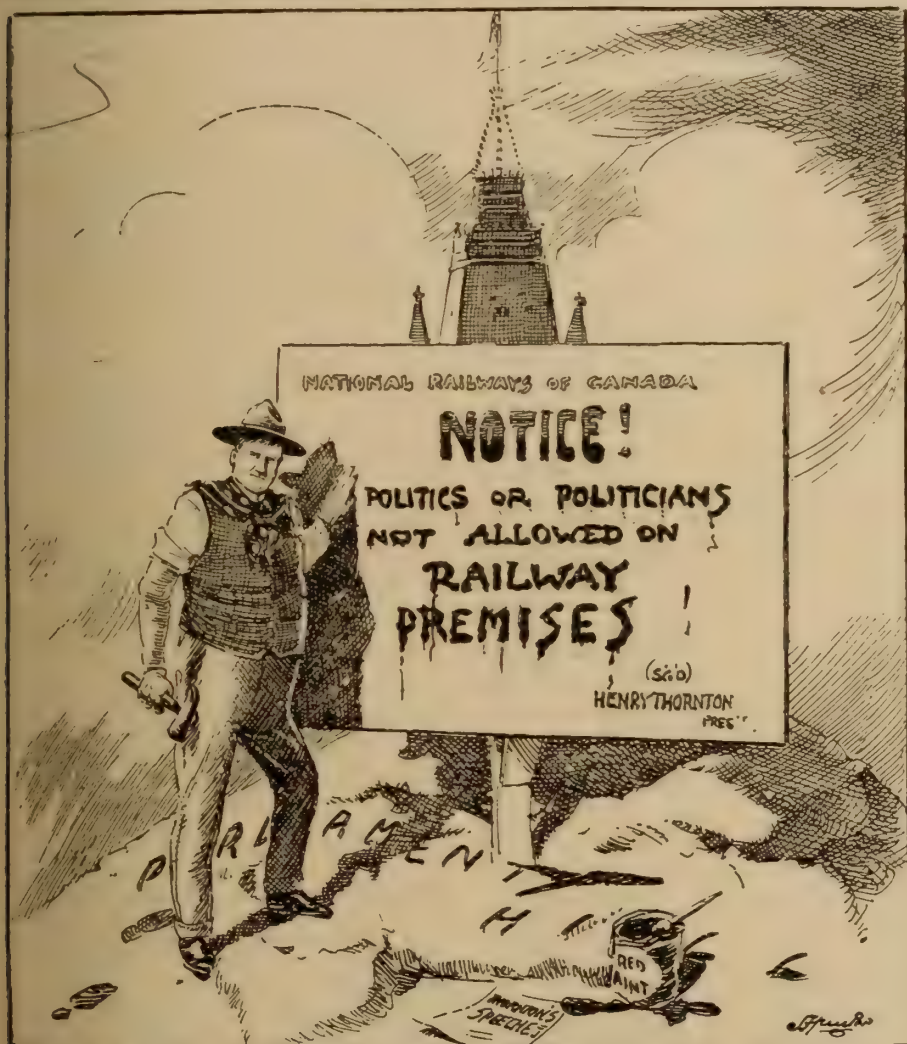
aware, but let me again repeat that there is to be no political interference or influence in the administration of the Canadian National Rys. And while I am on the subject let me go one step further. Constructive criticism, born of a desire to improve conditions, is helpful and will be welcome. Other varieties, which are intended to be destructive, may be ignored. Any individual who can tell me how I can do my job better will be regarded as my friend. Every opportunity will be given for a full discussion before decisions are made, but made they must be, with firmness, cour-

meet favorably any appeal. If I may paraphrase the words of Lincoln, I would say that you can please all of the people some of the time and some of the people all of the time, but it is quite impossible to please all of the people all of the time. Decisions will undoubtedly have to be made which will be distasteful to certain sections of the Dominion. I only hope that it will be possible to reduce decisions of this character to a negligible minimum. It must be obvious to anyone that, while recognizing in full sympathy the requirements of all sections of the Dominion, the national railways as a

will almost surely result. The preparation of the property to meet the development of the country involves wisdom and forethought. Any railway which finds itself unable adequately to meet its traffic responsibilities, is hindering the progress of the community which it serves. The relations between the company and its men involve chiefly the handling of labor, and in this respect, government-owned railways have always been particularly vulnerable. I believe that every employee of every industry, irrespective of its character, should receive that minimum wage which will enable him to live in decency, in comfort and under proper sanitary conditions, and to educate and bring up his children as self-respecting members of society. Any other policy makes for social unrest, and if carried on long enough, is likely to create political upheavals. The wage I have indicated represents the minimum to be received. How much greater the wage may be depends upon the condition of the industry, the value of the service rendered, and other similar factors. Labor troubles usually disappear if they are caught when they are young; that is to say, when they are in a plastic condition. The prompt and just settlement of complaints is an effective guarantee of tranquillity. If, on the other hand, attention is not given to such matters until they become festering sores, and both sides have delivered ultimatums, the solution becomes correspondingly difficult. It is my desire that all officers of the Canadian National Rys., in their respective capacities, should be easily accessible to their men, and should promptly deal with complaints. I am sure that there already exists a kindly feeling between our officers and their men, and I wish this spirit to be carried through our railway from Halifax to Vancouver, and that contentment and comfort amongst the men may manifest itself in smiles and goodwill, and that the Canadian National shall be known as the Smiling Railway.

Public Relations.—With respect to the public, the same policy will be pursued as with respect to the men. Everything that is asked, of course, cannot be granted, but our most pressing problem is one of development, and every effort will be made to meet the demands of the public in the promotion of increased traffic. It must, of course, be abundantly evident to all that your railways will become an increasing burden upon your pockets if freight rates are continuously lowered and wages continuously raised; and I take it that it is the desire of the people of Canada that the Canadian National Rys. should be put upon a self-supporting basis and the burden on the purse of the taxpayers stopped as quickly as possible. There should be no fundamental reason why this should not be done in a reasonable time, without doing the slightest injustice to either the men on the railway or the travelling public. But this object cannot be achieved if the railways are to be regarded as a Christmas tree, and the Chairman as a sort of glorified Santa Claus, however much I might personally like to play that role.

Headquarters and Organization.—We shall soon have to make some announcement with respect to the location of the general headquarters of the national system, and the kind of organization under which the railways are to be administered. In so far as the first is concerned, I have nothing to say tonight, excepting what I have already said, namely, that the headquarters will be



Notice to Trespassers.—From Toronto Globe.

age and no undue waste of time. When once made, they must be maintained. Any other policy would reduce your railways to a spineless nuisance with no body to kick nor soul to damn. Therefore, the railway administration must be master in its own house and in the interest of efficient management no interference of any sort can be tolerated.

Sectional Differences.—Perhaps no less dangerous than political interference is what may be called pernicious sectional pride. The Dominion covers a wide territory, and the aspirations and desires of different sections are not always identical; indeed, from time to time, they may even conflict. It will be my conscientious effort to meet the reasonable demands of all sections of the Dominion and contribute to the utmost to their development. Every request will be received with sympathy, and my first thought shall be not how to justify a refusal, but, on the other hand, how to

whole cannot be sacrificed to meet the wishes of any part of the Dominion. Whatever disagreement we may have, I hope it will be understood that an attempt will be made to solve all of our problems with malice toward none and charity towards all.

Factors of Successful Administration.—There are four factors which constitute the sum of successful railway administration: 1, adequate net receipts; 2, the development of the property to meet the burdens of future traffic; 3, the relations between the railway and its men; 4, the relations between the railway and its clientele. The activities of any railway may be classified under one or the other of these heads. The first two are largely technical. Satisfactory net receipts involve a proper organization, capable and loyal officers, together with intelligent and enlightened administration. Given these things, and barring accidents, satisfactory net earnings

placed at the point from which the Canadian National Rys. can be most efficiently, and consequently most economically, worked, having regard to all of the circumstances. I am sure that whatever may be the demands of local pride, no patriotic citizen of the Dominion would wish me to proceed upon any other basis. Whatever decision is reached is bound to involve a certain degree of disappointment to some, and I hope when a decision is announced it will be accepted by all with goodwill and in a friendly spirit.

In so far as organization is concerned, the Canadian National Rys., from the point of view of mileage, is excelled by no other railway system. It serves seaports, prairies and mountains; it embraces a variety of climates; and all are separated by vast distances. Whatever organization is adopted, it is essential that in each one of the grand divisions into which the property may be divided, there should be an executive officer, with a full staff capable of appreciating and dealing promptly with the reasonable demands of the public; that is to say, the organization must be such as will preserve a close and quick contact between the railway on the one hand and the public on the other. There must be centralization with respect to policies, but there must be complete decentralization with respect to details. It should not be beyond the wit of man to devise an organization which will adequately meet these cardinal principles, and at the same time preserve that cohesion which is essential to economical management. We are now engaged in a study of the position, and there is, of course, pressing need to announce at as early a date as possible the headquarters of the system, the character of the organization, and its principal officers, and this will all come in due time.

Appreciation of Welcome.—I should be lacking in appreciation if I did not take advantage of this opportunity to thank very many of my Canadian friends for the kind and hospitable hands which they have extended to me. It is refreshing to know and feel how many there are who wish the adventure upon which the people of Canada have embarked to prove a success; and let me also, tonight, particularly thank the Canadian press for their kind words of welcome, and in many cases their sympathetic editorials. It is right that the people of Canada should be as closely informed as possible with respect to all essential facts relating to their railways, and the medium of communication must, of course, be the press. I, therefore, wish it to be understood that I shall always be glad to meet the representatives of the press and to take them as fully into my confidence as the welfare of the railways will permit.

Financial Prospects.—I have said that our first and most pressing objective is to stop the drain on the purse of the taxpayer, resulting from the national railways. We shall do materially better this year than in previous years, and will more than meet operating expenses. Roughly speaking, and without taking into consideration the amounts which the Government have had to furnish in the past to meet deficits in operating expenses, and the guaranteed requirements of capital, our national railways must earn, roughly, \$40,000,000 net annually to stop any further advances from the Government; that is to say, to stop the drain on the taxpayers; and it will be a satisfactory day for you, and a matter of pride to me, when the people of Canada will know that their railways have

ceased to be a drain on the public purse. How soon this can be brought about I hesitate to say, but I will go so far as to indicate that it may not be so far distant as most people might imagine. The accomplishment means an increase in gross receipts, and reduction in expenses. I am inclined to think that the latter will be more easy of accomplishment than the former, because the former is involved with the whole question of Dominion development, and this brings me to the question of immigration, a subject on which I should like to say a few words.

Immigration.—Most thoughtful people in Canada, judging from the public expressions I have heard, feel that we have but one problem in Canada, namely, that of increasing the population, and I think this is largely correct. If the Dominion is to develop as it should, and if we are to enjoy all of the advantages which follow in the train of development, we in Canada must address ourselves vigorously to the question of immigration. By immigration I do not mean throwing down the barriers and making the mistake which was made in past decades in the United States, which resulted in admitting every immigrant that chose to come, but I think we should adopt a policy which is intensive, but at the same time selective. Other of the British Dominions overseas are up and doing, and we must not fall behind lest some of our sister dominions secure the cream. I have read what Lord Shaughnessy has recently said upon this subject, and I am heartily in accord with it. Just how the details should be developed, I am certainly not in a position to say tonight, but at any rate the immigration question is sufficiently important to justify the undivided attention and energy of some one capable individual, reinforced with an adequate staff. How soon the Canadian National Rys. will become self-supporting turns largely on what is done in the matter of immigration.

In conclusion, I want to thank the Board of Trade of Montreal for their kindness and hospitality in giving me an opportunity to meet so many representative citizens of the Dominion, and to thank each of you who have patiently listened to what I am afraid must of necessity have been a somewhat rambling discourse, full of generalities and characterized by nothing particularly definite. But as I have said, had I spoken a year hence, I might have gone much more to the point than is possible now. I am not so foolish as to imagine that single-handed I can solve the difficult railway problems which confront not only the board and myself, but every citizen of Canada; nor am I so silly as to imagine that if these problems could be solved single-handed, I am the only one who could do it. It happens, however, that I have been asked to tackle the job. I have gone into it with a full knowledge of the conditions and I propose to see it through. But success will only be achieved if I succeed in convincing you and the employees of the Canadian National Rys. that you and they are justified in placing your confidence in the officers who administer the property, and myself. It will require a high degree of team work on the part of those employed by the railway, coupled with the support of the public. I ask no favors, but simply a clear field and a sporting chance. The success of the Canadian National Rys. is sufficiently important to every citizen of the Dominion to justify an appeal for at least fair

play. So far as I am concerned, I have undertaken the job convinced that it can be done, and I ask you to give me that degree of confidence and support which you think my efforts justify.

The Bad Order Car Situation.

The Railway Association of Canada reports the total number of freight cars on Canadian lines on Dec. 1, 1922, as 196,148. The allowance for bad order cars on the A.R.A. basis, which assumes 7% of the cars in bad order, was 13,730, and the actual number in bad order was 10,135, or 3,595 less than the American Railway Association standard would require. The figure 10,135 represents 5.2% of the cars in bad order, compared with 6.1% on Nov. 1, 1922. The car shortage at Dec. 1 was given as 6,923, compared with 7,967 at Nov. 1.

The American Railway Association's Car Service Division reports that the total number of freight cars on line on U.S. class 1 roads on Nov. 15, 1922, was 2,258,949, of which 235,660, or 10.4%, were in bad order, compared with 11% on Nov. 1, 1922. On Nov. 15, out of 1,034,603 box cars on line, 102,867, or 9.9%, were in bad order. Out of 57,519 refrigerator cars, 5,881, or 10.2%, were in bad order. Out of 947,059 gondolas, 105,174, or 11.1%, were in bad order. Out of 82,207 stock cars, 8,326, or 10.1%, were in bad order. Out of 95,327 flat cars, 10,220, or 10.7%, were in bad order.

Analysis of the figures given above covering the Canadian situation, shows that the Canadian lines have succeeded in reducing the proportion of their cars in bad order to a very low level, when it is taken into consideration that the figure for bad order cars has been set at 7% by the American Railway Association, as representing about the best the railways can be expected to do under prevailing conditions. Some progress has also been made by U.S. roads in getting their freight equipment into good repair, the figure of 10.4% comparing very favorably with a percentage running at about 14 a few months ago.

Michigan Central Rd. Absorption.—A recent St. Thomas, Ont., press dispatch said it has been announced at the M.C.R. offices there that the M.C.R., which is a subsidiary of the New York Central Lines, would be absorbed by the latter on Jan. 1, and that its name would disappear. Canadian Railway and Marine World is officially advised that the statement quoted was not made by any M.C.R. official, and could not have been made by anyone having knowledge of the facts. The New York Central controls the Michigan Central, through ownership of approximately 90% of the capital stock, but no steps have been taken looking to a lease or further absorption of the line.

Railway Accidents Throughout Canada.—The number of railway accidents reported to the Board of Railway Commissioners during Oct., 1922, was 302, in which 1 passenger, 7 employees and 24 others were killed, and 23 passengers, 264 employees and 50 others were injured. Included in "others" are 13 killed and 27 injured, in 26 highway crossing accidents, in which 2 of the crossings were protected by bells, 2 by watchmen, and 22 were unprotected. In the crossing accidents, automobiles were concerned with 13, resulting in 10 persons being killed and 15 injured. Pedestrians were involved in 5, wagons in 7, and a bicycle in 1.

Steam Railway Operating Revenues, Expenses and other Statistics for September.

The following comparative table for September, 1922 and 1921, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There is a slight increase in the number of roads included under this heading, so that the data for 1922 and 1921 is not directly comparable with previous reports.

As the Canadian Government, Canadian Northern and Grand Trunk Pacific Railways are under one management, and operated as one system, the monthly operating reports for 1922 contain a consolidated report for these railways, under the heading "Canadian National Rys.," which includes the old Canadian Government Rys., viz., Intercolonial, Prince Edward Island, National Trans-

continental and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government and added to the Canadian National Rys.; the lines operated as the Canadian Northern Ry. System, prior to its acquisition by the Dominion Government; and the Grand Trunk Pacific Ry.

The column headed "Canadian Pacific" includes also the Montreal and Atlantic and Esquimaux and Nanaimo Rys.

The column headed "Grand Trunk" includes all the G.T.R. Co. of Canada lines, including 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Provincial Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair rivers.

Items 1 to 6 in the table include rail

lines revenues only. Previous to this year they included water lines. Operating income items have been added. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. In former years the total of mixed train miles was added to both freight and passenger train miles when computing averages. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, excess baggage, parlor cars, etc., whereas previous reports gave an average per train mile of passenger receipts only. The number of employees is also a new feature of this year's reports.

	All railways.		Canadian National		Canadian Pacific		Grand Trunk	
	1922	1921	1922	1921	1922	1921	1922	1921
Operating Revenues								
Freight	\$29,632,335	\$30,346,244	\$8,933,876	\$8,363,598	\$12,626,147	\$13,554,154	\$4,858,687	\$5,132,393
Passenger	7,746,015	8,060,005	1,763,863	1,800,327	3,406,585	3,838,359	1,485,809	1,341,335
Mail	603,521	677,884	180,794	194,893	281,031	319,773	92,000	118,378
Express	1,267,466	1,558,897	310,974	404,968	567,677	688,539	265,000	370,494
Other freight train	2,489	2,215	2,010		455	592		
Other passenger train	702,979	709,363	211,489	248,184	418,175	388,361	45,700	44,427
Water line	362,469	358,664			271,275	290,040		
All other	1,500,335	1,545,126	323,450	357,977	723,680	764,215	299,300	249,304
Total railway operating revenues	43,817,612	43,258,401	11,726,458	11,369,949	18,294,978	19,844,137	7,046,496	7,256,334
Operating expenses								
Maintenance of way and structures	\$8,146,233	\$9,547,370	\$3,001,399	\$3,102,861	\$2,980,482	\$3,436,821	\$1,306,647	\$2,018,565
Maintenance of equipment	7,773,806	8,871,582	2,513,342	2,521,229	2,899,559	3,907,661	1,610,345	1,627,840
Traffic	1,118,916	923,150	250,261	172,168	627,282	556,320	181,177	133,010
Transportation	16,180,998	16,512,959	4,983,669	5,068,970	6,681,569	6,779,463	1,840,897	3,080,716
Miscellaneous operations	501,742	598,956	167,950	215,217	245,248	272,942	42,301	48,548
General	924,184	926,823	295,821	229,680	287,425	359,747	211,284	221,775
Transportation for investment	Cr. 101,866	Cr. 409,918	88,684	407,862			Dr. 1,546	Dr. 1,519
Total railway operating expenses	\$34,544,036	\$36,970,924	11,123,749	10,902,264	13,721,568	15,312,957	6,191,108	7,128,437
Operating income								
Net operating revenue	\$7,273,575	\$6,287,476	\$602,709	\$467,684	\$4,573,409	\$4,531,180	\$855,387	\$127,897
Railway tax accruals	614,582	585,833	147,914	51,225	289,243	343,756	110,850	106,669
Uncollectible revenues	2,707	554					1,093	316
Hire of equipment	Cr. 238,202	Dr. 46,795	Cr. 5,102	Dr. 64,300	Cr. 311,319	Cr. 164,387	Cr. 196,089	Cr. 101,185
Joint facilities rents	Dr. 130,806	Dr. 57,734	Dr. 1,100	Dr. 18,674	Dr. 2,448	Dr. 1,187	Dr. 40,372	Cr. 70,020
Operating income	6,763,680	5,596,558	458,796	333,584	4,597,934	4,350,624	979,905	192,117
Operating statistics								
Average miles of road operated	38,805	38,585	17,212.00	17,111.07	18,877.2	13,785.8	3,612	3,612
Tons carried (revenue freight)	9,553	8,865	2,270	1,956	3,257	2,998	2,014	1,944
Tons carried one mile (revenue freight)	3,017,716	2,643,288	1,161,415	862,961	1,276,926	1,171,603	365,933	383,643
Tons carried (all freight)	11,104	10,375	2,773	2,471	3,890	3,620	2,316	2,224
Tons carried one mile (all freight)	3,345,208	2,950,494	1,304,784	991,411	1,421,443	1,318,735	397,876	408,545
Revenue passengers carried	3,871	3,973	956	987	1,369	1,431	1,004	1,009
Revenue passengers carried one mile	275,251	276,069	66,178	70,887	123,465	125,038	51,921	49,089
*Freight train miles	5,869	5,351	2,157	1,902	2,394	2,111	849	902
*Passenger train miles	3,864	3,884	1,104	1,073	1,691	1,711	655	551
Total train miles (revenue and non-revenue)	10,105	9,600	3,503	3,225	4,186	3,899	1,505	1,586
Freight car miles—loaded	132,342	112,825	46,349	36,653	55,316	47,602	18,547	17,350
Freight car miles—empty	60,567	59,754	23,134	18,579	25,493	26,068	7,922	9,749
Passenger train car miles	28,807	28,491	8,501	7,964	12,854	13,014	4,251	4,261
Total amount of pay roll	\$20,102,296	\$20,373,288	\$7,159,363	\$7,221,828	\$7,545,791	\$7,802,333	\$8,792,035	\$3,767,765
Number of employees	169,591	166,690	64,455	61,524	62,135	61,965	30,771	30,974
Averages per mile of road operated								
Operating revenue	\$1,077.63	\$1,121.12	\$681.30	\$664.48	\$1,318.35	\$1,439.46	\$1,950.86	\$2,008.95
Operating expenses	\$890.20	\$958.17	\$646.28	\$637.15	\$988.79	\$1,110.78	\$1,714.04	\$1,973.54
Tons moved one mile (revenue freight)	77,766	68,506	67,477	50,433	92,016	84,986	101,311	106,214
Tons moved one mile (all freight)	86,206	76,467	75,807	57,940	102,430	95,659	110,154	113,108
*Averages per freight train mile								
Freight revenue	\$5.05	\$5.67	\$4.14	\$4.40	\$5.27	\$6.42	\$5.72	\$5.69
Tons of freight (revenue freight)	514.1	493.9	538.3	453.5	533.3	554.8	430.7	425.3
Tons of freight (all freight)	555.9	551.4	604.7	521.0	593.7	624.5	468.3	452.9
Loaded freight cars	22.5	21.1	21.5	19.2	23.1	22.7	21.8	19.2
Empty freight cars	10.3	11.2	10.7	9.8	10.7	12.3	9.3	10.8
*Averages per passenger train mile								
Passenger train revenue	\$2.67	\$2.83	\$2.23	\$2.47	\$2.76	\$3.06	\$2.88	\$2.75
Passengers carried	71.2	71.1	59.9	66.1	73.0	73.1	79.2	72.0
Passenger cars	7.5	7.3	7.7	7.4	7.6	7.6	6.5	6.3
Average operating expenses per train mile	\$3.42	\$3.85	\$3.17	\$3.38	\$3.28	\$3.93	\$4.11	\$4.49
Average length of haul (revenue freight) miles	315.9	298.2	511.6	441.1	391.9	390.3	181.7	197.3
Average passenger journey miles	71.1	69.5	69.2	71.8	90.1	87.4	51.7	48.6
Average tons per load freight car	25.3	26.2	28.2	27.1	25.7	27.5	21.5	23.5
Average freight receipt per revenue ton mile .....	.982c	1.148c	.769c	.969c	.989c	1.157c	1.328c	1.338c
Average passenger receipt per passenger per mile	2.814c	2.920c	2.665c	2.540c	2.759c	3.070c	2.862c	2.732c
Ratio of pay roll to operating revenues	48.1%	47.1%	61.1%	63.5%	41.2%	39.3%	53.8%	51.9%
Ratio of pay roll to operating expenses	58.2%	55.1%	64.4%	66.2%	55.0%	61.0%	61.2%	62.9%
Ratio of operating expenses to revenues	82.61%	85.47%	94.86%	95.88%	75.08%	77.17%	87.86%	98.23%

*Contains a proportion of mixed train miles.

The Railways' Operating Results for September.

Sept., 1922, brought to Canadian railways the beginning of the heavy traffic movement which rapidly became greater in October, and which has since continued to be of large dimensions. Due to lower rates than in Sept., 1921, however, the increase in traffic in Sept., 1922, was not sufficient to yield larger gross earnings to the railways as a whole than in Sept., 1921. As shown in the table published on the preceding page, freight, passenger and total gross earnings were smaller than in Sept., 1921, despite the fact that freight tonnage handled was increased materially, while passenger traffic decreased only nominally. As compared with Aug., 1922, gross earnings for the railways as a whole in September were \$4,151,577 larger.

Analysis of operating expenses indicates that maintenance of way and structures, and maintenance of equipment, were as well kept up by the railways as in Sept., 1921. While smaller amounts were spent on these two accounts than in Sept., 1921, it will be remembered that wages in both departments were reduced between the respective months. The transportation account shows some reduction from Sept., 1921, despite the increase in freight traffic handled. In view of the fact that locomotive men's and trainmen's wages were not reduced in the period between Sept., 1921, and Sept., 1922, the reduction in transportation expense must be taken as an indication that no let-up in operating efficiency has been allowed. The reduction can, of course, be explained in part by the wage decreases applying to clerical forces, freight handlers, and other employes, and to some decrease in average fuel and material prices, but when a reduction in transportation expenses of \$331,961 was accomplished while revenue freight handled increased by more than 374,000,000 ton miles, it can safely be assumed that transportation efficiency has not been suffering. Total railway operating expenses for the roads as a whole were \$2,426,889 smaller than in Sept., 1921. As operating revenues decreased by only \$1,440,789, the operating ratio was bettered to the extent of 2.86 points, with corresponding improvement in net earnings and net operating income, as noted in the table. The improvement secured in September, compared with Aug., 1922, may be judged when it is pointed out that the operating ratio for all roads in August was 88.54, while net earnings were but \$4,315,555, and net operating income but \$3,996,417.

Attention has already been called to the increase in revenue freight ton mileage compared with that in Sept., 1921, while the increase over that in Aug., 1922, was 1,115,643,758 ton miles. Passenger traffic, however, was lighter than in Sept., 1921, the decrease in passenger miles being 818,315. A large seasonal falling off from the passenger traffic of Aug., 1922, was also recorded. The freight train miles and passenger train miles operated during the month showed an increase and a decrease, respectively, compared with those for Sept., 1921, as was to be expected from the traffic changes which took place. It is worthy of note, however, that while the number of tons of revenue freight handled increased by 14.2% over that handled in Sept., 1921, the number of freight train miles operated increased by but 9.7%. This comparison is significant, as it

shows that our remarks in connection with transportation expense were well founded. The effort in any scheme of railroading which aspires to be efficient should be to transport the maximum number of ton miles in the minimum number of train miles, for the reason that the ton miles are the units that bring in the revenue, while the operation of train miles occasions the expense. It would seem that the smaller percentage increase in train miles recorded than in revenue ton miles is a good indication of the progress Canadian railways made during the year between Sept., 1921, and Sept., 1922, in making railroading more efficient. This improvement is directly reflected in the figures covering freight train loading, on reference to which it will be seen that the average revenue train load in Sept., 1922, was 20.0 tons heavier than in Sept., 1921, while for all freight the 1922 trainload was 18.5 tons heavier.

In connection with passenger traffic, it is interesting to observe that a reduction in passenger train miles roughly proportional to the small reduction experienced in passenger traffic, compared with Sept., 1921, was obtained in Sept., 1922, but that at the same time there was a small increase in the number of passenger train car miles operated. This is accounted for, of course, by the slightly greater average number of passenger cars per passenger train, the figure being 7.5 cars for Sept., 1922, compared with 7.3 in Sept., 1921.

Further analysis into the matter of efficiency in connection with the loading and handling of freight cars discloses the fact that the better trainloading secured in Sept., 1922, than in Sept., 1921, was not on account of better car loading, but rather in spite of lower average car loading. The average carload in Sept., 1922, was but 25.3 tons, compared with 26.2 tons in Sept., 1921. The better train loading was secured through there being an average of 22.5 loaded cars per freight train, in place of but 21.1 in Sept., 1921, while at the same time the average number of empties per freight train fell from 11.2, in Sept., 1921, to 10.3 in Sept., 1922. Better utilization of freight cars, primarily made possible by more favorable traffic conditions, is thus indicated. Another favorable factor in the month's operations is found in the increased average freight haul and average passenger journey.

The situation disclosed by the payroll ratios for the roads as a whole is worthy of attention. The fact of the ratio of payroll to operating revenues being 48.1 in Sept., 1922, compared with 47.1 in Sept., 1921, indicates that railway wages have not been reduced to as great an extent as railway unit revenues, that is, rates, during the year elapsed between the respective months. The fact of the ratio of payroll to operating expenses being 58.2 in Sept., 1922, compared with 55.1 in Sept., 1921, indicates that, railway wages, being a larger part of operating expenses in the former month than in the latter, were not reduced during the elapsed year to the same extent as were other items of operating expense.

While space does not permit any thorough examination into the results secured during the month by individual properties, attention may be drawn to the fact that the Canadian National Rys.

reduced the operating ratio from 108.67 in Aug., 1922, and 95.88 in Sept., 1921, to 94.86 in Sept., 1922, and earned a net operating revenue in Sept., 1922, of \$602,709, compared with \$467,684 in Sept., 1921. Expenses increased 2% over those of Sept., 1921, but the 34.6% increase in freight traffic offset the losses experienced in passenger, express and other revenue, and in addition brought about a 6.8% increase in total revenue. Freight train loading increased from 521 to 604 net tons, and the average freight car load increased by 1.1 tons.

The C.P.R. operating ratio was reduced from 81.96 in Aug., 1922, and 77.17 in Sept., 1921, to 75 in Sept., 1922. Notwithstanding the 9% increase in freight traffic, compared with Sept., 1921, total revenues for the month declined 7.8% from those of Sept., 1921, but the 10.4% decrease in operating expenses brought about the more favorable operating ratio shown.

On the G.T.R., the effect of the recent reductions in rates was not so marked as on the transcontinental roads, the average freight receipt being 1.328c., compared with 1.338c. in Sept., 1921. Passenger traffic on the G.T.R., while lighter than in August, increased 5.8% over that of Sept., 1921, but freight traffic decreased not only 4.6% from that of Sept., 1921, but also 4% from that of Aug., 1922. This resulted in a total revenue decrease of \$209,838, compared with Sept., 1921, but as operating expenses decreased by \$937,828, the more favorable operating ratio noted was the result.

On the whole, the September results show that the Canadian railways, on the basis of the expense reductions experienced, considered in relation to the rate reductions made, were able, with a moderate increase in freight traffic, to derive results considerably better than in Sept., 1921. The article published elsewhere in this issue, dealing with C.P.R. and C.N.R. results for October, in which preliminary statements for November are also given consideration, indicates that results for Oct. and Nov., 1922, will be still better, for the roads as a whole, than those in September. As applied to the year's peak traffic, the present rates seem to be working out satisfactorily, and on this basis we can be optimistic of the future if traffic conditions remain favorable—but not otherwise, for, with light traffic, favorable earnings on the present rates would not be possible. But, although the usual seasonal decline from the peak will be experienced, there is no reason to feel that traffic conditions will become relatively unfavorable in the near future, for the reason that the country's industry is now on a sounder basis than at any time in the immediate past. For these reasons, therefore, we can feel justified in expressing the expectation that if rates are not further reduced during a reasonable future period, the railways will be favored with an opportunity to make some progress toward once more obtaining those desirable financial results which they were experiencing a few years ago.

George Cobb, Superintendent, Reid Newfoundland Co., Bishops Falls, Nfld., in remitting his renewal subscription, writes:—"Canadian Railway and Marine World is certainly a valuable fund of information. I would not be without it."

Canadian Pacific and Canadian National Railways' Earnings and Expenses.

C.P.R. gross earnings for Oct., 1922, were \$23,061,547, compared with \$22,089,624 in Oct., 1921; operating expenses were \$15,258,802, compared with \$15,378,137 in Oct., 1921; and net earnings were \$7,802,745, compared with \$6,711,487 in Oct., 1921. While gross revenue increased \$971,923, operating expenses decreased \$119,335, leaving an increase in net earnings of \$1,091,258. For the 10 months period ended Oct. 31, 1922, gross earnings were \$147,888,319, a decrease of \$10,588,933 from those for the first 10 months of 1921, while operating expenses, \$120,777,225, were but \$9,087,869 smaller than those for the first 10 months of 1921, leaving net earnings of \$27,111,094, or \$1,051,064 smaller than those for the first 10 months of 1921.

So far as net earnings are concerned, Oct., 1922, was the best month the C.P.R. has had since the company was organized. The nearest approach to October's result secured before was in Oct., 1920, when the net earnings were \$7,700,822. The gross earnings for Oct., 1920, however, when traffic was moving at peak rates, surpassed those secured in Oct., 1922, by \$1,739,086.

The Canadian National Rys., including the Canadian Northern Ry., steam lines only, the Canadian Government Rys., and the Grand Trunk Pacific Ry., gross earnings in Oct., 1922, were \$14,074,025, compared with \$12,789,473 in Oct., 1921; operating expenses were \$11,917,281, compared with \$11,756,152 in Oct., 1921, and net earnings were \$2,156,744, compared with \$1,033,321 in Oct., 1921. That is, gross earnings increased \$1,284,552, while operating expenses increased but \$161,129, resulting in an increase in net earnings of \$1,123,423.

Analysis of C.P.R. operating results shows that Oct., 1922, was the third consecutive month in which it had an increase in its net earnings. In August, 1922, the increase was \$370,297, compared with Aug., 1921; in September, 1922, it was \$265,883, compared with Sept., 1921, while in Oct., 1922, as stated above, it was \$1,091,258, compared with Oct., 1921. October, 1922, was also the third month in which a substantial decline in operating expense was recorded. In Aug. and Sept., 1922, gross revenues decreased as compared with those for Aug. and Sept., 1921, and the increased net revenues were secured only by operating expenses being reduced in greater proportion than were the gross revenues. In Oct., 1922, however, the remarkable increase in net was secured by an increase in gross earnings, in combination with a decrease in operating expenses. As the increased gross revenues, considered in relation to the important rate reductions which have gone into effect, indicate that a very much larger amount of traffic was handled in Oct., 1922, than in Oct., 1921, the fact of the company's ability to decrease operating expenses indicates that it has now got control of them in a thorough manner.

As it was pointed out in Canadian Railway and Marine World for Dec., 1922, pg. 615, C.P.R. net earnings to the end of Sept., 1922, were \$2,592,322 less than for the first 9 months of 1921, and attention was called to the conjecture in railway and financial circles as to whether the company would be able, in the final three months of 1922, to earn sufficient net to enable it to have a total net for 1922 equal to that secured in

1921. As stated above, the results in Oct., 1922, were such as to make the net earnings at the end of the 10 months period in 1922 but \$1,501,064 less than at the end of the first 10 months in 1921. In our December number, the opinion was expressed that the company had an excellent prospect of being able to wipe out this decrease, and if preliminary earnings statements for November may be taken as an indication, it will succeed in doing so. For the first week in November, the gross earnings were \$503,000 more than in the first week of Nov., 1921, while in the second, third and final periods, the increases in gross compared with the corresponding period of Nov., 1921, were \$506,000, \$705,000 and \$911,000, respectively, making 14.3% increase in gross earnings for Nov., 1922, over those for Nov., 1921. These facts, taken into consideration with smaller operating expenses in Oct., 1922, than in Oct., 1921, despite the greater traffic handled in the former month, indicate that the company will have had net earnings in November almost sufficient to bring the net for the first 11 months of 1922 to the level of those of the first 11 months of 1921.

But, even if the 1922 net earnings are equal to those of 1921, it must not be lost sight of that such net earnings will fall far below the level of those being secured annually but a few years ago. The 1921 net earnings, while sufficient to satisfy all dividend requirements, and meet other fixed charges, were only such as to yield a very small return on the value of the property devoted to the public service, and any contribution to surplus arising therefrom was of merely a nominal character. The mere fact of the C.P.R. securing as good net earnings in 1922 as in 1921, if, indeed, it does so, will in itself be of no special significance. A far more important consideration will be found in the fact that the company was able to derive net earnings from a heavy traffic in the concluding months of the year sufficiently large to enable it to make up the deficiency experienced in the preceding months. The significant fact is that the good returns were derived from the present rates only when they were applied to a heavy traffic movement. It must be evident that the success attending C.P.R. operations in the latter part of 1922 was due to the large volume of traffic, and from this it is clear that the chief thing necessary to ensure to the public a continuation of good service at the present reasonable rates, and to the railway a return which will enable it to meet all fixed charges, and put something aside to meet the public demand for increased facilities, will be a continuation of that heavy traffic.

Analysis of the Canadian National Rys. earnings statement shows a situation in Oct., 1922, which is a gratifying improvement over that of Oct., 1921. The fact of the net earnings having increased by over 100% is sufficient indication that all the national lines require to place them in position to earn their operating expenses steadily and consistently, is a continuation of the traffic conditions which made the October results possible. Preliminary earnings statements for Nov., 1922, indicate that the results in that month will be more favorable than those of Nov., 1921, and when the results secured by the G.T.R.

throughout 1922, compared with 1921, are taken into consideration, it can be predicted with some degree of confidence that the Government railways, as a whole, will about earn their operating expenses for the complete year.

While the favorable earnings secured by the railways in the autumn of 1922 are no doubt due in great measure to the movement of the large tonnage of agricultural products resulting from the bumper crops obtained throughout the country, there is also no doubt that larger tonnages of all merchandise and manufactured products, and products of the mine and forest, have been moved. The heavy traffic furnished the railways is at once an indication and a result of improved business and economic conditions, and it is to be hoped that this improved status will obtain throughout 1923, for the benefit of both the railways and the public.

Freight Car Locations on Canadian Railways.

The Railway Association of Canada has issued a report on the location of freight cars on Dec. 1, 1922, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Central Vermont, in Canada; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Grand Trunk; Kettle Valley; Michigan Central, in Canada; Napierville Jct.; Pere Marquette, in Canada; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, and Wabash, in Canada, as follows: Cars owned by reporting railways, 220,731; home cars on Canadian foreign lines, 20,463; home cars on U.S. lines, 56,441; home cars on home roads, 143,827; Canadian-owned foreign cars on home lines, 19,249; U.S.-owned foreign cars on home lines, 33,072; total cars on lines, 196,148; per cent. on lines to total owned, 88.8; deficiency on lines to total owned, 24,583; home cars in bad order, 9,718; foreign cars in bad order, 417; total cars in bad order, 10,135; per cent. in bad order, 5.2; privately-owned U.S. cars on lines, 1,996; privately-owned Canadian cars on lines, 1,033.

Flour Arbitrariness Over Wheat for Export.—Some months ago the Dominion Millers' Association, and the Canadian National Millers' Association, petitioned the Dominion Government for a review of the Board of Railway Commissioners' judgment re arbitrariness over wheat for export, and the matter was heard by a sub-committee of the Privy Council on April 19, 1922. The Minister of Justice reported on Oct. 26, 1922, that it was not a case in which the Government should interfere with the Board's order, and an order in council was passed Oct. 27, 1922, dismissing the petition. Subsequently the Dominion Millers' Association sent a delegation to Ottawa and requested the Prime Minister that the judgment be reviewed, our latest advice being that the matter was receiving consideration.

H. C. Holloway, Locomotive Foreman, Canadian National Rys., Norquay, Sask., in remitting his subscription, says: "I enjoy reading Canadian Railway and Marine World very much."

Track Section Prize Competition on Canadian Pacific Railway Eastern Lines.

For the past 10 years an annual track section prize competition has been carried out on the C.P.R. Eastern Lines, which has aroused a healthy spirit of rivalry and keen competition among the section forces of the different divisions and districts. Sixty-three prizes are awarded in the competition, as follows: A General Manager's prize to the foreman having done the best season's work on Eastern Lines; 4 general superintendent's prizes, to the foreman on each district who has done the best season's work, exclusive of the winner of the General Manager's prize; 11 division superintendent's prizes, to the foreman on each division who has done the best season's work, exclusive of winners of higher prizes; 45 roadmaster's prizes, to the foreman on each roadmaster's territory who has done the best season's work, exclusive of winners of higher prizes.

Under this system no man can win more than one prize, and all foremen have an equal chance, as the quality of the work done throughout the season is the deciding factor, and not the actual physical condition of the section at the end of the season. The basis on which the sections are judged is entirely efficiency, and careful consideration is given throughout the season to the condition of, and work done on, ditches, gauge, spiking, line, surface, bolts, rail wear, so far as it can be controlled by the section forces, switches, sidings, right of way and station grounds, track signs, cattle guards and fences. The amount of work done and the hours of labor put in, both by regular force and extra gang, are also carefully considered, and the foreman accomplishing the best work with the least amount of labor—the physical condition of the section, as to grade, alignment, drainage, and character of roadbed being considered—wins the first prize.

The number of hours of regular labor, and the number of hours of extra labor on the section are figured against the number of ties renewed, tie plates installed or changed, rails changed over on curves, and ditching done, etc. The amount of track handled, right of way, spikes and bolts, is fairly uniform on all sections, so that the condition with respect to these items at the end of the season is usually a criterion of the amount and quality of the work done thereon throughout the season. Where special conditions affect such work, they are taken into consideration. Some idea of the care exercised in judging a foreman's work can be formed by following the work in connection with the selection of a prize section. Towards the end of the season, on each of the 45 roadmasters' territories, a section is picked out as the most deserving in point of work done during the season with the material and labor available. These are carefully inspected by the superintendent and division engineer, who select the best one on each division for inspection by the general superintendent and district engineer. All divisions of a district are covered by these two officers, and the section selected which they consider eligible for the General Manager's prize. The judging for the General Manager's prize is done personally by the General Manager, the Engineer of Maintenance of Way, the Assistant Engineer of Maintenance of Way, and district officials.

Following is a list of the successful section foremen for 1922: General Manager's prize, \$100—W. Hunter, Harvey, N.B., Brownville Division, New Brunswick District.

New Brunswick District.—General Superintendent's prize, \$50—N. Mason, Woodstock Division, Canterbury.

Brownville Division: Superintendent's prize, \$25—W. E. Nason, Seboois. Roadmasters' prizes, \$10 each—B. Bedeau, Morekill; W. P. Harris, Rooth; T. Giddens, Giddens; G. Plante, Keough.

Woodstock Division: Superintendent's prize, \$25—T. Abbott, Newburgh. Roadmasters' prizes, \$10 each—B. Saunders, Canterbury; W. H. Morrill, Aroostook; B. Clark, Cardigan.

Quebec District.—General Superintendent's prize, \$50—J. Bureau, Laurentian Division, Belair.

Farnham Division: Superintendent's prize, \$25—J. Boyer, Sherbrooke. Roadmasters' prizes, \$10 each—C. Bessett, Brookport; J. Cavanaugh, Waterloo; A. Messier, West Shefford; A. Marian, Milan.

Montreal Terminals Division: Superintendent's prize, \$25—J. Poirier, Ballantyne. Roadmaster's prize, \$10—E. Manzo, Outremont.

Laurentian Division: Superintendent's prize, \$25—N. Labonte, Plaisance. Roadmasters' prizes, \$10 each—V. Carpentier, Belair; J. Constantineau, Lachute; A. Morin, Mont Rolland; A. Peland, Joliette.

Ottawa Division: Superintendent's prize, \$25—M. Gauthier, Rigaud. Roadmasters' prizes, \$10 each—A. Kanatowka, Hudson; T. A. Kelly, Waltham; A. Robillard, Maniwaki.

Smiths Falls Division: Superintendent's prize, \$25—O. Heintz, Pakenham. Roadmasters' prizes, \$10 each—A. Dawson, Brockville; E. Poirier, Vaudreuil; A. Weisenburg, Pembroke.

Ontario District.—General Superintendent's prize, \$50—W. Gratton, Trenton Division, Norwood.

Trenton Division: Superintendent's prize, \$25—W. Davis, Sharbot Lake. Roadmasters' prizes, \$10 each—J. Dawdell, Kingsford; A. Honeywell, Newtonville; L. Linton, Claremont; J. W. Bone, Brechin; R. Crawford, Titchborne; J. Wickens, Ivanhoe.

Toronto Terminals: Superintendent's prize, \$25—F. Tuckley, Islington. Roadmaster's prize, \$10—W. Spoffard, Parkdale.

Bruce Division: Superintendent's prize, \$25—J. Lee, Dundalk. Roadmasters' prizes, \$10 each—J. McMinn, Essa; R. Bates, Proton; N. Bolton, Orton.

London Division: Superintendent's prize, \$25—S. Mathies, Galt. Roadmasters' prizes, \$10 each—J. Rutledge, Watdown South; A. Fairbanks, Caradoc; T. Rath, Ayr; N. Allen, Straffordville.

Algoma District.—General Superintendent's prize, \$50—A. Milant, Schreiber Division, Rosspoint.

Sudbury Division: Superintendent's prize, \$25—J. Sayers, Garden River. Roadmasters' prizes, \$10 each—E. Starkey, Shawanaga; J. McNamara, Markstay; A. Archambault, Algoma; J. Whyatt, Klock; W. Boucher, Timiskaming.

Chapleau Division: Superintendent's prize, \$25—R. Beaupre, Chapleau. Roadmasters' prizes, \$10 each—A. Goegan, Tophet; H. Willoughan, White River.

Schreiber Division: Superintendent's prize, \$25—O. Laine, Schreiber. Roadmasters' prizes, \$10 each—B. Michaud, Loon; G. Milani, Caldwell.

Railway Earnings.

Canadian National Railways.

Following are total operating revenues, total operating expenses, and net operating revenues or deficits, for the Canadian Northern Ry. System, Grand Trunk Pacific Ry., and Canadian Government Ry., the last including the Intercolonial Ry., Prince Edward Island Ry. and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government:—

	Revenue	Expenses	Net deficits	
			1922	1921
Jan.	\$3,210,401	\$10,433,564	\$2,223,163	\$2,863,058
Feb.	7,650,743	10,026,572	2,375,829	2,986,998
March	9,418,100	10,397,547	979,447	2,582,959
April	7,804,222	9,153,738	1,349,516	2,686,639
May	9,678,965	9,726,020	47,055	2,554,540
June	8,235,603	10,199,992	1,963,989	2,595,257
July	8,877,776	10,510,778	1,633,002	1,334,569
Aug.	9,569,780	10,399,617	829,837	17,105
Sept.	11,726,459	11,123,750	*602,709	*677,685
Oct.	14,074,025	11,917,281	*2,156,744	*1,033,321

\$95,246,074 \$103,888,459 \$8,642,385 \$16,020,119
Decrease

\$ 5,784,708 \$ 13,162,442 \$7,377,734

*Net operating revenue.

Approximate gross earnings for Nov., \$13,042,333, and for two weeks ended Dec. 14, 1922, \$5,246,273, against \$12,839,107 and \$5,268,646, for same periods, 1921.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1922, compared with those for 1921. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross	Expenses	Net	Decreases
Jan.	\$11,337,975	\$10,854,498	\$483,477	\$157,948
Feb.	11,303,693	10,649,205	654,488	158,904
March	13,847,627	11,427,120	2,420,507	30,402
April	12,331,371	10,782,698	1,548,773	1,097,359
May	13,664,246	11,819,732	2,344,514	949,038
June	13,810,448	11,448,134	2,362,313	742,445
July	14,463,835	12,501,927	1,961,908	92,408
Aug.	15,918,050	12,971,613	2,946,437	*370,297
Sept.	18,149,523	13,563,595	4,585,928	*265,888
Oct.	23,061,548	15,258,803	7,802,745	*1,091,258

\$147,888,319 \$120,777,225 \$27,111,094 \$1,501,064

Decrease \$ 10,588,933 \$ 9,087,869 \$ 1,501,064

*Increase.

Approximate gross earnings for Nov., \$21,132,000, and for two weeks ended Dec. 14, 1922, \$8,268,000, against \$18,507,000 and \$7,214,000 for same periods, 1921. Mileage under operation increased to 13,502.

Grand Trunk Railway.

Following are total operating revenues, total operating expenses and net operating revenues, or deficits for 1922 and 1921:—

	Revenue	Expenses	Net revenue	
			1922	1921
Jan.	\$5,354,317	\$4,984,953	\$369,364	*\$701,166
Feb.	5,687,487	4,700,985	986,502	31,874
March	6,118,314	5,153,023	965,286	577,680
April	4,901,367	4,596,666	304,701	382,272
May	5,800,329	5,189,756	610,572	824,185
June	6,503,646	5,519,124	984,522	712,028
July	7,164,085	5,709,652	1,454,433	916,225
Aug.	7,383,340	6,130,841	1,252,499	1,361,924
Sept.	7,046,496	6,191,109	855,387	127,897

\$55,939,381 \$48,176,116 \$7,763,267 \$3,732,780

Increase \$ 7,763,267 \$ 3,732,780

*Deficit.

Approximate gross earnings for Oct., \$10,156,563; for Nov., \$10,084,707, and for two weeks ended Dec. 14, 1922, \$4,237,149, against \$9,743,332 for Oct., \$8,854,370 for Nov., and \$3,533,568 for two weeks ended Dec. 14, 1921.

Birthdays of Transportation Men in January.

Many happy returns of the day to:—

W. U. Appleton, General Superintendent of Rolling Stock, Eastern Lines, Canadian National Rys., Moncton, N.B., born there, Jan. 29, 1878.

R. Armstrong, Superintendent, Brandon Division, Manitoba District, C.P.R., Brandon, born at Kingston, Ont., Jan. 27, 1865.

L. E. Ayer, General Agent, Canadian National-Grand Trunk Rys., Kansas City, Mo., born at Henderson, Ia., Jan. 11, 1877.

F. X. Belanger, ex-General Freight and Passenger Agent, Temiscouata Ry., Riviere du Loup, Que., now Traffic Manager, Fraser Companies, Ltd., Edmundston, N.B., born at Chloxydormes, Que., Jan. 20, 1876.

Sir George McLaren Brown, European General Manager, C.P.R., London, Eng., born at Hamilton, Ont., Jan. 29, 1866.

W. H. Coverdale, President, Canada Steamship Lines, Ltd., Montreal, and New York, born at Kingston, Ont., Jan. 27, 1871.

J. E. Dalrymple, Vice President, Traffic, G.T.R., and Central Vermont Ry., Montreal, born there Jan. 1, 1869.

G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, Ottawa, Ont., born at Quebec, Que., Jan. 27, 1861.

J. E. Everell, Superintendent, Montmorency Division, Quebec Ry., Light & Power Co., Quebec, Que., born at Cap Rouge, Que., Jan. 1, 1863.

Gordon Grant, Chief Engineer, Dominion Highways Commission, Ottawa, Ont., born at Dufftown, Scotland, Jan. 2, 1861.

C. Hood, Grain Agent, C.P.R., Winnipeg, born at Edinburgh, Scotland, Jan. 20, 1864.

D. W. Houston, Superintendent, Regina Municipal Ry., Regina, Sask., born at Bathurst, N.B., Jan. 3, 1879.

H. J. Humphrey, Assistant General Superintendent, Ontario District, C.P.R., Toronto, born at Berrys Mills, N.B., Jan. 26, 1879.

P. A. Keeler, Treasurer, Dominion Express Co., Toronto, born near Prescott, Ont., Jan. 18, 1867.

H. G. Kelley, ex-President, G.T.R., Montreal, born at Philadelphia, Pa., Jan. 12, 1858.

W. A. Kingsland, General Manager, Eastern Lines, Canadian National Rys., Montreal, born at New York, N.Y., Jan. 5, 1869.

Calvin Lawrence, member Board of Railway Commissioners, Ottawa, Ont., born in Windham Tp., Norfolk county, Ont., Jan. 30, 1857.

W. J. Lynch, General Manager, Quebec Ry., Light, Heat & Power Co., Quebec, Que., born there, Jan. 17, 1882.

G. E. McCoy, Master Car Builder, Eastern Lines, Canadian National Rys., Moncton, N.B., born there, Jan. 8, 1886.

John Macrae, Locomotive Foreman, C.P.R., Winnipeg, born at Springburn, Glasgow, Scotland, Jan. 30, 1879.

G. C. Martin, General Traffic Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Creemore, Ont., Jan. 2, 1866.

William Phillips, European Manager, Canadian National-Grand Trunk Rys., Canadian Government Merchant Marine, and Canadian National Express Co., London, Eng., born at Toronto, Jan. 31, 1870.

W. Pratt, Manager, Dining and Parlor Cars, Hotels and News Department, Canadian National Rys., Toronto, born

at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870.

John Pullen, President, Canadian National Express Co., Montreal, born at Shepton Mallet, Eng., Jan. 23, 1863.

R. Mayne Reade, Superintendent, City Division and Quebec County Railway, Quebec Railway, Light & Power Co., Quebec, born at Llanelly, Wales, Jan. 1, 1868.

L. J. Rouleau, Commercial Agent, Canadian National-Grand Trunk Rys., Sherbrooke, Que., born at Montreal, Jan. 6, 1879.

F. L. Seaton, acting Assistant Auditor of Traffic, Canadian Government Rys., Moncton, N.B., born there, Jan. 29, 1878.

A. F. Stewart, Chief Engineer, Canadian Government Rys. and National Transcontinental Ry. east of Armstrong, Ont., Moncton, N.B., born at West Bay, N.S., Jan., 1864.

J. G. Sullivan, ex-Chief Engineer, Western Lines, now Consulting Engineer, C.P.R., Winnipeg, born at Bushnells Basin, N.Y., Jan. 11, 1863.

C. M. Walton, Superintendent of Transportation, Eastern Lines, G.T.R., Montreal, born there, Jan. 24, 1884.

T. H. White, Chief Engineer, Canadian Northern Pacific Ry., Vancouver, B.C., born at St. Thomas, Ont., Jan. 27, 1848.

A. Wilcox, General Superintendent, Central District, Canadian National Rys., Winnipeg, born at Kincardine, Ont., Jan. 2, 1865.

T. A. Wilson, Superintendent, Sudbury Division, Algoma District, C.P.R., Sudbury, Ont., born at Stratford, Ont., Jan. 27, 1872.

Canadian Car Demurrage Bureaus.

For several years the directory of Transportation Associations, Clubs, etc., published in each issue of Canadian Railway and Marine World, has contained the name of Canadian Car Demurrage Bureau. In our Nov. 1922 issue this was changed to Canadian Car Demurrage Bureau, Eastern Lines, as its jurisdiction is confined to points east of Port Arthur and Armstrong, Ont. Its office is at 401 St. Nicholas Building, Montreal, W. J. Collins being Manager, and A. J. Letch Assistant Manager.

For a number of years the Canadian Freight Association, Western Lines, Car Service Department, has attended to demurrage matters, but on Oct. 11, Canadian Car Demurrage Bureau, Western Lines, was organized, with jurisdiction over all territory in Canada, west of and including Port Arthur and Armstrong, the first divisional point on the Canadian National Rys. east of Superior, Ont. The Bureau's committee consists of E. Crawford, E. D. Cotterell, T. P. White and J. G. Sutherland. F. W. Thompson is acting Chairman, with office at 805 Boyd Building, Winnipeg.

G.T.R. Statistics.—D. E. Galloway, Assistant Vice President, G.T.R., in speaking recently at a dinner given in Montreal to R. H. Fish, on the latter's appointment as General Superintendent of Ontario Lines, gave the following figures respecting G.T.R. operations for 1921: Gross earnings, \$101,961,804; tons of freight handled, 27,254,786; passengers carried, 13,526,108; number of employees, 40,000; annual pay roll, approximate, \$55,000,000.

Movement of Michigan Central Railroad Cars by London & Port Stanley Railway.

The Board of Railway Commissioners passed order 33,145, Nov. 24, as follows: Re application of London & Port Stanley Ry. Co. for a revision of rates paid by Michigan Central Rd. Co. for the movement of cars between St. Thomas and London, Ont. Upon hearing the application at Ottawa, Oct. 10 and Dec. 19, 1921, and Oct. 23, 1922, the London & Port Stanley Ry. Co. and the Michigan Central Rd. Co. being represented at the hearing, and reading the agreement between the London Railway Commission and the Michigan Central Rd. Co., dated Dec. 23, 1915, under which the application is made, and the report of V. I. Smart, to whom the matter was referred for investigation, the Board, in pursuance of the terms of the said agreement, fixes the following rates to be paid the London Railway Commission by the Michigan Central Rd. Co., viz.:

Movements	Charge per car
Loads of 12-car trains.....	\$ 7.60
Empties, 12-car trains.....	5.00
Cars in trains of less than 12 cars.....	10.00
Movement of a single car.....	12.50

The operating charge for handling cars interchanged between industries on the London & Southeastern tracks and other railways at London to be \$5 instead of \$2 a car, as provided in sec. 13 of the agreement. The rates and operating charge fixed by this order to apply and be effective for 5 years from Dec. 23, 1920.

The original agreement providing for the handling of M. C. Rd. cars by the L. & P. S. Ry. between London and St. Thomas was entered into Dec. 23, 1915, sec. 7 providing that the M. C. Rd. pay the London Railway Commission, which negotiated the agreement on behalf of the L. & P. S. Ry., \$3 for each loaded car, and \$2 for each empty car, delivered in trainloads of not less than 12 cars from St. Thomas to London, or vice versa; \$4 for each car delivered in trains of less than 12 cars, and \$5 for the movement of a single car. It was provided that the per diem charges on cars so handled would be paid by the M. C. Rd., and that the minimum annual payment to be made by the M. C. Rd. to the L. & P. S. Ry. for the handling of cars in this way would be \$25,000.

It was provided that either party, at the end of 5 years, upon notice in writing at least 6 months before the expiration of the 5-year period, should be entitled to a revision of the charges, and that if such revision could not be agreed upon, the Board of Railway Commissioners should be appealed to. In 1920, as the first 5-year period expired on Dec. 23 of that year, the London Railway Commission advised the M. C. Rd. that it desired an upward revision. The M.C. Rd. management offered to double the rates, but the London Railway Commission felt that it was entitled to a greater increase. Further negotiation resulting in disagreement, the Board of Railway Commissioners, following hearings and consideration of a report prepared by V. I. Smart, of the Railways and Canals Department, fixed the new rates as mentioned in the order, retroactive to Dec. 23, 1920. It is said that the London & Port Stanley Ry. will derive from its application extra revenue amounting to about \$60,000 during the current 5-year period.

Railway Wages and Working Conditions in Canada and the United States.

Canadian Railway Shopmen.—Although the result of the ballot taken among the shopmen on Canadian railways, to determine whether a strike would be called, or further negotiations entered into with the railway executives, was not made public, it was made evident that the majority opinion among the employees affected was in favor of negotiation, by the mere fact of the shopmen's representatives meeting railway representatives in Montreal on Dec. 4, to discuss wage matters. The reduction in shopmen's wages, placed in effect by the Canadian railways, and the arbitration proceedings caused thereby, have been reviewed in preceding issues of Canadian Railway and Marine World, and the shopmen's vote referred to above was to determine whether the rank and file desired to strike in defiance of the conciliation board's award. The railways were represented in the final negotiations, beginning Dec. 4, 1922, by Geo. Hodge, Assistant General Manager, C.P.R. Eastern Lines; R. A. Pyne, Superintendent of Motive Power, C.P.R. Western Lines; E. R. Battley, Superintendent of Motive Power, G.T.R. Eastern Lines; C. F. Needham, Assistant to General Superintendent, Motive Power and Car Department, G.T.R., and C. E. Brooks, Mechanical Assistant, Locomotive Department, to Vice President, Operation and Maintenance, Canadian National Rys. The shopmen were represented by R. J. Tallon, President, American Federation of Labor, Railway Employees Department, Division 4; F. McKenna, Vice President, and Chas. Dickie, Secretary; and also by W. R. Rogers, Moncton, and S. Lyons, Winnipeg, representing the machinists; J. Corbett, London, Ont., representing the carmen; F. Harrison, Montreal, representing blacksmiths; F. Walsh, Montreal, representing pipefitters, and P. Jardine, Montreal, representing the electricians. The outcome of the negotiations, which terminated Dec. 8, 1922, was that the shopmen accepted the rates of pay put into effect by the railways, and upheld as reasonable by the conciliation board which heard the dispute arising out of the reductions. The reduced rates were made effective Aug. 16, 1922, and as a result of the final agreement reached Dec. 8, will be continued. The reductions, based on those ordered by the U.S. Railroad Labor Board for U.S. lines, ranged from 5c. to 9c. an hour, and as the reduced wages are now prevalent on U.S. lines, following the collapse of the shopmen's strike there, their continuation on the Canadian lines was expected.

Maintenance of Way Employees.—Details concerning the U.S. Railroad Labor Board order, by which wages for maintenance of way employees on U.S. roads were increased by 2c. an hour, were given in a preceding issue of Canadian Railway and Marine World. The maintenance of way employees on Canadian roads accepted the proposition advanced by the railways through the Railway Association of Canada, by which their wages were reduced to the extent that maintenance of way employees' wages had been reduced on U.S. lines by a Labor Board order in the spring of 1922, and as a consequence of the subsequent Labor Board order, referred to above, increasing U.S. employees' wages by 2c. an hour, Canadian maintenance employees asked Canadian railways to increase

their wages by a like amount. Negotiations were begun, between a wage sub-committee of the Railway Association of Canada and maintenance of way employees' representatives, on Nov. 21, 1922, and on Dec. 1 were terminated by the railway representatives agreeing to grant the increase sought. The wage sub-committee representing the railways was composed of Geo. Hodge, Assistant General Manager, C.P.R. Eastern Lines; A. E. Crilly, Assistant to General Manager, Eastern Lines, Canadian National Rys.; M. S. Blaiklock, Engineer, Maintenance of Way, G.T.R., and C. P. Riddell, General Secretary, Railway Association of Canada. The maintenance of way employees were represented by A. McAndrew, of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers; W. Aspinall, Secretary; W. Dorey, General Secretary for the brotherhood on C.P.R. lines; P. Woods, General Chairman for C.N.R. lines; B. Johnston, representing Canadian National eastern lines employees, and G. Galdi, representing G.T.R. employees. The increased rates are applicable from Nov. 1, 1922.

C.P.R. Clerical Employees.—Details of the wage reduction placed in effect Aug. 19, 1922, by the C.P.R., applicable to clerical and other employees, the majority of whom are members of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, were given in preceding issues of Canadian Railway and Marine World, as were also details of the arbitration hearings which resulted in a majority decision favorable to the employees. Despite the majority decision, the company stated that the reductions, which had been suspended pending the board's decision, would be placed back in effect, and this was done on Oct. 23, 1922. Following an agreement (hereinafter referred to) reached between the G.T.R. and its clerical employees, by which reductions made in the wages of the latter were reduced considerably, the C.P.R. clerical employees' representatives approached the company to see if part of the reductions placed in effect on the C.P.R. could not be removed, and negotiations were begun in Montreal on Dec. 13 in this connection. Our latest advice (at Dec. 20) is that no agreement has been reached. The negotiations are being carried on by Geo. Hodge, Assistant General Manager, C.P.R. Eastern Lines, and W. A. Mather, General Superintendent, Alberta District, on behalf of the company, and W. E. Turner, Calgary, and F. H. Hall, Montreal, representing the employees.

Canadian National Rys. Clerical Employees.—Further meetings have been held between C.N.R. officials and officers of the Canadian Brotherhood of Railway Employees, with a view to adjustment of the wage reductions placed in effect for clerical and other employees, the majority of whom are members of the Canadian Brotherhood of Railway Employees. The drawing up of a new schedule is also under consideration, and further negotiations are in prospect.

Grand Trunk Ry. Clerical Employees.—The conciliation board, of which E. McG. Quirk, Montreal, was Chairman, and on which the railway was represented by U. E. Gillen, Manager, Toronto Terminal Railway Co., and the employees by H. S. Ross, K.C., Montreal, which was appoint-

ed to enquire into the dispute between the G.T.R. and its clerical employees, the majority of whom are members of the Canadian Brotherhood of Railway Employees, was largely instrumental in bringing together G.T.R. and C.B.R.E. representatives in a conference at Montreal which terminated this long-standing dispute. The G.T.R. reduced the wages of its clerical employees shortly after the U.S. Railroad Labor Board had ordered a reduction for similar employees on U.S. roads, and a conciliation board with the above named members was appointed to enquire into the ensuing dispute. Pending the board's expected award, the wage reductions were held in abeyance for some time, but afterwards made effective. By the agreement reached at Montreal in the early part of Dec., 1922, a compromise was reached on the total amount of the reductions to be made, this total being reduced considerably, and many adjustments were made by grading the salaries in the various clerical positions in the service. In addition, graded rates of pay for freight handlers, warehousemen and kindred employees were established. The reductions at first proposed by the railway were from 3c. to 5c. an hour, but as finally agreed upon are considerably less. They are retroactive to Nov. 1, 1922.

Revision of G.T.R. Seniority Lists.—As stated in Canadian Railway and Marine World for Nov., 1922, pg. 572, G.T.R. employees who lost their seniority and pension rights because of the trainmen's strike of 1910 have had them restored. This has necessitated a great deal of revision of the trainmen's seniority lists, and many of the men who lost their seniority in 1910 now standing for preferred runs. Some of the men to whom seniority was restored were still in the company's service, working on seniority established since they re-entered the service after the strike, while others had been out of the service since the strike.

C.P.R. passenger car shops, which had been closed down at all points on the system for some weeks, were reopened in the latter part of Nov., 1922, and have been operating without interruption since then. About 1,700 men were affected by the shut-down at the Angus shops in Montreal, and 1,300 elsewhere on C.P.R. lines.

Car Cleaners' Wages Increased.—Reductions in passenger car cleaners' wages amounting to 5c. hourly were made by the Canadian railways when the general reductions applying to shopmen of all classes were put in effect Aug. 16, 1922. By an agreement concluded Dec. 10, 1922, between the Canadian railways represented by the Railway Association of Canada, and the American Federation of Labor's Railway Employees' Department, Division 4, car cleaners' wages were increased 1c. an hour as from Dec. 1, 1922, thus decreasing the previous reduction from 5c. to 4c. hourly, and leaving the hourly rate at 37c.

General.—Various press reports state that several locals of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees have left that organization to join the Canadian Brotherhood of Railway Employees. A London, Ont., press report of Dec. 13, 1922, stated that baggagemen and assistant station agents

on the C.P.R. in that district had left the Order of Railroad Telegraphers to join the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, and that provision for baggage-men will be made in future schedule contracts entered into by the latter organization.

A Montreal press report of Dec. 14 stated that Sir Henry Thornton, President, Canadian National Rys., would soon meet in conference at Montreal numerous representatives of the Canadian railway shopmen, train service employees and maintenance of way men, with a view to establishing an entente between the C.N.R. and the employees, which would prevent strikes or suggestions of strikes. It was stated that Tom Moore, President of the Canadian Trades and Labor Congress, and a director of the C.N.R., was taking a prominent part in arranging for the conference.

United States Situation.—The past six weeks has seen little of importance in connection with railway labor matters in the U.S., the chief development recorded being a demand made by clerical employees on about 50 roads, to the U.S. Railroad Labor Board, for an increase in wages so as to bring their rates to what they were under the Board's decision no. 2, the highest level at which they ever were. Hearings in connection with the application were held by the Board on three days late in November, 1922, when E. H. Fitzgerald, President, International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, argued in support of the application. The railways opposing the application were represented by E. J. McClees, Secretary of the eastern railways' bureau of information. After hearing argument on both sides, the Board reserved decision.

A decision of some importance given by the Labor Board dealt with the practice of contracting out repairs on the Western Maryland Rd. The Board upheld its previous ruling in matters of this nature, and decided that it was unlawful, according to the Transportation Act, for railways to contract their repair work to private individuals or outside firms.

The effects of the shopmen's strike have been completely removed on U.S. lines in the various ways described in preceding issues of Canadian Railway and Marine World, some roads settling with their shop employees on the Willard-Jewell agreement plan, others drawing up independent agreements with their new and old employees, and others continuing to operate with loyal employees and new men hired.

Sir Henry Thornton and the Salvation Army.—Shortly before leaving England for Canada, Sir Henry Thornton visited the Salvation Army farm colony, at Hadleigh, Essex, also the boys' training farm school, and the children's home in Southend, being accompanied by several Great Eastern Ry. officials, and by Commissioner and Mrs. Lamb, and Major James Turner, of the Salvation Army, representing General Booth, the party travelling by special train from Liverpool St., London. Colonel George Joliffe, the Governor of the colony, who met the visitors on arrival at Rayleigh, escorted them over the farms. Sir Henry was much impressed by what he saw of the Army's activities on the colony, and the possibilities of extending the training given to emigrants.

Canadian National Railways' Electrification Plans for Toronto District.

Canadian Railway and Marine World for Dec., 1922, gave on pg. 633, particulars of an interview in which representatives of a number of municipalities along the lake shore east of Toronto urged upon S. J. Hungerford, Vice President and General Manager, and G. Ruel, K.C., director and General Counsel, Canadian National Rys., the desirability of completing the construction of the Toronto Eastern Ry., and the electrification, in connection therewith, of certain portions of the Canadian National Rys. Orono Subdivision, so as to form a continuous electric railway from Toronto to Cobourg.

Following this interview, the C.N.R. decided to make survey, and engineers, under the direction of E. W. Oliver, General Superintendent, Electric Lines, C.N.R., are at work between Toronto and Pickering.

The original Canadian Northern line between Toronto and Trenton, Ont., is now operated as the Orono Subdivision of the Ottawa Division, Ontario District, Canadian National Rys. It is suggested to electrify the Orono Subdivision line from the passenger terminal at the Don River and Queen St., Toronto, to a point not yet determined upon, a short distance east of Toronto, where a new link would be built to connect to the Toronto Eastern Ry. at the west town line of Pickering. From Pickering to the western limit of Whitby, a portion of the Toronto Eastern line, which is graded, and on which structures are built, but on which no rails are laid, would be used. From Whitby to the east end of Wellington St., Bowmanville, another portion of the Toronto Eastern line, on which construction is completed, would be used. From Bowmanville, connection would again be established with the C.N.R. Orono Subdivision line, either via Tyrone, direct north of Bowmanville, and 45.7 miles from the Toronto Queen St. terminal via the Orono Subdivision, or via Orono, northeast of Bowmanville, and 51 miles from the Toronto Queen St. terminal via the Orono Subdivision line. From Tyrone, or Orono, the C.N.R. Orono Subdivision line would be electrified to Cobourg, 76.1 miles from the Toronto Queen St. terminal, while between Cobourg and Brighton, 22.8 miles, the Orono Subdivision line would be taken up. There is now a junction between the C.N.R. and the G.T.R. at Brighton. The Orono Subdivision line would also be taken up between the point east of Toronto where the connection which would be built between it and the Toronto Eastern Ry. at Pickering would leave it, and Tyrone or Orono, as the case might be.

We are advised that if the suggested construction should be gone on with, the service to be given would probably be about as follows: Between the Queen St. terminal in Toronto and the eastern side of the suburban area around Scarboro, every half hour; between Toronto and Bowmanville, hourly; between Whitby and Bowmanville, half hourly; between Bowmanville and Port Hope, every two hours; between Port Hope and Cobourg, hourly.

The Canadian National President's Statement re Electrification.

Not only is the providing of electric service between Toronto and Cobourg being considered, but also for the G.T.R.

line between Toronto, Hamilton and Niagara Falls. Sir Henry Thornton telegraphed W. H. Wardrope, K.C., of Hamilton, on Dec. 20, from Mont Joli, Que., as follows: "With reference to our exchanged telegrams and in response to your request that the board of the Canadian National Rys. should define their position with regard to traffic matters in the territory contiguous to Toronto and Hamilton, I beg to inform you as follows: The board is only concerned with this matter in so far as it relates to the Canadian National Rys., and any expression of opinion must, therefore, be confined to that limit. From this point of view there are two principles involved: First, the board views with apprehension anything which might jeopardize the gross receipts of the Canadian National Rys. In other words, they must pursue the same course which any other institution would pursue under similar circumstances in the protection of its business. Second, the Canadian National Rys. must adequately fulfil their obligations to the public and furnish that character of service which will meet public requirements and enable the said railway not only to retain, but increase, gross receipts. The application of the two principles announced above enables the board to say that they propose to electrify or otherwise improve the service of the Canadian National Rys. in the vicinity of Toronto and Hamilton from time to time, as circumstances and the demands of the traffic justify. As a preliminary step, an examination of the services between Toronto and Hamilton and Niagara Falls, and eastward from Toronto toward Cobourg, will at once be put in hand, with a view at least to partial electrification as soon as possible. Other developments will follow as may be required. There have been similar requests for announcement of policy from various sources, and I am, therefore, giving the information herein contained to the press."

Beer and Wine on Dining Cars in Quebec Province.

A recent Quebec press report said that it was stated that permits were about to be issued for the sale of beer and wine on Canadian National Rys. dining cars while being run on trains within the province, in the same way as permits had been issued to the C.P.R. and other railways operating dining cars within the province. It was added that the Intercolonial Ry. did not sell intoxicating liquor on its dining cars in the pre-prohibition days.

In response to our enquiry, we were officially advised that the Canadian National official under whose jurisdiction the matter would be had no knowledge that it is the intention to serve beer and wines on dining cars in Quebec Province, and the Quebec Liquor Commission advised us that the C.N. Rys. had not made any application for permits.

Canadian Railway Club.—E. R. Viberg, A.S.M.E., Mechanical Engineer, Canadian Car & Foundry Co., read a paper on present day tendencies in car construction, before the club in Montreal, Dec. 12.

Canadian Pacific Railway Construction, Betterments, Etc.

Blacks Harbor and L'Etang, N.B.—A recent press report stated that the C.P.R. was interested in a project for the construction of a railway from near St. John to Blacks Harbor and L'Etang, N.B., where deep water terminal facilities were to be provided for oceangoing ships, and that plans were being prepared for going ahead with the work. We are officially advised that the C.P.R. made some investigations in regard to a railway connection with L'Etang some years ago, but nothing came of it. The proposal to build a railway to Blacks Harbor and L'Etang is one for which the Dominion Parliament some years ago incorporated the Canadian Terminal Ry., in which L. Connors, formerly of Connors Bros., Blacks Harbor, was interested. In 1915 the company applied to the New Brunswick Government for a subsidy of \$20,000 a mile for its proposed railway, but it was refused, and an application for aid in 1916, met with the same fate.

Sherbrooke Viaduct and Bridge.—Sherbrooke, Que., City Council applied recently to the Board of Railway Commissioners for an order directing the C.P.R. to enlarge the Gault St. viaduct and to rebuild the Belvedere bridge there. Arguments were heard by the Board Nov. 26, when it was stated that the C.P.R. would pay two-thirds of the cost of a new bridge on Belvedere St., estimated to cost \$50,000. The Board is reported to have decided that improvements are necessary, and it is said an effort is being made to bring about a settlement between the different parties concerned.

La Salle Loop Line.—As stated in Canadian Railway and Marine World for Sept., 1922, pg. 461, the C.P.R. La Salle loop line in Montreal was opened Aug. 10. The construction of this line has resulted in opening up for industrial development a large area lying close to the heart of Montreal. This area, while in the town of La Salle, which is separated municipally from Montreal, is nearer to the center of the city than many sections of the city itself. The eastern limits of La Salle are less than four miles from the center of Montreal, or less than half the distance of the industrial area in the eastern end of the city. The new line runs through the heart of La Salle, and opens up some 4,675 acres of industrial sites. The entire area served by the line is level; roads and sewerage are assured to new industries locating; adequate water supply is available, as is power at low rates, and labor is plentiful. Since the line was opened, passenger service has been provided by a self-propelled gasoline motor car loaned by the Quebec Central Ry., similar to the car belonging to that railway described in Canadian Railway and Marine World for Sept., 1922, pg. 456.

The Interprovincial & James Bay Ry. starts from near Kipawa, Que., at the terminus of the C.P.R. Kipawa Branch, and the first 10 miles was completed in 1913. The construction of an extension to the Quinze River, with an 8-mile branch to Ville Marie, which will give the railway a total length of 78 miles, is in progress, and we are officially advised that about 40 miles of the grading has been completed, and that 17 miles of track has been laid. Some grading has been done beyond mile 40 from Kipawa, and the right of way to the Quinze River has been cleared.

We are officially advised, in connection with a recent press report that it was proposed to build a spur line from the Kipawa line to Silver Center, that the company has no such intention at present.

St. Thomas Yards.—A recent press report stated that work had been started on an extension of C.P.R. yards at St. Thomas, Ont., at an estimated cost of \$15,000. We are officially advised that the report was somewhat exaggerated. The work consisted of installing a new repair track, about 850 ft. long, on the company's right of way north of Talbot St.

Fort William Freight Shed Burned.—The C.P.R. freight shed, No. 5, Fort William, Ont., was totally destroyed by fire, Dec. 5, together with five cars which were being loaded and a large quantity of freight, the total estimated loss being reported as \$1,000,000. The C.P.R. steamship Assiniboia, which was moored at the passenger landing, caught fire on the bridge, but the fire was extinguished without material damage, and the vessel was towed to another dock. This was the fourth serious fire on the company's Fort William premises in 1922, the previous ones being the destruction of the yard office in January, the oil shed and carpenters' shop some time later, and the No. 2 freight shed during the summer. Plans are reported to be in preparation for the replacement of the burned building.

Russell Northerly Branch.—The first 6 miles of a branch line from Russell, Man., northerly to Cracknell, was completed and put in operation in 1921, and during 1922 the Northern Construction Co. was given a contract for a further section from Cracknell northerly. We are officially advised that track has been laid on this extension to Inglis, 5.58 miles, and that a train service is being operated over it.

Cutknife to Whitford Lake.—The C.P.R. was granted an extension of time by the Dominion Parliament in 1922, for building several branch lines, among them being the extension of the Wilkie-Cutknife branch, through Lloydminster, Sask., to Whitford Lake, Alta., in Tp. 56, Range 15, West of 4th Meridian. In 1919, when the previous extension was granted, Parliament provided that for the purpose of avoiding duplication of construction beyond Lloydminster, the approval of the route map be made subject to joint construction or operation with the Canadian Northern Ry. Co., on terms to be agreed upon between the companies or settled by the Board of Railway Commissioners, and this provision was continued in the act of 1922. The Board of Railway Commissioners, on July 12, 1919, approved of route map covering route from Cutknife, mile 0, to Tp. 56, Range 15, West of 4th Meridian, Alta.; and on June 15, 1920, approved a revised route map from mile 24 to Sec. 11, Tp. 56, Range 15, West of 4th Meridian. The C.P.R. applied to the Board recently for an order approving route map from Cutknife, Sask., mile 0, to Whitford Lake, Alta., mile 100.4. The board, on Dec. 1, refused the application on the ground that the proposed route does not vary from the first 24 miles of the route approved July 12, 1919, or from the revised location from mile 24 approved June 15, 1920.

Weyburn-Lethbridge Line.—We are

officially advised that track has been laid on the last section of this line, the newly completed section extending from Bain westerly to Manyberries, 15.55 miles. The line was inspected by C. Murphy, General Manager, Western Lines, Nov. 28, and was handed over to the operating department Dec. 11, 1922.

Acme-Empress Line.—In connection with this line, upon which track had been laid for about 34 miles at the end of 1921, we are officially advised that track was laid during 1922 on a further 3.34 miles, from Kirkpatrick to Kneehill, Alta., where a connection is made with the Canadian National Rys. This gives the line a present length of 37.03 miles, over which a train service is being operated. This extension gives the C.P.R. access to Drumheller coal fields.

Summerland Station.—A press report states that a contract has been let to Harvey & Elsey, Summerland, B.C., for building a station there, at an estimated cost of \$10,000.

Steam Railway Track Laid in 1922.

Replies to Canadian Railway and Marine World's annual enquiries as to track laid on new main and branch lines, i.e., additions to road, or point to point mileage, report 125.56 miles laid during 1922, in addition to which there was considerable mileage under construction, but on which track has not been laid. Following are the details:

Canadian National Rys.—	Miles	Miles
Magnolia, Alta., connection with Grand Trunk Pacific Ry....	0.79	
Battle-Duhamel, Alta., connection with G.T.P. Ry.....	2.80	3.59
Canadian Pacific Ry.—		
La Salle loop line, Highlands to Cote, St. Paul, Que.....	4.50	
Interprovincial & James Bay Ry., from mile 10 from Kipawa, Que., to track end.....	17.00	
Russell branch, Man., Cracknell to Inglis.....	5.68	
Weyburn-Lethbridge line, Bain to Manyberries, Alta.....	15.55	
Acme-Empress line, Kirkpatrick to Knee Hill.....	3.34	46.07
Kettle Valley Ry.—		
Dog Lake south to Experimental Farm, B.C.....		19.00
Lacombe & North Western Ry.—		
Mile 36.7, near Rimbey, to mile 49.2.....		12.50
Timiskaming & Northern Ontario Ry.—		
From Cochrane to Abitibi River.....		44.40
Total		125.56

The foregoing figures refer to mileage built for regular freight and passenger traffic, in addition to which there was a good deal of construction on industrial lines. Among these, the following were reported completed, or as expected to be completed by Dec. 31, 1922:

Belge Paper Co.—	Miles	Miles
Metabetchouan Lake to Boston-nais River, Que.....		4.50
Abitibi Transportation & Navigation Co.—		
Iroquois Falls to Hughes, Ont.	16.00	
Spur from mile 8.....	5.00	21.00
Keewatin Lumber Co.—		
C.P.R. at Kenora, Ont., to site of new pulp mill.....		1.00
Drum-Lummin Mines Ry.—		
From mines to Hartley Bay, B.C.		1.00
Total		37.50

Premier Oliver, of British Columbia, is reported to have stated, on Dec. 18, that the Legislature having adjourned, the appeal to the Dominion Privy Council on the freight rates question would engage his immediate attention.

Head-on Collision on T. & N. O. Railway.

A head-on collision between two freight trains took place on the Timiskaming & Northern Ontario Ry., Nov. 15, 1922, at 12.25 p.m., when second no. 85, locomotive 138, northbound, met extra 134 south at mile 68.5 north of North Bay. The accident was due to the crew on second 85 overrunning a 31 order held by them. The accident resulted in the death of Gordon Kay, of North Bay, the fireman on extra 134 south, \$27,000 damage to the locomotives, and about \$4,000 damage to box cars. The crew of second 85, consisting of Z. E. Filiatrault, locomotive man; J. Kennedy, conductor; B. Lord, fireman, and T. J. Doherty and A. T. Larome, brakemen, were dismissed from the railway's service. All were charged with criminal negligence, but the charges against the firemen and brakemen were dropped, while those against Filiatrault and Kennedy led to an investigation before a jury at North Bay, early in December. At the investigation, Filiatrault and Kennedy admitted their responsibility for the accident, stating that they had become confused in connection with the orders held by them. The last 31 order received had changed second 85's meet on extra 134 south from Timagami to Doherty siding, south of Timagami, and the collision occurred when second 85, northbound, had passed Doherty siding. The jury found that the accident had been caused by negligence on the part of the accused, who were allowed to go on suspended sentence.

Traffic Orders by Board of Railway Commissioners.

Exchange Surcharge on International Shipments.

General order 372, Nov. 24.—Re general order 326, Jan. 14, 1921, authorizing an exchange surcharge of 60% of the rate of exchange on all international shipments, other than coal and coke, to be added to the total through charges, including advanced charges, payable to United States carriers, when payable and collected in Canada; and re applications of Canadian Manufacturers' Association and Calgary Board of Trade for an order suspending the operation of the order, and the authority granted by it to the railway companies to levy and collect the said surcharge: Upon reading the written submissions filed by the Canadian Manufacturers' Association, the Canadian Freight Association, and other interests affected, and hearing what was alleged on behalf of the Calgary Board of Trade and individual shippers, at Calgary, Sept. 28, 1922, the Board orders that, for the present, and until further or other order, made either upon application, or by the Board of its own motion and without notice, if it shall be deemed desirable or necessary to do so, the companies be, and they are hereby relieved from complying with the requirements of paragraph 3 of the order, obtaining from the Bank of Montreal the rate of exchange for New York funds at the time, and upon the dates specified in the said order, and making monthly returns to the Board showing the amount of surcharges collected.

Supplement to Express Classification.

33,154, Nov. 27.—Re application of Express Traffic Association of Canada

for an order approving Supplement D to Express Classification for Canada no. 5: Upon reading the submissions filed in support of the application, and the report and recommendation of its Assistant Chief Traffic Officer, the Board orders that the said supplement be approved; the said supplement to be published as no. 5 to Express Classification for Canada no. 5.

Express Rates On Cream.

33,142, Nov. 25, 1922.—Re application of National Dairy Council of Canada for an order cancelling the 20% increase in express rates on cream, allowed by general order 327, Feb. 2, 1921, and re-establishing the special commodity rates on cream in existence prior to that order: Upon hearing the matter at Ottawa, April 20, 1922, the National Dairy Council of Canada, the Express Traffic Association of Canada, the Dominion Express Co., the Canadian National Express Co., fruit and vegetable interests, the Canadian Manufacturers' Association, the Canadian Packing Co., the Swift-Canadian Co., Gunn's, Limited, the Harris Abattoir Co., and the William Davies Co., being represented at the hearing, and what was alleged, the Board orders that the application be refused.

United States Railways' Financial Results.

The returns secured by U.S. railways in Oct., 1922, were very much better than for September, and reflected to a greater degree the exceptionally heavy traffic which they were handling during the autumn. As stated in Canadian Railway and Marine World for Dec., 1922, pg. 625, the net operating income earned by the class 1 roads in Sept., 1922, was but \$58,428,000, or 2.88%, on an annual basis, on the tentative valuation determined by the Interstate Commerce Commission. In October, the net operating income was \$85,234,000, representative of an annual return of 4.05% on the tentative valuation. While this was a great deal better than in September, it was not good enough to equal the record for Oct., 1921, when the net operating income was \$105,425,000, or at the rate of 5%. Gross operating revenues for the class 1 roads for Oct., 1922, were \$549,284,000, an increase over those for Oct., 1921, of 2.5%, and operating expenses, \$428,265,000, were 7.8% greater than in Oct., 1921.

For the first 10 months of 1922, net operating income for the class 1 roads was \$614,627,000, compared with \$499,346,000 in the first 10 months of 1921. This was at the rate of 3.97% on tentative valuation, on an annual basis, for 1922, compared with 3.23% in 1921.

Perusal of the above figures demonstrates that U.S. railways must improve their net earnings position considerably before they are securing returns at the rate which the Interstate Commerce Commission has decided on as being fair and just, viz., 5.75%. Many influences in the U.S., led by Senator Capper of Kansas, a leader of the agricultural interests, are working for still lower freight rates, and a repeal of the sections of the Transportation Act which, in the public mind, "guarantee" U.S. railways a stated return on the value of their respective properties. As a matter of fact, the Transportation Act guarantees the U.S. railways nothing—it merely instructs the Interstate Commerce Commission to make such rates that, with honest, efficient and economical manage-

ment, a fair return to the railways should result. The Commission set 5.75% as a fair return, but the results secured by the railways on the rates authorized, as reviewed each month in Canadian Railway and Marine World, have been such that the return specified as just and fair has never been realized by the railways as a whole.

Locomotive Stoker Applications on Canadian National Railways.

Canadian Railway and Marine World for Sept., 1922, stated that the Canadian National Rys. had bought 25 Duplex locomotive stokers for application to Santa Fe, mikado, and consolidation locomotives, and details of the application of 10 of these to Santa Fe's at the Moncton shops were given in subsequent issues. The other 15 stokers were sent to the Transcona, Man., shops, and on Dec. 13, 1922, we were officially advised that 5 mikado locomotives, nos. 3400, 3398, 3395, 3396 and 3397, had been equipped there, that work was proceeding on equipping mikado locomotives 3393 and 3394, and that nos. 3390, 3391 and 3392 would be equipped as soon as they were shopped for general repairs. The remaining 5 stokers are to be applied to heavy consolidation locomotives, it being anticipated that work will be started as soon as the locomotives can be spared, probably when the heavy grain shipment has slackened off.

In 1921, one mikado locomotive, no. 3402, class S-1-e, was received on the C.N.R. Western Lines from the builders equipped with a Duplex stoker, and 12 more locomotives of this class, from nos. 3390-3401, were built with deck castings suitable for stoker application, and with the tender also partially equipped to accommodate the stoker conveyor. As a consequence, the Transcona shops were relieved of a portion of the work which would otherwise have been made necessary by the stoker applications, but, as at Moncton, the alterations required were of considerable magnitude.

The mikado locomotives to which the stokers are being applied have 27 x 30 in. cylinders and 63 in. driving wheels, and a rated tractive effort of 53,100 lb. Total heating surface is 3,361 sq. ft., and grate area 56.5 sq. ft. Weight on drivers is 223,000 lb., and total weight of locomotive and tender 468,800 lb. The heavy consolidation locomotives to which stokers will be applied have 24 x 32 in. cylinders, 63 in. driving wheels, and a rated tractive effort of 49,800 lb. The total heating surface is 2,853 sq. ft., and grate area 49.27 sq. ft. Weight on drivers is 208,000 lb., and total weight of locomotive and tender 382,700 lb.

The intention is to operate the stoker-fired mikado locomotives out of Melville, Sask., between Melville and Rivers, 137.1 miles, on the Miniota Subdivision, Melville Division, Manitoba District; and between Melville and Watrous, 129.1 miles, on the Touchwood Subdivision, Melville Division, Manitoba District. The consolidations to be stoker fired will operate on the heavy grades between Blue River and Lucerne, B.C., 132.7 miles, on the Albreda Subdivision, Kamloops Division, and the Tete Jaune Subdivision, Edson Division, B. C. District.

An illustration showing the arrangement of the Duplex locomotive stoker and the method of its application to tender and boiler back head was given in Canadian Railway and Marine World for Dec., 1922, pg. 600.

Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 371. Nov. 3.—Disallowing, pending hearing, tariffs of supplements filed by railways qualifying item providing for box shoos, in carloads, by stipulating that same will not apply on material cleated, or glued, together, or otherwise made up, and providing on such material, the box shoos minimum weight and rate plus 4c. per 100 lb.

32,977. Oct. 16.—Authorizing Canadian Northern Ry. to cross Magnan St., Gravelbourg, Sask.

32,978. Oct. 16.—Approving plan and specifications of East Black Creek drain work to be done under G.T.R. in Ellice Tp., Ont.

32,979. Oct. 17.—Approving location of Canadian National Rys. 4th class station at Eldersley, Sask.

32,980. Oct. 17.—Authorizing Canadian Northern Ontario Ry. to operate over bridge across Rideau Canal, at Smiths Falls, Ont., without first stopping.

32,981. Oct. 17.—Authorizing Canadian National Rys. to build bridge over Pipestone Creek, Hartney Subdivision, Man.

32,982. Oct. 17.—Authorizing Quebec, Montreal & Southern Ry. to lay track across St. Ours Road, Sorel, Que.

32,983, 32,984. Oct. 17.—Authorizing Canadian Northern Ry. to use viaduct over East Burrill Creek, St. Boniface, Man., and bridge over Blanche River, Kildare Tp., Que.

32,985. Oct. 16.—Approving C.P.R. plan of layout for wigwag and bell, at crossing of Perth Road at mile 100.9, Kingston Subdivision, Ont.

32,986. Oct. 16.—Ordering Vancouver, Fraser Valley & Southern Ry. (British Columbia Electric Ry.) to reduce fare on its Burnaby Lake Line within City of Vancouver to same rate it charges and collects on its city lines.

32,987. Oct. 11.—Declaring that for the present, the C.P.R. crossing about 2 miles from Wingham station, Ont., is protected to Board's satisfaction.

32,988. Oct. 11.—Relieving Canadian National Rys. from erecting fences, gates and cattleguards on its Hervey Subdivision, Montreal Division, Que., from mile 2.0 to 6.25, both sides; from mile 14 to 14.5, south side only, and from mile 14.7 to 15.25, south side.

32,989. Oct. 16.—Dismissing complaint of Zwicker & Co., Lunenburg, N.S., against freight rate charged by Canadian National Rys. on fish from Lunenburg to Halifax and Yarmouth, N.S.

32,990. Oct. 18.—Authorizing Canadian Northern Ry. to use bridge over Bayonne River, St. Elizabeth Parish, Que.

32,991. Oct. 18.—Declaring that for the present, the G.T.R. crossing one mile north of Clandeboye, Ont., is protected to Board's satisfaction.

32,992. Oct. 17.—Authorizing Canadian Northern Ry. to use bridge over L'Assomption River, St. Charles Borromeo Parish, Que.

32,993. Oct. 16.—Dismissing complaint of National Dairy Council of Canada, on behalf of Manufacturers' Section of Alberta Dairymen's Association, against freight rates on butter east of Calgary and Edmonton, Alta.

32,994. Oct. 13.—Authorizing Canadian National Rys. to build transfer track with C.P.R. in Kamloops, B.C., leave being reserved to city to apply to Board at any time for permission to build subway at the point.

32,995. Oct. 18.—Ordering that future maintenance of C.P.R. crossing at Fourth St. (now 11th St. West), Calgary, Alta., be paid by the city.

32,996. Oct. 14.—Ordering Toronto Ry. Co. to pay C.P.R. \$4,009.57, being 10% of estimated amount of land damages in separation of grades at Avenue Road, Toronto.

32,997. Oct. 17.—Declaring that for the present, the C.P.R. crossing near Montebello station, Que., is protected to Board's satisfaction.

32,998. Oct. 18.—Authorizing Don Valley Brick Co., Toronto, to build crossing over Canadian Northern Ry.

32,999. Oct. 18.—Authorizing Canadian Northern Ry. to use bridge over Shawinigan River, St. Flore Parish, Que.

33,000. Oct. 19.—Authorizing Alberta Public Works Department to make highway across Canadian National Rys. in s.e. ¼, Sec. 10, Tp. 29, Range 20, West 4th Meridian, Alta.

33,001. Oct. 20.—Approving Canadian National Rys. compiled plan showing proposed C.P.R. connection and transfer track at Drumheller, Alta.; and ordering that, pending construction, C.P.R. is authorized to use North American Collieries spur as connection with C.N.R., up to Jan. 1, 1923, after which the connection and transfer tracks at Drumheller shall be used in accordance with approved plan; the whole work to be completed at C.P.R. expense by Jan. 1, 1923.

33,002. Oct. 19.—Dismissing application of Board of Trade of Redland, Alta., for order directing Canadian National Rys. to provide better lighting facilities at Redland station, and ordering C.N.R. to keep station reasonably lighted.

33,003. Oct. 18.—Ordering that cost of supplies for cabin and watchman, including hearing, at

crossing of G.T.R. and Hamilton St. Ry., at King St., Hamilton, Ont., be divided equally between the companies.

33,004. Oct. 19.—Approving plans showing proposed overhead crossing of G.T.R. by C.P.R., near Kingston Junction, in lots 6 and 7, west of Great Catarqui River, Ont.

33,005. Oct. 19.—Amending order 32,937, Sept. 26, re Wellington St. viaduct, Ottawa, by providing that cost of the work of keeping steel work painted and treated, and renewing flooring, and maintaining it with 4-in. B.C. not 1 fir crosstied planking, and maintaining structure from abutment to abutment, be apportioned between the G.T.R. and the C.P.R.

33,006. Oct. 19.—Extending to Nov. 30, time within which Canadian National Rys. may complete 3rd class station at Winter, Sask.

33,007. Oct. 19.—Amending order 31,876, Dec. 6, 1921, re C.P.R. and Peterborough Radial Ry., crossing at George St. Peterborough, Ont., by providing that cost of construction be paid by P.R.R., maintenance of gates by C.P.R. and P.R.R., cost of operation of gates, signals and derrails apportioned 50% by each, during the period of 24 hours, during which P.R.R. is operating gates and interlocker, and for remainder of the time each day, C.P.R. to pay the whole cost.

33,008. Oct. 20.—Authorizing Canadian Northern Ry. to open for traffic, portion of its line from junction with Brazeau Subdivision, mile 60, to Red Deer, Alta., between mile 0 and 6.1, also west leg of Y.

33,009. Oct. 20.—Ordering Canadian National Rys. to lay 24-in. corrugated iron or concrete culvert under its track at Broad Road, leading to North Annex, Regina, Sask.

33,010. Oct. 20.—Dismissing application of B. J. Ostrander, Ltd., Calgary, Alta., for order authorizing joint use of spur built for A. T. & W. J. Stephenson, Red Deer, Alta., under order 15,350, Nov. 13, 1911; and ordering that in event of failure to agree upon compensation to be paid for such use, same to be settled by Board.

33,011. Oct. 20.—Authorizing C.P.R. to build spur for P. Burns & Co., in n.w. ¼ Sec. 29, Tp. 23, Range 1, West 5th Meridian, Alta.

33,012. Oct. 19.—Authorizing Canadian Northern Ry. to open up Higginson Ave., Hawkesbury, Ont., across G.T.R., to cross it with spur, to connect with Canadian National Rys., to build certain sidings across Emerald, Gordon, James and Nelson Sts., to close Nelson St., and to divert it to a crossing farther south.

33,013. Oct. 19.—Extending to Nov. 30, 1922, time within which Canadian National Rys. may erect 3rd class station at Deepdale, Man.

33,014. Oct. 23.—Declaring that for the present, the first public crossing west of Burlington, Ont., over G.T.R., is protected to Board's satisfaction.

33,015. Oct. 20.—Authorizing Canadian Northern Ry. to use bridge over St. Norbert River, Berthier County, Que.

33,016. Oct. 21.—Approving Bell Telephone Co. agreement with Roseville Rural Telephone Co., Lanark County, Ont.

33,017. Oct. 21.—Declaring that for the present, the second crossing west of Manitou station, Man., over C.P.R., is protected to Board's satisfaction.

33,018. Oct. 20.—Authorizing C.P.R. to divert road allowance and close within right of way limits, the diversions to be at grade across its tracks, in Sec. 2, Tp. 21, Range 30, West Principal Meridian, Sask.

33,019. Oct. 21.—Amending order 32,958, Oct. 3, re G.T.R. spur for Carroll Bros., near Sherston, Ont.

33,020. Oct. 21.—Dismissing application of Michigan Central Rd. for order directing Village of Rodney, Ont., to contribute toward cost of installing new type of gates at crossing of Furncoal Road, Rodney.

33,021. Oct. 23.—Dismissing application of Connecticut Oyster Co., Toronto, relative to express classification of oysters in glass jars.

33,022. Oct. 25.—Approving location of Canadian Northern Ry. 3rd class station at Kelvington, Sask.

33,023. Oct. 25.—Authorizing G.T.R. to operate over crossing of its main line by its Port Dover-Stratford line, at Woodstock, Ont., without first stopping.

33,024. Oct. 25.—Authorizing Michigan Central Rd. and Niagara, St. Catharines & Toronto Ry. to operate over crossing at Welland, Ont., without first stopping.

33,025. Oct. 25.—Authorizing City of Hamilton, Ont., to carry Victoria Ave. across G.T.R. sidings to premises of Imperial Oil Ltd., and Charcoal Supply Co.

33,026. Oct. 25.—Authorizing British Columbia Public Works Department to build highway crossing over Great Northern Ry. at mile 185.56, Nelson-Fort Sheppard-Spokane Branch.

33,027. Oct. 25.—Authorizing G.T.R. to build spur and two spurs therefrom for Peninsular Sugar Co., Petrolia, Ont.

33,028. Oct. 26.—Authorizing Brantford Municipal Ry. Commission to lay tracks across G.T.R. on Murray St., Brantford, Ont.

33,029. Oct. 26.—Extending to July 31, 1923, time within which C.P.R. may build spur for J. G. Hargrave Co., Winnipeg, Man., authorized by order 31,663, Oct. 18, 1921.

33,030. Oct. 27.—Ordering that G.T.R. pay 30% of wages of watchman at crossing on South Market St., Brantford, Ont.

33,031. Oct. 28.—Authorizing Canadian Northern Ontario Ry. to build across highway at Footes Bay, mile 125.3, Muskoka Subdivision, Ont.

33,032. Oct. 28.—Authorizing G.T.R. to build extension to siding for C. J. Miller & Sons, Orillia, Ont.

33,033. Oct. 28.—Dispensing with consent of shareholders, and publication of notice in a newspaper in each of counties or electoral districts through which railways run, in the application of the G.T.R. for a recommendation by the Board to the Governor in council for sanction of an agreement dated Jan. 1, 1918, between G.T.R. and C.P.R., granting to C.P.R. for 20 years the right to joint use of passenger station and grounds at Brockville, Ont.

33,034. Oct. 28.—Rescinding order 31,127, June 14, authorizing G.T.R. to build spur for MacConnell & Hicklin, Canboro Tp., Ont.

33,035. Oct. 30.—Amending order 32,825, Sept. 6, authorizing G.T.R. and C.P.R. to close down interlocking plant at crossing north of Essa station, Ont., between Saturday midnight and Sunday midnight, by providing that in case it shall be necessary for the G.T.R. to let a train through the crossing between the hours mentioned, a signalman will be called to operate signals.

33,036. Oct. 30.—Extending to July 31, 1923, time within which G.T.R. may build spur for Christie Products, Lindsay, Ont., authorized by order 32,762, Aug. 12, 1922.

33,037. Oct. 26.—Authorizing C.P.R. to terminate agreement with Rob Roy Cereal Mills Co., Ltd., re siding at Yorkton, Sask.

33,038. Oct. 25.—Authorizing Three Hills Village, Alta., to make highway crossing over Grand Trunk Pacific Ry. in Sec. 36, Tp. 31, Range 24, West 4th Meridian.

33,039. Oct. 25.—Ordering Canadian Northern Ry. to pay Pipestone Rural Municipality, Man., \$665.70, estimated cost of roadway to Woodnorth township.

33,040. Oct. 27.—Authorizing City of Regina, Sask., to open Retallack St. across Canadian National Rys.

33,041. Oct. 25.—Approving location of Canadian Northern Ry. proposed freight and passenger shelter at Okla, Sask.

33,042. Nov. 4.—Ordering Canadian National Rys. to erect fence on north side of its Brule Subdivision, Ont., from mile 121.3 to 126.3, by Nov. 30; portion between mile 126.3 and 142 to be completed by June 1, 1923.

33,043. Nov. 2.—Amending order 16,151, March 20, 1912, authorizing Town of Clarendon, Alta., to extend 4th Ave. across C.P.R., by providing that maintenance be paid by the town.

33,044. Oct. 31.—Approving plan showing proposed changes in signals at crossing of Michigan Central Rd. and G.T.R. at Yarmouth, Ont.

33,045. Nov. 2.—Amending order 32,873, Sept. 20, authorizing Canadian National Rys. to build a bridge over Assiniboine River, near Leon, by changing "Saskatchewan" to "Manitoba."

33,046. Nov. 2.—Authorizing Canadian National Rys. to rebuild bridge over Valley River in east half of Sec. 13, Tp. 26, Range 20, West Principal Meridian, Sask.

33,047, 33,048. Oct. 31.—Authorizing Windsor, Essex & Lake Shore Rapid Ry. to enter Robert Brady's and James Deehan's lands, Maidstone and Sandwich South Tps., Ont., to remove obstructions to view at crossing of Town Line Road, between Maidstone and Sandwich South Tps., Ont.

33,049. Nov. 7.—Approving agreement between Bell Telephone Co. and West Williams Rural Telephone Association, Middlesex County, Ont.

33,050. Nov. 7.—Declaring that for the present G.T.R. crossing near Thornton, Ont., is protected to Board's satisfaction.

33,051. Nov. 7.—Approving location and details of C.P.R. proposed station at Dunlop, Ont.

33,052. Oct. 31.—Approving G.T.R. plan showing proposed layout for protection by two automatic bells, with wigwags, at the crossing of Glenburnie Road (Perth Road) west of Kingston Jct. rock cut, Ont.

33,053, 33,054. Nov. 8, 7.—Authorizing G.T.R. to build spurs for Crane, Ltd., and Constructing & Paving Co. of Ontario, Toronto.

33,055. Nov. 7.—Authorizing Canadian Northern Ry. to cross and divert a number of highways on its line from Twin City Jct. to Kakabeka Falls, Ont.

33,056. Nov. 8.—Approving supplement 3 to Express Classification for Canada 5, providing for weight allowance of 15% from gross weight on shipments of oysters in glass, when packed in ice.

33,057. Nov. 8.—Amending order 32,996, Oct. 14, re separation of grades at Avenue Road, Toronto, by providing that Toronto Ry. pay C.P.R. \$4,425.65, instead of \$4,009.57 as shown in order 32,996, being 10% of estimated land damages.

33,058. Nov. 8.—Authorizing Canadian National Rys. to make highway crossing west of existing crossing at Innisfree, Alta., and authorizing Birch Lake Municipality, 484, Alta., to

- make highway across C.N.R. at point east of existing crossing.
- 33,059. Nov. 7.—Approving agreement between Bell Telephone Co. and Home Telephone Co., York and Ontario Counties, Ont.
- 33,060. Nov. 8.—Approving plan showing permanent structure to be erected on Lot 57, Stamford Tp., Ont., where Hydro-Electric Power Commission's single track line crosses under Michigan Central Rd.
- 33,061. Nov. 7.—Authorizing Canada Southern Ry., for taking care of slope of embankment, to take certain lands in Niagara Falls, Ont.
- 33,062. Nov. 8.—Authorizing Toronto, Hamilton & Buffalo Ry. to take certain lands in Saltfleet Tp., Ont., for improving view at crossing of Given Road.
- 33,063. Nov. 9.—Approving plan showing proposed revision of interlocking plant at junction of Canadian National Rys. and C.P.R. at Current River, Ont.
- 33,064. Nov. 9.—Authorizing Ribstone municipal district 421, Alta., to make highway crossing over Canadian National Rys. at Main St., Ribstone, Alta.
- 33,065. Nov. 10.—Authorizing C.P.R. to build spur for B.C. Spruce Mills, Ltd., Lumberton, B.C.
- 33,066. Nov. 9.—Ordering Niagara, St. Catharines & Toronto Ry. to keep its cars at least 40 ft. from street line at John St., St. Catharines, Ont.
- 33,067. Nov. 10.—Declaring that for the present, the first public crossing over Michigan Central Rd. west of Montague station, Ont., is protected to Board's satisfaction.
- 33,068, 33,069. Nov. 8, 10.—Declaring that for the present C.P.R. crossings near Headingly station, Man., and near Yamachiche station, Que., are protected to Board's satisfaction.
- 33,070. Nov. 9.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to extend Bradshaw Road across its railway $1\frac{1}{2}$ miles east of Otter, B.C.
- 33,071. Nov. 7.—Relieving G.T.R. from maintaining fencing, etc., between miles 8 and 10, St. Valere de Bulstrode Parish, Que.
- 33,072. Nov. 9.—Authorizing G.T.R. to build siding for Canadian Ramapo Iron Works, on lot 77, Stamford Tp., Ont.
- 33,073. Nov. 10.—Authorizing C.P.R. to build its Langdon North Branch across Government surveyed road in n.e. $\frac{1}{4}$ Sec. 7, Tp. 29, Range 20, West 4th Meridian, Alta.
- 33,074, 33,075. Nov. 11.—Ordering that in authority under order 32,205, Mar. 10, 1922, re extension of storm sewer across Toronto, Hamilton & Buffalo Ry. near Simcoe and Wellington Sts., and under order 32,214, Mar. 13, 1922, re storm overflow sewer across G.T.R. at Ferrie and Wellington Sts., Hamilton, Ont., cost of work and details be governed by Standard Regulations Regarding Pipe Crossings under Railways.
- 33,076. Nov. 11.—Authorizing G.T.R. to build spur from Belt Line Ry., east of Nokomis St., York Tp., Ont., for D. Darling.
- 33,077. Nov. 11.—Approving location of Canadian National Rys. proposed freight and passenger shelter at Inland, Alta.
- 33,078. Nov. 10.—Approving supplement C to Express Classification for Canada 5, to be published as supplement 4.
- 33,079. Nov. 8.—Authorizing Canadian Northern Quebec Ry. to use bridge over Rouge River, St. Leger Parish, Que.
- 33,080. Oct. 25.—Declaring that for the present C.P.R. crossing north of St. Gregoire, Que., is protected to Board's satisfaction.
- 33,081. Nov. 13.—Authorizing Canadian Northern Ry. to build spur for Leader Publishing Co., Regina, Sask.
- 33,082. Nov. 14.—Amending order 33,056, Nov. 8, approving supplement 3 to Express Classification for Canada 5, by striking out direction that it be published in Canada Gazette.
- 33,083. Nov. 14.—Ordering Canadian National Rys. to appoint station agent at Peesane, Sask., by Dec. 15.
- 33,084. Nov. 13.—Authorizing C.P.R. to build spur for Imperial Oil, Ltd., Calgary, Alta.
- 33,085. Nov. 13.—Authorizing Interprovincial & James Bay Ry. (C.P.R.) to cross certain road allowances in Laverlochere and Baby Tps., Que.
- 33,086. Nov. 15.—Approving plan showing deviation, or alteration, proposed in Canadian National Rys. in s.w. $\frac{1}{4}$ Sec. 16, Tp. 29, Range 9, West 3rd Meridian, Sask.
- 33,087. Nov. 13.—Amending order 11,809, Sept. 19, 1910, re Alexandra St. crossing of Calgary & Edmonton Ry. (C.P.R.) at Millet, Alta., by providing that cost of maintaining be paid by municipality.
- 33,088, 33,089. Nov. 14.—Approving Maritime Coal, Railway & Power Co.'s standard freight tariff C.R.C. 1, and standard passenger tariff C.R.C. 1.
- 33,090. Nov. 14.—Approving Maritime Coal, Railway & Power Co., bylaw R authorizing N. T. Avar, General Manager, to issue tariffs of tolls.
- 33,091. Nov. 11.—Ordering that authority under order 32,532, June 4, re sewer under Toronto, Hamilton & Buffalo Ry., on King St., Hamilton, Ont., be governed by Standard Regulations Regarding Pipe Crossings under Railways.
- 33,092. Nov. 14.—Authorizing G.T.R. to build spur for National Coöperage Co., Markham Tp., Ont.
- 33,093. Nov. 15.—Declaring that for the present the crossing of Charlesbourg Road by Canadian National Rys. at mile 2.3, St. Lawrence Subdivision, Que., is protected to Board's satisfaction.
- 33,094 to 33,097. Nov. 15.—Authorizing Canadian Northern Ontario Ry. to use bridges over Burnt Creek, Neelon Tp., Ont.; over Black River, Georgina Tp., Ont.; over William St., Parry Sound, Ont.; and over Farm Road, Whitchurch Tp., Ont.
- 33,098. Nov. 15.—Authorizing City of Hamilton, Ont., to build storm sewer under Hamilton Radial Electric Ry. on Kenilworth Ave., in accordance with Standard Regulations Regarding Pipe Crossings under Railways.
- 33,099. Nov. 14.—Ordering G.T.R. to keep its cars back 40 ft. from street line at John St., St. Catharines, Ont.
- 33,100. Nov. 15.—Authorizing City of Hamilton, Ont., to build storm sewer under Toronto, Hamilton & Buffalo Ry. and G.T.R. joint sidings into National Steel Car Co.'s and Firestone Tire & Rubber Co.'s premises, in accordance with Standard Regulations Regarding Pipe Crossings under Railways.
- 33,101. Nov. 15.—Authorizing use of subway carrying Canadian Northern Ry. across Bowes St., Parry Sound, Ont.
- 33,102. Nov. 15.—Authorizing Canadian National Rys. to use bridge over Black River, Rama Tp., Ont.
- 33,103. Nov. 14.—Authorizing G.T.R. to build spur for Regal Poultry Feed Co., Woodhouse Tp., Ont.
- 33,104. Nov. 15.—Authorizing Canadian Northern Ontario Ry. to use bridge over Christie Road, Foley Tp., Ont.
- 33,105. Nov. 15.—Authorizing Canadian Northern Ry. to use viaduct over Don River, York Tp., Ont., mile 15 from Toronto.
- 33,106. Nov. 14.—Ordering Niagara, St. Catharines & Toronto Ry. and G.T.R. to keep their cars back 40 ft. from street line at Page St., St. Catharines, Ont.
- 33,107. Nov. 15.—Authorizing Canadian Northern Ry. to use viaduct over Don River, at mile 13.0, Muskoka Subdivision, Ont.
- 33,108. Nov. 15.—Authorizing Canadian National Rys. to use bridge over side road between Lots 15 and 16, Cons. 3 and 4, and road between Cons. 3 and 4, Whitchurch Tp., Ont.
- 33,109. Nov. 17.—Authorizing Grand Trunk Pacific Ry. to remove planking from crossings on property of R. W. Hyndman, Port Arthur, Ont.
- 33,110. Nov. 17.—Authorizing G.T.R. to use bridge carrying John St., Hamilton, over its tracks.
- 33,111. Nov. 17.—Authorizing C.P.R. to cross and divert road allowance in n.e. $\frac{1}{4}$ Sec. 23, Tp. 16, Range 4, West 2nd Meridian, Sask.
- 33,112, 33,113. Nov. 17.—Authorizing G.T.R. to use bridges carrying Hughson and Catharine Sts., Hamilton, Ont., over its tracks.
- 33,114. Nov. 17.—Authorizing Saskatchewan Highways Department to carry highway across C.P.R. in n.w. $\frac{1}{4}$ Sec. 30, Tp. 16, Range 4, West 2nd Meridian.
- 33,115. Nov. 17.—Authorizing G.T.R. to build spur for Longford Quarry Co., Rama Tp., Ont.
- 33,116. Nov. 17.—Rescinding order 31,770, Nov. 12, 1921, authorizing G.T.R. to build spur for A. E. Jupp Construction Co., Saltfleet Tp., Ont.
- 33,117. Nov. 17.—Authorizing C.P.R. to build spur for Bienfait Commercial Co. in n.e. $\frac{1}{4}$ Sec. 23, Tp. 7, West 2nd Meridian, Sask.
- 33,118. Nov. 17.—Authorizing C.P.R. to make highway crossing on its Langdon North Branch, in n.w. $\frac{1}{4}$ Sec. 12, Tp. 29, Range 22, West 4th Meridian, Sask.
- 33,119. Nov. 17.—Authorizing C.P.R. to rebuild bridge 25.9 over Nose Creek, Red Deer Subdivision, Alta.
- 33,120, 33,121. Nov. 20.—Approving Bell Telephone Co. agreements with Notre Dame de Ham Telephone Co., Wolfe County, Que., and Mount Albert Telephone Co., York and Ontario Counties, Ont.
- 33,122. Nov. 17.—Authorizing G.T.R. to build spur for Canada Grip Nut Co., St. Johns, Que.
- 33,123. Nov. 17.—Authorizing G.T.R. to use bridge carrying McNab St., Hamilton, Ont., over its tracks.
- 33,124. Nov. 17.—Rescinding order 24,759, Feb. 23, 1916, authorizing G.T.R. to build spur for The Wm. Kennedy & Sons, Collingwood, Ont.
- 33,125. Nov. 20.—Authorizing C.P.R. and Peterborough Radial Ry. to operate over George St., Peterborough, Ont., without stopping.
- 33,126. Nov. 17.—Authorizing G.T.R. to enter lands of F. Chisholm, John Sowerby and T. Sowerby, to remove trees and other obstructions to view at crossing of 4th concession road, Goderich Tp., Ont.
- 33,127. Nov. 21.—Authorizing Kingston Suburban Roads Commission to divert Bath Road, Collins Bay, Ont., so as to eliminate two crossings of G.T.R.
- 33,128. Nov. 21.—Authorizing C.P.R. to build two spurs for W. J. McKee, Windsor, Ont.
- 33,129. Nov. 21.—Approving clearances at platform at C.P.R. siding of Rolland Paper Co., Mount Rolland, Que.
- 33,130. Nov. 22.—Authorizing Canadian Northern Ry. to use bridge over Kenogamisis River, Thunder Bay District, Ont.
- 33,131. Nov. 22.—Authorizing Canadian National Rys. to open for traffic, portion of revised line from mile 8.7 to 11.1, Keshabow Subdivision, on north side of Mount Yard, west of Fort William, Ont.
- 33,132. Nov. 21.—Authorizing Interprovincial & James Bay Ry. (C.P.R.) to build pile trestle at bridge 15.97.
- 33,133. Nov. 22.—Authorizing Canadian Northern Ontario Ry. to use bridge over Blackwater River, Thunder Bay District, mile 21.7 from Jellicoe, Ont.
- 33,134. Nov. 22.—Authorizing C.P.R. to build spur for Sherwin-Williams Co. at La Visitation de Champlain Parish, Que.
- 33,135, 33,136. Nov. 22, 21.—Authorizing Canadian Northern Ontario Ry. to use bridges over Blackwater River, at mile 21.4, and at Orient Bay, mile 44.1 from Jellicoe, Ont.
- 33,137. Nov. 22.—Amending order 33,052, Oct. 31, approving G.T.R. plan of layout of automatic bells with wigwags, at crossing of Glenburnie Road, west of Kingston, Ont., by providing that 25% of cost be paid out of railway grade crossing fund.
- 33,138. Nov. 21.—Authorizing Canadian Northern Ry. to use bridge over Stillwater Creek, mile 79.72 from Jellicoe, Ont.
- 33,139. Nov. 22.—Authorizing C.P.R. to open for traffic, portion of its Russell Northerly Branch from mile 6.5 to 12.34, Manitoba.
- 33,140. Nov. 22.—Authorizing Hydro Electric Power Commission of Ontario to build interchange track with Essex Terminal Ry. on Lots 56 and 57, Sandwich West Tp., Ont.
- 33,141. Nov. 23.—Authorizing C.P.R. to rebuild west abutment at bridge 0.74, St. John Subdivision, over Strait Shore Road, N.B.
- 33,142. Nov. 25.—Dismissing application of National Dairy Council of Canada for order cancelling 20% increase in express rates on cream, allowed by general order 327, Feb. 2, 1921, and re-establishing special commodity rates on cream in existence prior to that order.
- 33,143. Nov. 11.—Ordering that authority under order 32,408, May 17, re storm sewer under G.T.R. on Wellington St., Hamilton, Ont., be governed by Standard Regulations Regarding Pipe Crossings under Railways.
- 33,144. Nov. 25.—Authorizing G.T.R. to build spur for Mansons, Ltd., West Hawkesbury Tp., Ont.
- 33,145. Nov. 24.—Fixing rates and charges to be paid London Railway Commission by Michigan Central Rd. for movement of cars between St. Thomas and London, Ont.
- 33,146. Nov. 21.—Relieving Canadian National Rys. from maintaining fences, gates and cattle guards at certain points on its Irondale Subdivision, Ont.
- 33,147. Nov. 25.—Declaring that for the present G.T.R. crossing, Fifth Ave., Weston, Ont., is protected to Board's satisfaction.
- 33,148. Nov. 22.—Authorizing C.P.R. and G.T.R. to close down interlocking plant during certain hours at mile 26.65, Cornwall Subdivision, Ont.
- 33,149. Nov. 24.—Ordering C.P.R. to install double electric bell and wigwag at Craig St. crossing, east of Perth station, Ont.
- 33,150. Nov. 25.—Approving clearances at Michigan Central Rd. siding serving Empire Flour Mills, Ltd., St. Thomas, Ont.
- 33,151. Ordering Grand Trunk Pacific Ry. to build by Sept. 1, 1923, a 2-pen stock yard and loading platform at Deville, Alta.
- 33,152. Nov. 27.—Amending order 33,084, Nov. 13, 1922, authorizing C.P.R. to build spur for Imperial Oil, Ltd., Calgary, Alta., by ordering that cost of crossing of Calgary Municipal Ry. and any protection that may be ordered by the Board, be paid by Imperial Oil, Ltd.
- 33,153. Nov. 27.—Declaring that for the present the fifth public crossing west of St. Catharines, Ont., over G.T.R. is protected to Board's satisfaction.
- 33,154. Nov. 27.—Approving supplement D to Express Classification for Canada 5.
- 33,155. Nov. 27.—Rescinding order 32,974, Oct. 16, removing speed limit of 10 miles an hour at C.P.R. crossing two miles east of St. Thomas, Ont.
- 33,156. Nov. 27.—Ordering Michigan Central Rd. to pay Mrs. E. Prest \$260 for damage to property in removing obstructions to view at highway crossing between Lots 13 and 14, Con. 6, Wainfleet Tp., Ont.
- 33,157. Approving location of C.P.R. standard A3 station at Inglis, Man.
- 33,158. Nov. 22.—Recommending to Governor in council for sanction, lease by C.P.R. of Interprovincial & James Bay Ry. for 99 years from July 1, 1922.
- 33,159. Nov. 27.—Ordering Canadian National Rys. to keep cars clear of street line on each side of Main St., Wadena, Sask., and any movements made on passing track during business hours to be flagged over crossing.
- 33,160. Nov. 28.—Declaring that for the present the G.T.R. crossing at Jarvis, Ont., is protected to Board's satisfaction.
- 33,161. Nov. 25.—Authorizing Canadian Northern Ry. to divert road allowance between Secs. 5 and 6, Tp. 65, Range 22, West 4th Meridian, Alta., to a crossing in s.w. $\frac{1}{4}$ Sec. 5.
- 33,162. Nov. 25.—Authorizing Alberta Public Works Department to build highway crossing over Grand Trunk Pacific Ry. in Sec. 11, Tp. 36, Range 23, West 4th Meridian, Alta.
- 33,163. Nov. 25.—Ordering G.T.R., within 90 days, to install improved type of automatic bell

with wigwag signal at first crossing east of Ren-ton station, Ont.

33,164. Nov. 28.—Declaring that for the pres-ent the G.T.R. crossing at Rosebank station, Ont., is protected to Board's satisfaction.

33,165. Nov. 17.—Declaring that for the pres-ent the Massawippi crossing, near Lennoxville, Que., over G.T.R. is protected to Board's satis-faction.

33,166. Nov. 27.—Authorizing G.T.R. to divert Lake Shore Road, Tay Tp., Ont., from Lot 13 to south of G.T.R. bridge over Hog River.

33,167. Nov. 29.—Authorizing City of Hamil- ton, Ont., to lay storm sewer under G.T.R. on Kenilworth Ave.

33,168 to 33,170. Nov. 28.—Approving Bell Tele- phone Co. agreements with North Algoma Muni- cipal Telephone System, Renfrew County, Ont.; North Ham Telephone Co., Wolfe County, Que., and Queen's Line Telephone Co., Renfrew county, Ont.

33,171. Nov. 28.—Declaring that for the pres- ent C.P.R. crossing near Ogema, Sask., is pro- tected to Board's satisfaction.

33,172. Nov. 27.—Declaring that for the pres- ent, G.T.R. crossing near Walkerville, Ont., is protected to Board's satisfaction.

33,173. Nov. 28.—Authorizing G.T.R. to use bridge 329½, Barrie Division, at mile 100.69 from Toronto.

33,174. Nov. 29.—Authorizing C.P.R. to build 4 spurs for St. Lawrence Paper Mills, Three Rivers, Que.

33,175. Nov. 29.—Extending to Feb. 8, 1924, time within which Canadian Northern Ry. may build Y at Rorekston, Man., authorized by order 32,114, Feb. 8, 1922.

33,176. Nov. 30.—Authorizing Grand Trunk Pacific Ry. to build additional trackage for Balkan Coal Co. in s.w. ¼ Sec. 14, Tp. 49, Range 21, West 5th Meridian, Alta.

33,177 to 33,179. Nov. 29.—Approving Bell Telephone Co. agreements with Weedon Telephone Co., Wolfe county, Que.; Kerr Line Telephone Co., Renfrew county, Ont., and St. Mathieu Rural Telephone Co., Laprairie and Napierville counties, Que.

33,180. Dec. 1.—Dismissing C.P.R. application for approval of route map showing general loca- tion of its Cutknife to Whitford Lake Branch, mile 0 to 180.4.

33,181. Dec. 1.—Declaring that for the pres- ent, G.T.R. crossing near Barrington, Que., is protected to Board's satisfaction.

33,182. Nov. 30.—Extending to June 1, 1923, time within which Canadian National Rys. may build roadway to the station and loading track at Sprague, Man., authorized by order 32,874, Sept. 20.

32,183, 32,184. Dec. 1.—Authorizing G.T.R. to use bridge over Y connecting its Toronto Branch with its main line from Hamilton to London; and bridge over its London Branch and C.P.R. Guelph Branch at Burlington Heights, Ont.

32,185. Dec. 2.—Limiting publication of notice of British Columbia Telephone Co.'s application for sanction of agreement with B.C. Telephone Co., Ltd., for transfer of its undertaking, prop- erty and assets.

33,186. Dec. 1.—Authorizing Canadian North- ern Ry. to divert its line between Frederica St. and Neebing Ave., Fort William, Ont., mile 6.68 to 8.06, and to build new second track and diverted line across a number of streets.

33,187, 33,188. Dec. 4.—Authorizing C.P.R. to build spurs for Lumber & Ties, Ltd., at mile 79.68, Parry Sound Subdivision, and for Provin- cial Reformatory, at Speedwell, Ont.

33,189. Dec. 1.—Authorizing Halifax & South Western Ry. (C.N.R.) to build spur for M. W. Graves & Co., at mile 66.87, Bridgetown, N.S.

33,190. Dec. 1.—Ordering Niagara, St. Cath- arines & Toronto Ry. to commence work relocat- ing its line on Oak and Merritt Sts., Merriton, Ont.

33,191, 33,192. Dec. 4, 5.—Declaring that for the present Canadian National Rys. crossings near Winter, Sask., and near Italy Cross, N.S., are protected to Board's satisfaction.

33,193. Dec. 5.—Authorizing British Columbia Public Works Department to build highway cross- ing over Great Northern Ry. at Gateway, B.C.

33,194. Dec. 4.—Approving revised location of portion of Interprovincial & James Bay Ry. (C.P.R.) from mile 48.01 to 49.05, and from mile 0 to 3.59, Ville Marie Spur, Duhamel Tp., Ont., and authorizing crossing of several highways.

33,195. Dec. 1.—Dismissing application of City of Westmount, Que., for order directing express companies to make deliveries in territory north of The Boulevard.

33,196. Dec. 6.—Authorizing C.P.R. to build two additional tracks across Second St., Yorkton, Sask.

33,197. Dec. 6.—Authorizing C.P.R. to carry traffic over portion of its Weyburn-Lethbridge Line from mile 314.2 to 351.04.

33,198. Dec. 6.—Approving agreement between Bell Telephone Co. and Drummondville Telephone Co., Drummond, Bagot and Yamaska counties, Que.

33,199. Dec. 6.—Declaring that for the present, Canadian National Rys. crossing at Minard, Sask., is protected to Board's satisfaction.

33,200. Dec. 6.—Declaring that for the present, Esquimaux & Nanaimo Ry. crossing of Island Highway, 2.4 miles south of Chemainus, B.C., is protected to Board's satisfaction.

33,201. Dec. 6.—Declaring that for the present, C.P.R. crossing at mile 22, Kisbey Subdivision, in rural municipality 65, Sask., is protected to Board's satisfaction.

33,202. Dec. 6.—Authorizing G.T.R. to build spur for Independent Concrete Pipe Co., near Cheyenne Ave., York Tp., Ont.

33,203. Dec. 6.—Approving agreement between Bell Telephone Co. and Atherley Telephone Asso- ciation, Ontario county, Ont.

33,204. Dec. 5.—Extending to July, 1924, time within which Canadian National Rys. may install swing gates in place of slide or hurdle gates in fences on its Saguenay Subdivision, Que.

33,205. Dec. 9.—Authorizing Michigan Central Rd. to build spur for Canadian Shredded Wheat Co., across Lewis Ave., Niagara Falls, Ont.

33,206. Dec. 11.—Declaring that for the pres- ent, Michigan Central Rd. crossing 3 miles east of Welland Station, Ont., is protected to Board's satisfaction.

General order 372. Nov. 24.—Relieving, until further order, made either upon application, or by Board of its own motion, and without notice, if it shall be deemed necessary or desirable, rail- way companies from complying with requirements of par. 3 of general order 326, Jan. 14, 1921, of obtaining from Bank of Montreal rate of ex- change for New York funds at time and dates specified in said order, and making monthly returns to Board showing amount of surcharges collected.

Telegraph, Telephone and Cable Matters.

Canadian National Telegraphs have opened offices at Desbien, Que., Cavell and Pass Lake, Ont., and Lintlaw, Sask., and have closed offices at Agate and Bankfield, Ont.

H. M. Short, for eight years United States representative of Marconi Inter- national Marine Communication Co., is reported in a Montreal press dispatch to have been appointed Managing Director, Marconi Wireless Telegraph Co. of Can- ada at Montreal, succeeding A. H. Morse, resigned, effective Jan. 10.

A heavy storm in Cape Breton, N.S., at the end of November, did \$160,000 damage, the chief sufferers being the Maritime Telegraph & Telephone Co., \$75,000; Western Union Telegraph Co., \$50,000; C.P.R. Telegraphs, \$10,000, and Cape Breton Electric Co., \$20,000. A practical repetition of the storm occur- red, Dec. 13, when considerable additional damage was done to overhead wires.

The Western Union Telegraph Co. is reported to have announced the building of a telegraph line between New York and Chicago, and for this purpose, will make use of the Michigan Central Rd. right of way through Canada. The sys- tem will consist of 9 wires, and the business will be looked after by M.C.R. telegraph officials. It is stated that con- struction will commence early this year.

An action against the Great North- western Telegraph Co. (now Canadian National Telegraphs), by the Montreal Fruit Exchange, for \$390 damages, sus- tained owing to alleged delay in the delivery of a telegram at Los Angeles, Cal., was dismissed by Mr. Justice Duclos, at Montreal, Dec. 4, on the ground that the sender of a telegram is only ensured of delivery when he has the message repeated and pays the fee therefor. The conditions on the tele- gram form are a part of the contract and binding on the sender, and under these, the company is not liable for any damages arising from failure to trans- mit or deliver, or for error in any unre- peated telegram, beyond the amount received for same, and to guard against errors, the company will repeat back any telegram for the additional payment of half the regular rate, and it is not responsible for the act of any other com- pany. The company received \$1 for the transmission of the message, and had tendered this amount, plus \$5.50, the

costs of the action, after filing the plea, which was sufficient. The action was dismissed with all costs subsequent to the filing of the plea.

Henry Hulatt, who has resigned as Manager of Telegraphs, G.T.R., Mont- real, was born in London, Eng., Feb. 15, 1883, and after being engaged in com- mercial and journalistic work in Eng- land, and for a short time in the House of Commons press gallery at Ottawa, entered railway service, May 3, 1907, since when he has been, to March 1, 1908, clerk, Stores Department, Canadian Northern Ry., Winnipeg; March 1, 1908, to Oct. 1, 1910, secretary to Manager of Telegraphs, Grand Trunk Pacific Ry., Winnipeg; Oct. 1, 1910, to Jan. 15, 1913, chief clerk to Manager of Telegraphs, G.T.P.R., Winnipeg; Jan. 15, 1913, to Oct. 15, 1915, Commercial and Traffic Superintendent, G.T.P. Telegraph Co., and Superintendent of Time Service, G.T.P.R., Winnipeg; Oct. 15, 1915, to Dec. 1, 1922, Manager of Telegraphs, G.T.R. System, and to March 8, 1919, Manager and director, G.T.P. Telegraph Co., and Superintendent of Time Service, G.T.P. R., and from Jan. 1, 1916, to Dec. 1, 1922, also Superintendent of Time Ser- vice, G.T.R., Montreal. He is an asso- ciate member of the Institute of Elec- trical Engineers of England, and of the American Institute of Electrical Engi- neers. He was chairman of the Ameri- can Railway Association, Telegraph and Telephone Section, in 1920-21, and had previously acted on several of the com- mittees. He has joined the Alexander Hamilton Institute, New York, and will leave shortly for London, Eng., to take charge of editorial work in connection with the revision of the Institute's edu- cational course, to make it applicable to English conditions, after which he will take part in the development and super- vision of the Institute's activities in Great Britain.

Among the Express Companies.

The Board of Railway Commissioners passed order 33,154, Nov. 27, approving Supplement D to Express Classification for Canada No. 5.

Canadian National Ex. Co. has opened offices at Flat Lands, N.B., Alonsa, Man., and Peesane, Sask., and has closed its offices at MacDiarmid, Ont.

R. E. M. Cowie, Vice President, Ameri- can Railway Ex. Co., addressed the Canadian Club in Montreal, Dec. 4, on the origin and development of express business.

The Canadian National Ex. Co. has opened offices at Desbien, Que., and Allanwater, Ont., and has changed the name of its office at Bedson, Alta., to Miatte.

The American Ex. Co. is reported to have chartered the s.s. Mauretania, for a Mediterranean cruise, under its man- agement, sailing from New York, Feb. 10.

T. E. McDonnell, Vice President and General Manager, Dominion Express Co., addressed the Knights of Columbus, at their usual weekly luncheon in Tor- onto, Dec. 11, on "Why is an express company?"

The Board of Railway Commissioners has refused an application from the City of Westmount, Que., for an order direct- ing express companies to deliver parcels by wagon service in territory north of the Boulevard, Westmount.

Electric Railway Department

The Toronto Transportation Commission's Work.

Appropriations.—The City Council has granted the Toronto Transportation an appropriation of between \$800,000 and \$900,000 to cover cost of acquiring and renovating the old Board of Trade Building and adjoining properties, at Front and Yonge Streets, where the Commission's headquarters are now located, and an appropriation of \$1,500,000 to add to the \$1,000,000 before appropriated for the purpose, to construct a car repair shop, frog shop, boiler house, a stores department building, to be used jointly by the Transportation Commission and the Toronto Hydro Electric Commission, an office building, and tracks and overhead work at Bathurst St. and Davenport Road. Prior to the date on which these latest appropriations were made, the Commission had been granted appropriations totalling \$21,000,000, none of which was in connection with the price to be paid the Toronto Railway Co. for its undertakings turned over to the city for operation by the Commission.

The Car Repair Shops and auxiliary facilities to be built at Bathurst St. and Davenport Road have been planned by the Commission for some time past. We are officially advised that it is the intention to call for tenders for building them, in the near future, and it is anticipated that construction will be well under way in the spring.

The Eglinton Car House, a detailed description of which was given in Canadian Railway and Marine World for Nov., 1922, pg. 574, was opened on Dec. 16, 1922. An invitation to citizens to attend was issued by the Commission, and speeches were made by the Mayor of Toronto, who officially declared the car-house ready for operation, and by P. W. Ellis, Chairman of the Transportation Commission. After the addresses had been delivered, an inspection of the various facilities was made. The new car house is thoroughly modern in every detail, the operating units having been planned so that cars can be handled with the minimum of lost motion and with maximum economy. It replaces the Yorkville car house in accommodating cars operating on the Yonge St. route, the change to the new house having been effected about Dec. 15.

Agitation for Construction of Cars by Commission.—The Toronto Building Trades Council, in a letter to the Board of Control, in which attention was called to the amounts the Commission has spent outside the city for equipment, has revived the question of the Commission erecting a car building plant and building its own cars, and, possibly, cars for other electric railways. This matter was discussed shortly after the Commission took control of the lines within the city, and it was pointed out at the time that the number of cars required would not justify the capital expenditure which would be necessary to enable the Commission to build its own cars. There is no reason to believe that the situation has undergone any change, and it is unlikely that the proposals to have the Commission go into the car building business will receive any serious consideration.

The Kingston Road Extension, from Queen St. to the eastern city limits, at

Victoria Park Ave., details of which were given in Canadian Railway and Marine World for Dec., 1922, pg. 630, was completed and placed in operation Dec. 2, 1922. A shuttle service is being operated on the extension, with cars operating 5 minutes apart throughout the day, and 3 minutes apart in rush hours. It is probable that this service will be continued till road repairs are completed in the spring, when consideration will be given to operating a service from Victoria Park Ave. to the center of the city.

The Loop at Victoria Park Ave., details of which were given in Canadian Railway and Marine World for Dec.,

extension and rehabilitation programme embarked upon in Sept., 1921, when the Toronto Ry. Co. lines and the Toronto Civic Ry. lines were placed under the Commission's control, is now completed. The large extra force of laborers employed during the construction season just closed has been disbanded, and track work in the future will be almost entirely confined to the usual maintenance.

Hydro Electric Power Distribution, Etc., in St. John, N.B.

Following the result of the municipal elections in St. John, N.B., on Nov. 13, when a council favorable to the execution of a contract with the New Brunswick Government for a supply of current from the Musquash hydro electric power plant, and its distribution by the city, the council has approved of the contract with the New Brunswick Hydro Electric Power Commission. An estimate was submitted to the council for the installation of a power distribution plant in St. John, the approximate cost being \$599,000.

The Mayor advised the council, Nov. 27, that he had written the New Brunswick Power Co., offering to buy out the company's property on the basis of the value put upon it by the New Brunswick Supreme Court, viz., \$2,577,655. The company advised him, Dec. 4, that it could not accept the offer, but expressed its willingness to sell its property on an arbitration basis.

The city council subsequently appointed a civic hydro electric commission, as authorized by the N.B. Electric Power Act, to serve for two years, to supervise the distribution of power in St. John. This commission organized Dec. 7, with Major R. A. McAvity as Chairman; H. Phillips, M.I.C.E., Secretary, and G. Kribs, Electrical Engineer. It was decided to prepare plans for the erection of a substation.

Quebec Railway, Light Heat & Power Co. Legislation.

The Quebec Legislature has had before it, bills for the incorporation of the Quebec Tramways Co., the Quebec Power Co., and the Quebec Gas Co., drawn along the lines mentioned in the official notices summarized in Canadian Railway and Marine World for Nov., 1922, pg. 579, the applicants in each case being: E. A. Robert, C. G. Greenshields, Lt.-Col. J. E. Hutcheson, K. B. Thornton and Hon. D. O. L'Esperance, all directors of the Quebec Ry., Light, Heat & Power Co. The three bills were given a second reading in the Legislative Assembly Nov. 22, and referred to the private bills committee, which did not meet to consider them until Dec. 12, when it was stated that the applicants had decided to withdraw them, and to substitute two bills, one to incorporate the Quebec Tramways & Gas Co., with authorized capital of \$5,000,000, to take over the Quebec County Ry., and various subsidiary railway and other companies owned by the Quebec Ry., Light, Heat & Power Co., and the second, the Quebec Power Co., with 100,000 shares without nominal value.

Canadian Electric Railway Association.

Honorary President, E. A. Robert, President, Montreal Tramways Co., and Quebec Ry., Light, Heat & Power Co.

Honorary Vice President, Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co.

Honorary Council, Thos. Ahearn, President, Ottawa Electric Ry.; Acton Burrows, Proprietor, Canadian Railway and Marine World; Geo. Kidd, General Manager, British Columbia Electric Ry.; Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., and director, Quebec Ry., Light, Heat & Power Co.

President, Major F. D. Burpee, Manager and director, Ottawa Electric Ry.

Vice President, H. H. Couzens, General Manager, Toronto Transportation Commission.

Executive Committee, The President, the Vice President, the immediate past President (G. Gordon Gale, Vice President and General Manager, Hull Electric Co.) and D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; D. W. Houston, Superintendent, Regina Municipal Ry.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; R. Mayne-Read, Superintendent, Quebec Railway, Light & Power Co.; W. R. Robertson, General Superintendent of Railways, Hydro-Electric Power Commission of Ontario; W. L. Weston, Manager, Nova Scotia Tramways & Power Co.; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

Treasurer, W. S. Hart, Managing Director, Three Rivers Traction Co.

Auditor, Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Ry.

Secretary, D. N. Gill, Comptroller, Ottawa Electric Ry., Ottawa, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

1922, was built as originally planned by the Commission, despite the protests of various property owners in the neighborhood. After the Commission had been requested to change the location for the loop, and had refused, the Ontario Railway and Municipal Board was appealed to, and approved the location.

New Cars.—As stated in Canadian Railway and Marine World for Sept., 1922, pg. 473, the Commission ordered an additional 50 motor car and 100 trailers from Canadian Car and Foundry Co., Montreal, and 50 motor cars from Ottawa Car Mfg. Co., Ottawa. We are officially advised that the first shipment of this new rolling stock, consisting of 5 motor cars, left the Canadian Car and Foundry Co.'s plant at Montreal for Toronto on Dec. 19, 1922.

Track Work.—The Commission's track

Report on Fort William Municipal Railway.

The Fort William, Ont., City Council's public utilities committee, which manages the municipal railway, has for some time past been giving special consideration to the continuing operating deficits. In Sept., 1922, the committee decided to engage G. L. Guy, consulting electrical engineer, Winnipeg, to report generally on street railway matters, and this decision was approved by the city council, in a resolution stating that he be engaged as "managing expert," for 10 days from Oct. 1. In his report, dated Nov. 10, he says that during the time he was in Fort William, he "examined and studied the construction, operation and financial status" of the railway. The report with tables covers 60 pages, and deals with the history of the railway from 1908, when it was acquired by the city from Port Arthur City Council. From Aug. 1, 1908, to Dec. 1, 1913, it was operated by a joint commission, and since then it has been operated by the City Council's public utilities committee. The line has a total single track length of 20.555 miles, of which 18.360 miles are being operated. There was abandoned in 1914, four short lengths of track, totalling 1.8 miles, and there has been built since that date, 2.16 miles of new track. The city owns 18 motor cars and 5 trailers, and has a modern fireproof construction car house, very well equipped. The present value of the physical property of the railway is stated as \$579,919.11, and the reproduction cost is estimated at \$728,228.50. The value of the intangible property is given at \$120,284.64. There have been issued in connection with the railway property \$1,317,000 of debentures, of which \$225,000 were issued in 1913 to take care of deficits, and \$25,000 in 1911 for paving. Mr. Guy states that the practice of providing for deficits by the issue of debentures is not in accordance with proper financing, and that paving charges are a survival of the old horse car franchises, which should not have been handed on.

He estimates that the utility should provide a depreciation reserve of 4.473% of the total investment, in addition to 4.825%, the average rate of interest payable on debentures. The utility should earn \$78,894.75, above operating charges, to be self-sustaining. An examination of the railway's finances from 1914, shows that the railway has always more than paid its operating expenses, but has never been able to earn fixed charges. With the institution of one-man cars, the revision of the traffic schedules, the elimination of certain employees, and the reorganization of the civic utilities on lines worked out on schedules attached to the report, he estimates that the operating charges will be reduced by \$33,000 a year. The gross earnings, following the general trend of increase, ought to approximate \$200,000; and he estimates the net operating revenue for 1923 at approximately \$35,000. The total debenture issue, in comparison with the value of the physical property and the intangible property, shows overcapitalization, and he recommends, in the interests of the city and of the railway, that the city council provide out of current revenue \$35,000 a year for 15 years.

The section of the report dealing with reorganization of the several public utilities under the charge of the public util-

ities committee, recommends placing the whole of the utilities under one manager, who shall direct the whole, and shall deal with the City Engineer regarding track construction and repairs; the City Solicitor regarding legal matters, and the City Treasurer regarding finances; the electric railway department to be under the charge of a superintendent for operation; the overhead construction and repairs to be looked after by the electric light and power department. The schedules attached show that in several instances the departments are over-staffed in proportion to other railways.

Mr. Guy states that in order to effect savings and put the railway on a more nearly self-sustaining basis, the public must be prepared for a lowering of the standard so far as the frequency of cars is concerned, until such time as business and population increase.

Toronto Suburban Railway Purchase.

As stated in Canadian Railway and Marine World for December, 1922, pg. 634, the Toronto City Council passed a bylaw confirming an agreement with the Hydro Electric Power Commission of Ontario providing for the purchase of the Toronto Suburban Ry. from the Dominion Government. At a meeting of the council Nov. 20, the Board of Control asked permission to introduce bylaws to authorize the issue of debentures for carrying out the agreement. The report states that the agreement calls for the issue of one set of debentures for \$2,778,000, to be deposited with the Hydro Electric Power Commission of Ontario before the acquisition of the railway; and for the issue of the second set for \$202,800, to be delivered to the Commission upon transfer to the city of such portions of the railway purchased as are within the city limits. The Board of Control pointed out that these debentures may be issued by the city without a vote of the electors. The Council passed the Board's report without amendment.

The Governor in council, on Nov. 24, approved of a report of a committee of the Privy Council dealing with this matter. The report detailed correspondence between Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, and the Minister of Railways, also other letters relative to the matter, and concluded with a statement from the Canadian National Rys. management to the effect that the Toronto Suburban Ry. proposal is practically a three months option to the Hydro Electric Power Commission to acquire the 15,000 fully paid \$100 shares of the T. S. Ry. Co. on the following terms: Assuming the existing bonded indebtedness of \$2,628,000, with interest from the date of transfer of the stock; paying \$36,149 for capital expenditures made since Nov. 1, 1921, to Nov. 1, 1922, and similar expenditures to date of transfer; paying the deficit in operation of lines in Ward 7 and adjacent lines under operating agreement, approximately \$44,000; adjusting current assets and liabilities as of date of transfer; and executing traffic agreement to turn over to the Canadian National Rys. all unrouted traffic which cannot be handled to destination by the T.S. Ry. Payments for

the line, etc., may be deferred for 6 months by the purchaser paying 6% and giving a lien on all rolling stock. Those terms, it was stated, had not then been accepted. The Minister of Railways recommended that the sale of the railway be approved, the exact terms and conditions of sale to be determined by the Canadian National Rys. management. The Privy Council Committee's report was approved and passed as an order in council.

Electric Railway Track Laid in 1922.

During 1922, according to returns made to Canadian Railway and Marine World, and other information at hand, Canadian electric railways laid 12,512 miles of new road, or point to point, track, exclusive of second track and sidings, of which 8.38 miles were extensions completed by Toronto Transportation Commission. The total new road mileage laid in 1921 was 7,757 miles. Following are detailed figures, the mileage for the Kitchener & Waterloo St. Ry. being estimated:—

	Miles	Miles
British Columbia Electric Ry.—		
Broadway West, Vancouver.....		1.00
*Kitchener & Waterloo St. Ry.—		
Albert St. to city limits, Kitchener, Ont.		1.00
Montreal Tramways Co.—		
Church St., Drake to Wellington St.	0.71	
Bordeaux spur	0.16	
Red Star refineries spur.....	0.09	
		0.96
Quebec Ry., Light & Power Co.—		
St. Valier St. and Bells Lane extension	0.46	
Charlebourg Road extension.....	0.42	
Marguerite-Bourgeois extension.....	0.15	
Loops and sidings.....	0.04	
		1.07
Regina Municipal Ry.—		
Edward St. line extension.....		0.10
Toronto Transportation Commission—		
Kingston Road, Queen St. to eastern city limits.....	1.799	
Lake Shore Road, Roncesvalles Ave. to Humber River.....	1.406	
Main St., Gerrard St. to Danforth Ave.	0.270	
Dovercourt Road, Van Horne St. to Davenport Road.....	0.313	
Bay St., Bloor St. to Davenport Road	0.224	
Carlaw and Pape Avenues, Gerrard St. to Danforth Ave.....	0.878	
Yonge St., Woodlawn Ave. to north city limits.....	3.492	
		8.382
Total.....		12.512

In addition to the track laid as mentioned above, the British Columbia Electric Ry. Co. laid about 1,500 ft. of second track in Vancouver; the Kingston, Portsmouth & Catarqui Electric Ry. did reconstruction work on 3,850 ft. of track in Kingston, Ont.; the Montreal Tramways Co. laid 1.09 miles of second track on Begg Ave., and 0.32 mile of second track on Wellington St., and the Ontario Hydro Electric Rys., Essex Division, did reconstruction work on 5 miles of track in Windsor and Walkerville, Ont. The Toronto Transportation Commission's new construction was all double track, and when sidings, tail tracks, etc., are considered, the Commission's total track construction in 1922 was 15,959 single track miles. In addition to that, 33 pieces of special work, containing 2,320 single track miles of steel, were laid, and track laid in connection with car houses and yards, material storage yards, etc., amounted to 6.64 single track miles. In addition, 27,431 single track miles of track were rehabilitated, i.e., the track was completely renewed from subgrade to top of rail, while major repairs were effected on 19,099 single track miles of track.

Ottawa Electric Railway Franchise and Purchase Questions.

Ottawa City Council decided recently to submit two questions to the people at the annual municipal elections, Jan. 1, dealing with the Ottawa Electric Ry.'s future. The first question is: "Are you in favor of the Corporation purchasing all the property and assets of the Ottawa Electric Ry. Co. at \$4,500,000, plus the cost of any capital expenditure incurred on and after July 31, 1922, and any other necessary expenditures, not to exceed in all \$75,000, to be operated by an independent commission?" The second question is: "Are you in favor of the Corporation granting the Ottawa Electric Ry. Co. a service-at-cost franchise agreement for 20 years from May 1, 1923, on the terms and conditions set out in the draft agreement, a synopsis of which was published in the city newspapers of Dec. 11, 18 and 26, 1922?" The first question will be answered by those qualified to vote on money bylaws, and the second one by the voters generally.

The proposed new agreement is very lengthy and provides for the surrender of the present franchise agreement and replacing it by one for 20 years from May 1, 1923; the construction of additional lines every year up to 1928; the operation of a stipulated number of additional cars each year up to 1928; and the purchase of additional snow-fighting appliances; the charging of the following fares: Cash 5c., from 6 a.m. to midnight, and 10c. between midnight and 6 a.m., with 8 for 25c. limited hour tickets, 7 for 25c. Sunday tickets; 40 for \$1 limited hour school children's tickets, and a 3c. fare for children under 52 in. high.; infants in arms free, with free transfers. The value of the company's property and assets is fixed at \$4,500,000, plus the cost of capital incurred after Nov. 1, 1922; additional capital expenditures to be added from time to time. The Corporation is declared to have a capital in the company of \$600,000, representing the value of the paving over and above what it would have cost for ordinary traffic. Out of earnings the company is to set aside, after paying operating expenses, 4% of the capital value of its perishable assets, to a depreciation fund, \$20,000 a year as a general reserve fund, until \$100,000 is accumulated, at which sum it is to be maintained, and 7½% on the capital value of the company's property and the city's interest. Of any balance remaining the company is to retain 60%, to dispose of at its discretion, the remaining 40% to be paid into a special account to be used for the reduction of fares. Provision is made for an annual revision of fares on specified schedules, when necessary for the purpose of securing the returns above specified; for the appointment of a civic commissioner to be paid by the company to see that the agreement is carried out; for the arbitration of differences, and for appeals to the Board of Railway Commissioners. The city may give notice to purchase the property at the end of any five-year period at the capitalized value of \$4,500,000, plus subsequent capital expenditures, and in the event of the Corporation not purchasing at the end of the 20 years, the agreement will continue, subject to the Corporation's right to buy at the expiration of any 10 years thereafter.

We are advised that, while the principles contained in the proposed agreement are satisfactory to the company, there are a number of matters in regard

to which changes will be asked before it is signed.

The city council has received a bill for \$10,000 from the Hydro Electric Power Commission of Ontario, for the services of T. U. Fairlie, of its engineering staff, in connection with the valuation of the company's property for the purpose of the agreement. The Mayor is stated to have advised the Board of Control Dec. 12, that money would have to be found for the payment of the account forthwith.

One-Man, P-a-y-e Cars for London Street Railway.

The London St. Ry. gave an order recently for 5 one-man, pay as you enter, single end, double door, safety cars of the Lancaster type, which is somewhat heavier than the standard Birney type. They will have straight sides, round ends, arch roof, stationary top sash, lower sash to raise, platform floor on same level as body floor, folding doors and steps, 2-motor electrical equipment and air brakes with safety features. The general equipment will include 600 watt single coil truss plank electrical heaters with thermostat control, exhaust ventilators in roof; stationary cross seats on left hand side, and balance of seats arranged longitudinally; incandescent headlights, Ohio Brass Co.'s trolley catchers, illuminated destination signs, sand boxes, H.B. type lifeguards, Westinghouse single end air brake and safety equipment, Westinghouse 35 h.p. 2-motor equipment single end control; Brill 79-E-1 standard safety car trucks with friction bearings, 8 ft. wheel base, chilled cast iron wheels, 26 in. dia. The order was given to Canadian Brill Co., Preston, Ont., but when that company discontinued business and withdrew from Canada, it was transferred to the J. G. Brill Co., Philadelphia, Pa.

The Ontario Railway and Municipal Board, on Dec. 4, authorized the London St. Ry. to operate one-man p.a.y.e. cars on its lines, subject to such regulations as may be prescribed by the Board of Railway Commissioners regarding the operation of the cars over steam railway crossings.

Toronto & York Radial Railway Offices Changed.

In consequence of the Toronto & York Radial Ry. lines having, in connection with the Toronto "clean up deal," passed under the Hydro-Electric Power Commission of Ontario's control, and being now known as the Hydro-Electric Railways, Toronto and York Division, under the jurisdiction of W. R. Robertson, General Superintendent of Railways, Hydro-Electric Power Commission, the general offices, which have been at 84 King Street East, Toronto, for a number of years, have been removed to one of the Hydro-Electric Power Commission's buildings at 110 Elm St., where the following officials are located: Assistant Manager, C. L. Wilson; Resident Engineer, C. P. Van Norman; Traffic Manager, F. S. Livingston; Electrical Engineer, W. B. Boyd; Superintendent, All Lines, C. W. Mott; Superintendent, Metropolitan Division, L. P. McClelland; Superintendent, Scarboro Division, John Break; Superintendent, Mimico Division, J. F. Deadey. The Accounting Depart-

ment has been removed to another H.E.P. Commission building at 59 Murray St. The Master Mechanic, A. M. Smith, and the Purchasing Agent, G. K. Hyde, remain at 1440 Yonge St.

London Street Railway Purchase Proposal Defeated.

The London, Ont., City Council, as a result of the recommendation of its specially appointed transportation commission, submitted to the voters at the municipal election on Dec. 4, the question: "Are you in favor of acquiring the London St. Ry. under bylaw 916?" The votes were: 4,269 against buying the property and 3,843 in favor of it.

The city's commission recommended the purchase of the railway on the expiration of the franchise on Mar. 8, 1925, and that it be operated by a civic commission. The estimated cost of purchasing the railway, modernizing it and building certain extensions, was estimated by A. E. K. Bunnell, electrical engineer, at \$2,600,000.

Following the decision to submit the question, the Mayor and aldermen inaugurated a campaign to secure a favorable answer to the question. Mayor Wilson is reported to have stated in a speech, that there had been a demand made by ratepayers to know how much of the \$2,600,000 it was proposed to pay the company for the railway. The property would be bought by the council, but the price would be fixed by arbitration. However, he could say that the valuation placed on the property by the engineer was \$553,000 as a minimum, and \$905,000 as a maximum. The amount proposed to be expended upon rehabilitation was not to be spent at once, but would be spread over several years after the acquisition of the road. The engineer's report showed that the earnings of the railway would pay interest on the bonds and provide a sinking fund which would pay off the indebtedness in 30 years. This would be possible with a 5c. cash fare, and 6 tickets for 25c.

Sir Adam Beck, who was a member of the special transportation commission, also took part in the campaign, and was reported to have said in one of his speeches, if the city did not buy the railway at once, it would have to wait another seven years for the opportunity to do so. The company was paying a 6% dividend on its common stock, but he thought it would be paying 10% in a few years. Mr. Bunnell's report was the most simple and conclusive he had ever seen. If the city bought the railway, there would be a 4c. fare before very long. The value of the railway would be determined on actual equipment, property, works, including pavements, on a cost having regard to the best kind and system of railway in existence in March, 1925. No profits, or rights, or privileges would be taken into consideration. The minimum cost of the road was estimated by the engineer at \$533,000, and the maximum cost at \$905,000; and \$1,250,000 had been added to the latter amount for rehabilitation. He criticized the suggestion to operate bus lines, and advised the operation of the street railway by electricity.

Press reports state that the directors, on Dec. 8, considered the position of affairs, and that the President stated on Dec. 11, that the company would make some changes in routing as suggested in Mr. Bunnell's report, and would also abandon the Rectory St. line.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—The recently completed agreement between the company and the Vancouver City Council, calls for the completion of work on new tracks to be built within a year at a cost of \$105,000; the contribution of \$10,000 towards the removal of Main St. bridge, and the repaving of the street, and the expenditure of \$250,000 during the next five years on putting the company's wires underground. The track extension referred to includes the laying of permanent tracks on Fraser Ave., from Kingsway to 25th Ave.; re-laying tracks on Hastings Ave. from Granville St. to Homer St., and laying permanent tracks east of the Hastings St. viaduct.

A new automatic substation will, a press report states, be erected on Bodwell Road, between Main and Fraser Sts., Vancouver, at an estimated cost of \$65,000. The substation will be a solid brick structure, and will be equipped with the usual transformer and a rotary converter of 1,000 k.w. capacity, supplying the South Vancouver railway lines with current at 550 volts. It is expected the new structure will be completed within six months. (Dec., 1922, pg. 633.)

Montreal Tramways Co.—We are officially advised that the company has under way about 11.6 miles of reconstruction of tracks, and about 3.1 miles of track extension. It is arranging for the reconstruction of about 8 miles of track, and for the construction of about a mile of track extension. The company will be in the market early in 1923 for 900 tons of 115 lb. No. 508 rails, for use in this work. We are also advised that the company has under construction an additional two stories to its office building.

Lachine, Que., City Council is reported to have decided Dec. 7, to take up with the Montreal Tramways Commission the question of the extension of the Windsor-Montreal West line to Ville St. Pierre and the western suburbs of Lachine. (Nov., 1922, pg. 581.)

In a bill introduced in the Quebec Legislature recently to amend the Montreal city charter in several particulars, sec. 15 provided to authorize the city council to allow the Montreal Tramways Co. to build and operate tramway lines on a part of Mount Royal Park specifically described. Considerable opposition to this section developed, as the bill was considered, resolutions from a number of public bodies in the city protested against it being presented, and the section was dropped when the bill was in committee.

Niagara, St. Catharines & Toronto Ry.—The Board of Railway Commissioners has directed the company to re-locate its lines on Oak and Merritt Streets, Merritt, Ont., and to pay its share of the cost of paving them, the work to start in March.

Nipissing Central Ry.—Application is being made to the Dominion Parliament for an act extending the time for the completion and putting into operation of the lines authorized to be built by the company's act of incorporation, Statutes of 1907, chap. 112. The lines authorized were as follows: From Latchford, Ont., to Blanche Lake, thence northerly to Windigo Lake, and on to a junction with the National Transcontinental Ry. at the Metagami River, Que.; from Latchford along the Montreal River val-

ley to Willison Tp., thence northerly to a junction with the National Transcontinental Ry. in Quebec Province; from Latchford southerly to a junction with the Timiskaming & Northern Ontario Ry. at Timagami, Ont.; from Liskeard westerly to meet line no. 2; from Windigo Lake westerly to the Timiskaming & Northern Ontario Ry.; from Liskeard to Charlton, Ont.; from the first mentioned line in Casey Tp. to North Timiskaming, on the Des Quinze River, Que. The authority to build these lines was extended from time to time, the last extension being in 1918, for five years. The lines built serve Haileybury, Cobalt, and Liskeard, Ont., and include a section of the Timiskaming & Northern Ontario Ry., the total mileage operated being 15.37 miles. The line is operated for the Ontario Government by the Timiskaming & Northern Ontario Ry. Commission. (Jan., 1922, pg. 42.)

Quebec Ry., Light & Power Co.—We are officially advised that the company completed during 1922 three extensions of line in Quebec City, viz.: St. Valois St. and Bell's Lane, 0.46 mile; Charlesbourg Road, 0.42 mile; and Marguerite-Bourgeois, 0.15 mile; and that it also laid 230 ft. of loops and sidings.

Regina Municipal Ry.—A loop to the stadium at Regina, Sask., has been completed, necessitating the laying of 0.1 mile of new track.

Sarnia St. Ry.—A press report states that Sarnia, Ont., Real Estate Board has asked the company to extend its railway.

Electric Railway Passenger Fares.

British Columbia Electric Ry.—The B.C. Attorney-General introduced in the Legislature, Dec. 9, a bill to regulate passenger fare rates chargeable by the B.C. Electric Ry. It provided that upon the application of any municipal council, within the limits of whose jurisdiction the railway operates, or of 100 provincial voters in any unorganized territory traversed by the railway, or of the company, as to rates, the Government may appoint a commissioner, or a commission (hereinafter referred to as the commission), under the Public Inquiries Act, to investigate the matter, the provisions of the act to govern the investigation, subject to the further provisions in the bill. The commission, after enquiry, may make an order fixing the rate or rates to be charged. In fixing the rate, the commission shall have due regard, among other things, to giving the company a reasonable return upon the value of its property; the commission may have an appraisal made of the value of the property, the costs of which are to be borne by the company. Except by an order of a commission, or upon an agreement with a municipality, with the approval of the Government, no change can be made in rates. The company shall not charge rates below those fixed by the commission, except reduced rates of mileage, excursion or commutation tickets; per hour charge for passenger cars, and free or reduced rates for the company's employees, public servants, school children, and others subject to the Minister of Railways' approval. Various sections regulate the proceedings before the commission; appeals against any order of a commission, provide a penalty

of not less than \$10 nor more than \$1,000 in case the company permits anything to be done contrary to the provisions of the bill, or the orders of a commission, and a penalty of not less than \$20 nor more than \$500 in the case of any person soliciting or receiving any rebate, concession or discrimination in respect of any passenger service. Other sections give a commission authority to regulate passenger service and rates, whether fixed by agreement or otherwise; declare that the general powers given to a commission are not limited by any provision of the present bill or by the Public Inquiries Act, and that the provisions of the bill are to prevail over contrary provisions in the Public Inquiries Act, or of any other general or special act.

London St. Ry.—A press report states that the directors decided, Dec. 8, to put on sale at an early date, probably Jan. 1, a strip of 22 tickets for \$1, good up to 8.30 a.m., and from 5 to 6.30 p.m. The present fare is 5c.

Regina Municipal Ry.—A recent Regina, Sask., press report stated that the question of the restoration of 5c. fares on the municipal railway was being made an issue in the election for members of the city council for 1923.

St. Thomas Municipal Ry.—The St. Thomas, Ont., City Council, on Dec. 5, discussed a proposal to restore 5c. fares on the street railway, and decided to retain the 7c. fare for the remainder of the year. It is said that the new council will consider the question.

Waterloo-Wellington Railway Sale Negotiations.

In connection with the company's application to Kitchener, Ont., City Council for the renewal of its franchise, which will expire in February, the council is reported to have given two readings on Dec. 4, 1922, to a bylaw to issue debentures for \$70,000 for the purchase of the line, for modernizing its track and equipment, and for putting it in condition to be operated by the city in connection with the Kitchener & Waterloo St. Ry. The price said to have been offered for the line is \$25,000, which W. H. Breithaupt, the President, said was too low, and suggested \$40,000. At a special meeting of the city council, Dec. 9, he asked that the whole matter be held over for a year, in order that he might have a valuation of the property made. This was agreed to, and it is said that the franchise will be extended for a year to permit negotiations to be completed.

The W.-W. Ry. is only 2.75 miles long and extends from Ahrens St., Kitchener, to half a mile beyond Bridgeport, and owns a right of way for a further half a mile. It has running rights over the Kitchener & Waterloo St. Ry. from the corner of Victoria and Ahrens Sts., to the corner of King and Albert Sts., Kitchener, approximately a mile, and buys its power from the Kitchener Light Commission. (Dec., 1922, pg. 633.)

Employees of Roger Miller and Sons, contractors, and of the Toronto Transportation Commission's Construction Department have endowed a cot in the Toronto Hospital for Sick Children, in memory of the late Fred R. Miller, who was a member of the Toronto Transportation Commission, and of the Hydro Electric Power Commission of Ontario.

One-Man Car Conversion and Operation in Port Arthur.

Port Arthur Civic Ry. has recently converted four 2-man cars, nos. 28, 30, 38 and 56 into 1-man cars, at its shops. The principal dimensions of the cars as converted are as follows:—

Length over bumpers.....	43 ft.
Length over vestibules.....	42 ft.
Length of front vestibule.....	6 ft. 6 in.
Length of rear vestibule.....	6 ft. 6 in.
Width.....	8 ft. 5½ in.
Height from rail to top of roof.....	12 ft.
Height from rail to top of trolley base.....	12 ft. 9 in.
Seating capacity.....	46

These cars are of the double truck type, and equipped with Westinghouse 101 B motors, D.I.E.G. air compressors, and K 6 controllers. In conversion, the control equipment was placed in what was formerly the rear vestibule, i.e., the direction of operation was reversed. This was done to take advantage of the larger rear vestibule space, and provide for both an entrance and an exit on the front platform. The original front end of the car, with its narrow vestibule, now forms the rear end, with a side door as an emergency exit. The cars are equipped with

manually, and so arranged that it interlocks the controller handle when the doors are open, in such a way that the doors must be closed before the car can be started. It is evident that the arrangement is an excellent one for prompt simultaneous loading and unloading of passengers.

Each car is equipped with a longitudinal seat and 7 transverse seats on each side of the central aisle. The cars are equipped with destination lights on the front of roof, 2 white lights indicating a car on the main line run between Port Arthur and Fort William, 2 red lights a car for the north belt line, 2 green lights for the south belt line, one red and one white light for the north belt line and Current River run, and one green and one white light for the south belt line and Current River.

Approval for the operation of these converted cars was received from the Ontario Railway and Municipal Board on Sept. 27. We are officially advised

pointed Superintendent of its Pinawa hydro electric plant, vice Hugh Smith, resigned to enter private business, as mentioned in our last issue.

R. J. Fleming resigned his position as General Manager, Toronto Ry. Co., on Dec. 11, and announced his candidature for the Toronto mayoralty, the election for which will be held on Jan. 1.

George Kidd, General Manager, British Columbia Electric Ry., addressed the Vancouver Kiwanis Club recently, on service.

C. J. Moors has been appointed Manager of Public Utilities, Fort William, Ont., with charge of Fort William Municipal Ry., vice A. L. Farquharson, resigned.

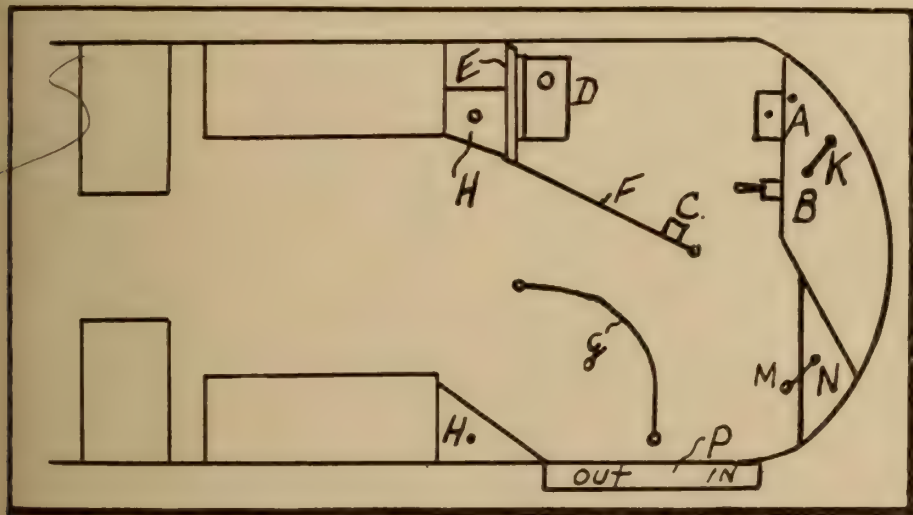
Lorne E. Moreland, who has been appointed Assistant Treasurer, Hull Electric Co., Hull, Que., was born at Ottawa, Ont., Apr. 19, 1895, and entered Hull Electric Co.'s service March 27, 1916, since when he has been, to Apr. 30, 1918, timekeeper; May 1, 1918, to Dec. 6, 1922, chief clerk, Hull, Que. He was also Secretary of the Canadian Electric Railway Association from Feb. 1, 1920, to May 31, 1921.

M. E. Morton, heretofore Traffic Manager, has been appointed Superintendent, Fort William Municipal Ry., Fort William, Ont.

Luke Robinson, who died as the result of injuries received in an automobile accident recently at White Plains, N.Y., was born at Whitby, Ont., July, 1867. He entered Toronto Ry. service in 1885, in the horse car days, and acted as motorman on the first electric car there on the electrification of the lines, and later transferred to the London St. Ry., London, Ont., under C. E. A. Carr, who sent him to Montreal in 1895 as Superintendent, Montreal Park & Island Ry., which position he retained until 1901, when he went to Paris, France, under the late Duncan McDonald, later General Manager, Montreal St. Ry., and worked on street railways in Paris suburbs. He returned to Montreal in 1903, as General Superintendent, Montreal St. Ry., and was later appointed General Manager, Dallas St. Ry., Dallas, Texas. He afterwards received an appointment with the Standard Varnish Co., which was controlled by the owners of the Dallas St. Ry., and left that company's service in 1919, when Manager of the Insulating Department. In 1921 he formed the L. Robinson Corporation, of which he was President and General Manager at the time of his death.

Winnipeg Electric Railway Franchise Extensions.—S. J. Farmer, independent labor candidate, was elected Mayor of Winnipeg on Nov. 24, 1922, by 16,493 votes against 12,591 for J. K. Sparling, who was chairman of the city council's special committee which negotiated the proposed franchise extension agreement with the Winnipeg Electric Ry. Co., a summary of which was given in Canadian Railway and Marine World for Dec., 1922, on pg. 631. The newly elected Mayor made his campaign largely on a proposal to submit the proposed agreement to a referendum before being approved of. The retiring city council, on Dec. 7, decided to leave over the agreement with the company, which had received its second reading, for the new council to deal with.

The Oshawa Ry. is considering the purchase of an electric freight shunting locomotive, and two passenger cars.



Front End Arrangement, Converted Cars, Port Arthur Civic Ry.

Brill 21E trucks, folding doors, and step for entrance, exit and emergency exit, doors and H-B fenders. In addition to seating capacity for 46 passengers, there is also standing room for 44, making a total carrying capacity of 90. Car 38 is equipped with Westinghouse safety equipment, comprising dead man control, door engine and automatic sander, but the remaining cars have not the dead man control feature, and their doors and steps are operated manually. The emergency doorst at the rear of the converted cars open from the inside only, by turning the lock handle and pushing the door. When the door is opened, the folding step is automatically lowered, and a buzzer rings at the front end of the car, and when the passenger leaves the step, the door closes automatically and the step folds up.

In the accompanying sketch showing the converted cars' front end arrangement, A represents the controller's location, B the brake valve, C the farebox, D the coal heater, E the steel cabinet controlling all electrical lighting, air motor and heating circuits, F and G, pipe rail, H the sand boxes and sanders, the latter operated by an air sander valve located in close proximity to the brake valve, K the door operating lever, M the hand brake, N the coal box, and P the folding step for the front entrance and exit door. The door lever at K is operated

that the new system of operation, and the cars used to furnish the 1-man service, are meeting with the entire approval of street car patrons and the citizens generally, and it is estimated that extension of the one-man service to the entire system will result in a saving of \$12,000 annually. A Port Arthur press report states that the first 15 days operation with the 1-man system showed a net saving of \$500, while another report states that fares collected in the seven days beginning Sept. 1, when the new system was instituted, were \$3,852, compared with \$3,582 during the last seven days in August. The latter figures were made public to silence statements to the effect that many of the fares were missed by the conductor-motorman with the 1-man system of operation.

Mainly About Electric Railway People.

C. C. Curtis, General Manager, Cape Breton Electric Co., is President of the Nova Scotia Accident Prevention Association, and W. L. Weston, General Manager, Nova Scotia Tramways & Power Co., represents the public utilities' interests on the general executive committee.

K. C. Ferguson, who has been in the Winnipeg Electric Ry's Electrical Department for some time, has been ap-

Flat Wheels, Their Cause and Prevention.

The Toronto Transportation Commission has issued to motormen a booklet of instructions dealing with the cause and prevention of flat wheels on street railway cars, as follows:—"Flat wheels are one of the greatest sources of annoyance to car riders, and to citizens residing on car routes or in their vicinity. It is apparent to every motorman that flat wheels cause damage to rolling stock and tracks; to remove the flats by grinding is a costly operation, and to renew the wheels, as is necessary in the case of bad flats, is a still larger expense. All motormen have received a training course before being placed in charge of a car. Special instructions have been given on the handling of the air brake equipment installed on the new cars, and also on the p.a.y.e. cars. If a motorman desires further instructions, or wishes to have explained to him the function of any part of the equipment, it will be gladly arranged by the divisional superintendents. The training school and mechanical department are at the service of men who wish to inform themselves on the electrical and mechanical parts of the equipment. To assist in acquainting motormen with the proper handling of the air brakes, A. B. Brown, Brake Expert, Canadian Westinghouse Co.; W. R. McRae, Superintendent of Rolling Stock, T.T.C.; and J. McCullough, Superintendent of Traffic, T.T.C., have prepared the following instructions:—

"As is well known, to reduce the speed or bring a moving railway car to a stop, the first step is to apply the brake shoes against the tread of the revolving wheels. This is accomplished by the aid of a system of brake levers, which equalize the braking forces applied to both trucks as well, as the brake shoe of each wheel. When in contact with the wheels, the brake shoes try to stop the turning of the wheels, but on account of the entire weight of the car resting on the wheels, an opposing, or pulling, force is at once created between the wheels and the rail, which, if sufficiently powerful, will cause the wheels to continue to rotate. The heavier the brake application, the greater is the pull or grip required by the rails in order to keep the wheels turning.

"The system of brake levers on a car is designed with the idea of preventing, as far as possible, the sliding of wheels, for it is well known that a car or train will run one third further when making a stop, if the wheels are sliding, than will be the case if the wheels can be kept rotating. From this it will be plain that what actually stops a moving car is the backward pull of the rail upon the wheels, produced jointly by the weight of the car, and the contact of the brake shoes with the wheels, and not the application of the brake shoes to the wheels alone, as is so generally supposed. As an illustration of this point, if the rails were greased just before the approach of a car, a heavy brake application on such a rail will simply lock the wheels and the car would skid along until brought to rest by some other influence than the brake. This brings us to a realization of the fact that the slippery condition of the rail found at certain seasons of the year is one of the most difficult problems confronting railway operators, particularly as the changes often take place with remarkable suddenness, being subject largely to weather conditions. Fortunately, long experience shows that the

liberal use of a coarse, sharp, grade of sand will improve the condition of a greasy rail, so that it will compare favorably with a clean dry rail. A successful motorman will make a careful study of rail conditions at all points on the route, and, when necessary, drop sand on the rails, the idea being to protect his own car as well as those following upon the same track. Moreover, he will report all conditions that cannot be corrected by this method. The proper method of sanding the rail for ordinary stops is to start the sand before the brake is applied, and allow it to continue running until the car is brought to rest. To apply the sand in any other way is very likely to lead to the flattening of wheels and their subsequent removal from the car.

"The amount of air pressure in the brake cylinder when the car is moving at low speed on a bad rail is an important factor in causing wheel sliding; that is to say, wheels will slide more readily with 40 lb. pressure in the brake cylinder when moving 10 miles an hour than would be the case if the speed was 20 miles an hour. The explanation is that the face of the brake shoe and tread of the wheel are composed of series of little hills and hollows, which engage at slow speed, in much the same manner as the teeth of two gear wheels, with the result that high friction is developed. When the wheel is revolving rapidly, this intimate engagement of the surfaces is not obtained, and therefore the retarding influence of the brake shoe is appreciably less. The well trained motorman knows from experience that the above statement is correct, and, when stopping the car, will invariably admit a high pressure to the brake cylinder (indicated by red hand of the air gauge) when the car is running fast, and gradually reduce the pressure as the speed of the car reduces, and endeavor to have the red hand of the air gauge show no pressure in the brake cylinder when the car stops. As an example, suppose the highest pressure required in the brake cylinder during an ordinary stop is 35 lb.; the correct method is to admit the 35 lb. to the brake cylinder at once, and then step the cylinder pressure down to a few pounds at a time, as the speed of the car, and the motorman's judgment, dictate. This method does not involve the taking of any chances; it simply has for its purpose the avoidance of any tendency of wheel sliding, by the employment of a high brake cylinder pressure when speeds are high, and the insurance of a low cylinder pressure when speeds are low. This method of braking has an additional advantage in that very much smoother stops will be made, which will add to the passengers' comfort and be an inducement to them to leave their seats as the car approaches their street and be ready to get off promptly when the car finally comes to rest.

"Of course, in cases of emergency, the brake must be applied quickly and fully, regardless of possible damage to wheels by sliding. Under such circumstances, however, the reverse key should not be pulled back if the brake is operating properly, as the load imposed by the brake shoes alone is all that the rotating wheels can comfortably bear without sliding. Every case of emergency application of brakes caused by carelessness of pedestrians, drivers of trucks, etc., should be

promptly reported, regardless of whether wheels are flattened or not. Such reports will aid the management in its campaign of urging greater caution upon the public's part in this respect. After all is said and done, the vigorous use of the gong, especially approaching narrow streets, is probably the most effective means of avoiding the necessity for many emergency brake applications, with the unpleasant circumstances usually attending the same.

"Messrs. Brown, McRae and McCullough have clearly outlined in the foregoing paragraphs the proper method of handling a car so as to avoid flat wheels. Motormen are earnestly requested to follow the procedure as outlined, in order to abate the flat wheel nuisance, which results in unnecessary waste of money, causes much inconvenience to the public, and casts a serious reflection on the service in which we are all so much interested."

Electric Railway Notes.

The Cape Breton Electric Co. is considering the purchase of 5 or 6 Birney safety cars.

Hull, Que., City Council is reported to have passed a resolution Dec. 4, requesting the Hull Electric Co. to cease operating one-man cars on the Wrightville line.

Vancouver, B.C., car service was suspended for some time on Dec. 14, owing to a bird having flown between some high tension wires near Barnet, and short-circuited the main power line.

Toronto Transportation Commission's conductors and motormen have been supplied with new number badges for their caps. The badges are of brass, with the employees' number stamped out.

The New Brunswick Power Co. was reported to have completed by Nov. 30, the remodelling of its cars to suit them for operation under the new rule of the road which went into effect in New Brunswick Dec. 1. Complete instructions were given to the motormen as to operation under the changed rule, and precautionary notices were issued to passengers, who enter or leave the cars on the opposite side to that which they were accustomed to use under the old conditions.

The British Columbia Minister of Public Works stated in the Legislature Dec. 1, that the B.C. Electric Ry. had been paid \$195,812.01 by the Government, up to Sept. 11, 1922, on account of the expenses it was put in connection with the change of the rule of the road in the province which came into operation at the beginning of 1922, but the accounts between the company and the Government have not been finally settled. The company estimated the cost of changing tracks, overhead work and rolling stock to suit the new rule, at \$933,397.67, and the Legislature voted a sum not to exceed \$350,000 towards the cost.

J. L. Smith, heretofore Assistant Superintendent, Yorkville Division, has been appointed Divisional Superintendent, Eglinton Division, Toronto Transportation Commission, with office at 2170 Yonge St., and A. Steel, who was Superintendent, Yorkville Division, which has been abolished, has been transferred to the Commission's head office.

Answers to Questions on Electric Railway Topics.

The following answers have been sent, by Canadian electric railway officials, to questions addressed to the American Electric Railway Association's question box:—

Winter Conditions on Tracks.—Have any street railways used electric snow melters in open track switches, or on paved track? With special reference to winter conditions, should switch operating boxes be packed with grease or oil, or salted, or drained? In salting switches, should salt be placed in heel tightening mechanism box?

John Whitsell, Manager, Winnipeg Electric Ry.—We have never used electric snow melters. In this climate, under conditions we have to contend with, we find drainage to sewer below the frost line the only efficient method. Rock salt is sprinkled over the entire switch frame, and thereby have a constant supply of

J. M. Ahearn, Assistant Manager, Ottawa Electric Ry.—We salt only, drains freeze up in our climate. We place salt on top of heel tightening mechanism box, brine within.

Employees' Deposits on Companies' Property.—What method is used to ensure the return of company property to the company when an employee leaves the service, particularly conductors who, when employed, are given punches, badges, etc.; are they required to make a deposit of a certain amount of money and if so, how are the accounting features handled?

E. H. Adams, Comptroller, British Columbia Electric Ry. Co.—This company has no actual safeguard that its property will be returned when an employee such as a conductor leaves its service. The main protection it has is in the careful selection of the class of individual employed. There is no deposit required and the employee is only given equipment, etc., when the traffic department is satisfied with his ability, etc., following a probational period. The employees are not bonded or insured and it is found that the confidence reposed in them is justified, as the losses suffered by the company are very small.

Handling of Accounts.—What is the best safeguard against paying a bill twice; certainly, a large company handling thousands of bills each year cannot look up each bill; should a ledger be used with a page for each firm dealt with or some other kind of an index or loose leaf system be used in the disbursement department?

E. H. Adams, Comptroller, British Columbia Electric Ry.—This company's disbursements are recorded in a subsidiary loose leaf ledger, which is balanced every month with the controlling account in the general ledger. Folios are kept for the individual firms dealt with and we find this book very handy as a reference and as a voucher register. Invoices for merchandise are first passed on the Purchasing Agent's order, and are only vouchered for payment when the goods are reported as received. The voucher is then entered in journal and recorded in the above ledger. The voucher and check numbers used are the same, and we have found this saves a great deal of confusion. A small card index system is also used in connection with monthly or quarterly payments to ensure these items being charged for the right periods and to prevent overlapping or duplication.

Operating Returns.—Where a company operates in several cities and the accounting department has representatives in the different cities to receive and bank the money, and where there is prepared a statement, showing the earnings, mileage, etc., on the different lines in the city, where best could such a statement be prepared; in the local city office or in the general office, it being assumed that the local office reports daily to the general office; how is such a statement prepared on your property?

E. H. Adams, Comptroller, British Columbia Electric Ry.—This company operates over 300 miles of city, suburban and interurban lines on the mainland of British Columbia, and all statements for earnings, mileage, etc., are drawn up in the head office at Vancouver. Statements are made showing passenger earnings, car hours, car miles, etc., separate statements being made up for city and suburban lines by city routes and interurban divisions.

Car Wheel Bores.—In boring cast steel wheels, how much smaller are the wheels bored than the diameter of the axle on which they are to be pressed; what is the most desirable pressure in tons per square inch to press on wheels?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.—Our practice in boring iron wheels is to allow from 0.015 to 0.020 in. for 5 in. wheels and 0.012 to 0.016 for 4 in. wheels. Steel wheels only require an allowance slightly more than half of the above figures, the usual resulting pressure being from 35 to 45 tons on 4 in. axles and 45 to 55 on 5 in. axles.

Babbitt Bearings.—Which is more desirable, to bore babbitt bearings after being cast, or to cast them as near exact size as possible?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.—Babbitt bearings should be poured, and either rolled or drifted, if preferred, but it is practically impossible to cast the babbitt lining to a fitting size, owing to the variations in wear of shafts.

Flat Spots on Car Wheels.—What results have been obtained from using abrasive brake shoes to take out flat spots on wheel treads?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.—We have found the use of abrasive brake shoes quite satisfactory on skid spots smaller than the size of a 50c. piece. I do not believe that there is much to be gained by grinding out larger flats than these.

Courtesy by Platform Men.—Have any member companies conducted "courtesy" contests" among platform employees; if so, please describe plan of contest and rules accomplished?

Tie Rods.—What are the dimensions of your tie rods; please give length over all, length of thread on each end, size of terminal and sizes of flat portion, if flat rods; what tests are tie rods subjected to; where do tie rods fail in service; what chemical and physical characteristics are called for in your specifications; is it necessary to have the threaded terminals greater than 7/8 in. diam.; if so, why; what fit of nuts do you call for?

John Whitsell, Manager, Winnipeg Electric Ry.—We use only a small percentage of tie rods on this system, and those only on bridges.

J. M. Ahearn, Assistant Manager, Ot-

tawa Electric Ry.—Tie rods 4 ft. 10 in. over all; 2 in. thread; 3/4 in. terminal; 2 x 2 1/2 in. flat rods; we do not test, apart from ensuring good workmanship; we use in curves only; tensile strength of approximately 30 tons a sq. in.; for our requirements it is not necessary to have threaded terminals greater than 7/8 in. diam.; clearance between bolt and nut, 0.004 in.

Rail Cutting and Ending.—Have you found any better means for cutting rails in the field than the old reliable hack saw? Can rails be suitably ended so that they will butt close after cutting with the acetylene cutting torch?

John Whitsell, Manager, Winnipeg Electric Ry.—Yes, by the acetylene torch; yes, by a careful welder and by introducing a "dutchman," making a welded joint.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:—

	Oct. 1922	Oct. 1921	4 mos. to Oct. 31, 1922	4 mos. to Oct. 31, 1921
Gross	\$861,812	\$845,973	\$3,375,461	\$3,375,467
Expenses	604,573	631,458	2,427,125	2,531,066
Net	257,239	214,515	948,336	844,401

London & Port Stanley Ry.—In connection with the recent proposal for the City of London to buy the London St. Ry., the London City Council's Finance Commissioner gave out a statement regarding the London & Port Stanley Ry., which said that, including the rent of \$20,000 a year, and interest and sinking fund charges, the L. & P. S. R. had paid into the city treasury \$637,859.79 up to June 30, 1922, in addition to nearly \$40,000 in taxes, and that \$225,000 had been provided out of earnings for betterments.

Quebec Ry., Light, Heat and Power Co.—A press report states that the gross earnings for the 9 months ended Sept. 30, were \$2,123,155, and the operating expenses \$1,468,341 against \$2,051,158 and \$1,529,408 respectively for the corresponding period of 1921. The net earnings for the 9 months were \$654,813, against \$521,749, the increase of \$133,064 being due to an increase of \$71,996 in earnings and to a decrease of \$61,066 in operating expenses. After providing for fixed charges, the net surplus for the 9 months was \$235,798, against \$72,454 for the corresponding period of 1921.

The Canadian Electric Railway Association has appointed a committee on the accounting of maintenance and depreciation of street railway assets, including government classification of accounts, as follows: H. E. Weyman, Manager, Levis County Ry., Chairman; F. S. Livingston, Traffic Manager, Hydro-Electric Rys. of Ontario, Toronto & York Division; H. E. Smith, Comptroller, Montreal Tramways Co.; L. Tait, Secretary and Treasurer, London Street Ry.; G. E. Waller, General Superintendent of Railways, Dominion Power & Transmission Co. Some additions may be made to the committee later on.

The Port Arthur, Ont., Public Utilities Commission, which manages the civic railway and the other publicly-owned utilities, was re-elected by acclamation recently as follows: M. C. Campbell, R. M. Young, B. Tourtellot, E. J. Blaquier. The Mayor is a member ex-officio.

Marine Department

Ship Building and Ship Repairing Throughout Canada.

Canadian Vickers, Ltd., Montreal, did the following repair work recently: Canada Steamship Lines' s.s. Gray County, pump and winch repairs; s.s. Simla, survey and bulwark repairs; s.s. Edmonton, repairing and replacing boat davits; s.s. Thunder Bay, port light repairs; s.s. Mapleheath, pump repairs; Canadian Government Merchant Marine steamships Canadian Navigator, Canadian Ranger and Canadian Squatter, docked for survey, bottom painting and sundry repairs; s.s. Canadian Spinner, new clutch for steering engine; Clarke Steamship Co. s.s. Gaspesia, engine room repairs; Canadian Pacific Steamships' s.s. Mottisfont, boiler repairs; Cunard Steamship Co. s.s. Antonia, winch repairs, Danish s.s. Orkild, dry docked for survey, collision damage repair, and bottom painted; Danish s.s. Knud, engine room repairs; Hindustan Steamship Co. s.s. Baluchistan, grounding damage repair and hull and engine repairs; s.s. Hindustan, new gangways and stern tube repairs; s.s. Afghanistan, feed evaporator and steering repairs; Imperial Oil, Ltd., s.s. Montrolite, engine and deck repairs and new life boats; s.s. Calgarolite, reboring i.p. cylinder and other engine and deck repairs and bottom painting; s.s. Torontolite, rudder and minor deck repairs; barge 41, survey, collision and sundry repairs and bottom painting; Italian s.s. Piave, general repairs; Italian s.s. Aussa, new propeller and engine repairs; Italian s.s. Livenza, new crank shaft for dynamo engine; Italian s.s. Marina, winch pipe repairs; Italian s.s. Montegrappa, circulating pump repairs; Jugo-Slavia s.s. Izgled, starboard bow and bridge repairs; Norwegian s.s. Olaf Kyne, renewing small fairleads; Norwegian-American Line s.s. Trondhjemsfjord, stanchion and guard rail renewals; Ropner & Sons' s.s. Millpool, pump repairs and boat davits; U.S. Shipping Board s.s. Hinckley, repairing electric light set and hatches; s.s. West Kebar, sundry hull, deck and engine repairs.

The following work was done in November:—Canada Steamship Lines' s.s. Lord Dufferin, 4,443 tons, drydocked for survey, cleaning boilers, new winch, opening up cylinders, valves, etc.; s.s. Maplebranch, 1,592 tons, drydocked to remove wire rope foul in port propeller and repairing same; s.s. Maplehill, 1,409 tons, drydocked for survey, and repairing broken stern frame; s.s. Manoa, 5,070 tons, piping repairs; s.s. Maplecourt, 3,388 tons, removing and replacing sampson post band; s.s. Hoerda, alterations to cargo holds; s.s. Vinmount, 1,799 tons, repairing scuppers; Canadian Government Merchant Marine s.s. Canadian Seigneur, 4,096 tons, stern frame and rudder for the ship in Newfoundland Dockyards, St. John's, Nfld.; s.s. Canadian Carrier, 2,499 tons, drydocked for survey and bottom painting; C.P.R. s.s. Monteagle, 6,173 tons, overhauling main feed pump, refrigerating engines and compressor, feed heater and other engine and deck repairs; s.s. Holbrook, 6,655 tons, boiler repairs; U.S. Shipping Board s.s. Deuel, 5,113 tons, bulwark and side plate damage repaired; s.s. West Campgaw, 5,094 tons, engine, valve, pipe and winch repairs; Dominion Coal Co. s.s.

Lord Strathcona, 6,892 tons, drydocked, sea valves opened up, ground and replaced; George Hall Coal Co. steamships John B. Ketchum 2nd, 1,109 tons; Ignifer, 1,137 tons, and John F. Morrow, 1,840 tons, drydocked for survey and laid up for winter; Imperial Oil Ltd. s.s. Trontolite, 6,150 tons, general repairs; barge no. 6, laid up for winter; Canadian Western Steamships s.s. Margaret Coughlan, 5,131 tons, new anchor; Navigazione Libera Triestino, s.s. Isonzo, 5,441 tons, new winch pinions and electric welding, steering gear springs; s.s. Timavo, 7,434 tons, sundry engine repairs; Norwegian-American Line s.s. Tyrifjord, 2,820 tons, boat davits repaired; Intercontinental Transport Services, Ltd., s.s. Grey County, 4,156 tons,

of the saloon, 8 x 18 ft., with 4 rooms, a chart room and bathroom. A steel raised forecastle has also been built, containing the crew's quarters, lighting plant, and gasoline engine for operating the windlass, winch and pumps. Electric lighting has also been installed and a 16 ft. lifeboat and 18 ft. towing launch added. Complete new standing and running rigging and sails, stockless anchors and chains have been supplied, and there have been new decks throughout. She was wrecked in ice in the Miramichi River in Dec., 1921, and after being released and towed to Chatham, N.B., was bought by Mr. Cantley, delivered at New Glasgow. She has been renamed Pictonian, and it is stated will be placed in the West Indies trade in charge of Capt. J. G. Wilkie of La Have, N.S.

Collingwood Shipbuilding Co., Collingwood and Kingston, Ont., advises that the following steamships will be overhauled and repaired during the winter: At Collingwood—Bayersher, Glendochart, Glenlyon, Huronic, Martian and Saskatoon; At Kingston—Bayusona, Edmonton, Keynor, Keyport, Malton, Maplebranch, Simla, T. P. Phelan, Trevisa and Vinmount. In most cases, the nature of the repairs has not been settled, as much will depend on the surveys made, but a steady winter's work for both plants is ensured.

Fraser, Brace Co., Three Rivers, Que. The George Hall Coal Co.'s s.s. Edward L. Strong, the third of 4 steel bulk freight steamships built at this yard for that company, arrived at Montreal, Dec. 6. It was stated that a few finishing touches were to be made at Montreal, and that this prevented her from making a trip to the lakes before the close of navigation.

Gidley Boat Co., Penetanguishene, Ont., has received an order from the city of Toronto for a fireboat for harbor use, complete with fire equipment, for \$29,875. For a number of years, the city has leased a freight-carrying tug for fire service along the harbor front, at \$5,000 for the navigation season. The arrangement was not satisfactory, and it was decided to call for tenders, to the city's specifications, for fire equipment, tenderers to supply their own specification for hull, for a completely equipped fireboat. Only one tender was received, and after several changes in the hull specification suggested by T. B. F. Benson, naval architect, etc., Toronto, the contract was placed. The boat is to be ready for the reopening of navigation.

Halifax Shipyards, Ltd., Halifax, N.S. In addition to the completion of repairs on the C.P.R. s.s. Empress, by Nov. 4, as mentioned in our last issue, the following repairs were done during November: Royal Mail Steam Packet Co.'s s.s. Caraque, docked, scraped, painted and overhauled; s.s. Chaudiere, docked, scraped, painted, general repairs and inspection; Canadian Government steamships Lady Laurier and Stanley, docked, scraped, painted and general repairs in connection with annual inspection; Norwegian s.s. Andalusia, docked, scraped and painted; French cable s.s. Edouard Jeramec, docked for general repairs, including damage caused by fire in coal bunkers, general overhaul, scraping and

Dominion Marine Association.

Honorary President, A. A. Wright, President, Tidewater Shipbuilders, and Vice President and Managing Director, Davie Shipbuilding & Repairing Co., Montreal.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Montreal.

First Vice President, Hon. L. C. Webster, President, Webster Steamship Co., Montreal.

Second Vice President, G. J. Madden, George Hall Coal Co. of Canada, Ogdensburg, N.Y.

Executive Committee, The President, First and Second Vice Presidents, and W. E. Burke, Canada Steamship Lines, Montreal; Yvon Dupre, Sincennes-McNaughton Line, Montreal; M. J. Haney, Canada Steamship Lines, Toronto; A. E. Mathews, Mathews Steamship Co., Toronto; W. J. McCormack, Algoma Central Steamship Co., Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; John Waller, Keystone Transports, Montreal; Honorary members, L. L. Henderson and A. A. Wright, Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

sundry engine, winch and windlass repairs; Anchor-Donaldson Line s.s. Concordia, 4,986 tons, piping dynamo engine and telegraph repairs; s.s. Gracia, 5,261 tons, sundry repairs; s.s. Lakonia, 4,483 tons, sundry engine repairs.

In addition to the foregoing, the company cut the Canada Steamship Lines' s.s. Maplecourt in two, to pass through the canals to the Great Lakes.

Thomas Cantley, New Glasgow, N.S.—The three-masted steel schooner Alda, which Mr. Cantley bought from German owners some time ago, and which he has had cut in two and lengthened 24 ft., was launched at New Glasgow, N.S., recently. She was built at Hammelwarden, Germany, in 1889, and had dimensions: length 103 ft. 7 in., breadth 22¼ ft., depth 9¼ ft. The portion inserted after cutting the ship in two, consists of 7 frame spaces amidships. A raised steel center deck 13 ft. long has been built, and a raised poop 24 ft. long, the full width of the ship, added, this containing the officers' quarters, aft

painting, and repairs in connection with regular Bureau Veritas survey; H.M.C.S. Patriot, docked for minor repairs to hull and propeller. This last ship was undocked Dec. 1.

Midland Shipbuilding Co., Midland, Ont., has bought the tow barge George E. Hartnell, owned formerly by North Western Transportation Co., Detroit, Mich., and will convert her into a steamship at a cost of between \$150,000 and \$170,000. The George E. Hartnell was built at Chicago, Ill., in 1896, of steel, on the channel system, and has steel tank top where no wood ceiling is fitted, 2 watertight and 2 non-watertight bulkheads, steam pump wells, steam towing machine, electric light, and is provided with steam power for working pumps, etc. The hull is divided into 3 compartments, and the hatches are spaced 24 ft. centers. Her dimensions are: length b.p. 352 ft., breadth moulded 42 ft., depth moulded 27 ft.; tonnage 3,265 gross, 3,154 net.

A. Moscrop, Beach Avenue Shipyard, Vancouver, B.C., launched the steam tug R.S.M. for R. S. Marpole, Vancouver, Nov. 30. Her dimensions are: length 90 ft., breadth 20 ft., depth 11.6 ft.

Northern Boat Building Co., Edmonton, Alta., is building a schooner for Innitok, an Eskimo navigator in the Mackenzie River delta and along the Arctic coast. It is to be ready to go north on the reopening of navigation on the Mackenzie River through to Aklavik. It will be 40 ft. long with 12 ft. beam, schooner rigged, and equipped with an auxiliary engine. This is the fourth schooner built by this company for the same man, all specially designed and built for navigation in Arctic waters. The hull is of white oak framing and southern cypress planking, with two 35 ft. masts, carrying mainsail, foresail and jib. The company is also building a number of smaller schooners and boats for Eskimos in the delta, and all will be completed during the winter to go to Aklavik in the spring. In addition to these, a number of whaling boats are being built for use on the Great Bear Lake, out of Norman, to replace the native kiaks.

Prince Rupert Drydock & Shipyard, Prince Rupert, B.C., did the following repair work recently: Canadian Government Merchant Marine s.s. Canadian Observer, general overhaul; Canadian Fish & Cold Storage Co.'s s.s. Andrew Kelly, docked, cleaned, painted and hull repairs; Dominion Government derrick scow, docked, cleaned and painted; U.S. lighthouse tender Cedar, docked, painted and general overhaul; steam tug Evergreen, extensive hull repairs and alterations. In addition to these, about 25 halibut fishing ships were docked, cleaned, painted and repaired.

The following work was done during November:—Canadian Government Merchant Marine s.s. Canadian Observer, completion of overhaul; Dominion Government s.s. Marfish, docked for inspection; s.s. Newington, docked and painted; West Coast Towing & Salvaging Co., steam tug Masset, docked and painted, new rudder and other repairs. In addition to the foregoing, 28 fishing ships were docked and overhauled.

Smith & Rhuland, Lunenburg, N.S., launched the schooner Pauline C. Winters, Dec. 4, for fishing service. Her dimensions are: length 133 ft., breadth 26½ ft., depth of hold 11 ft.

Turpel Marine Railway Co., Victoria, B.C., has re-established itself on its old

site, which, during the war, was occupied by the Foundation Co. for shipbuilding. The s.s. Redfern was overhauled there recently, and a new stem fitted, and the Ajax dredges 305 and 306 have also been overhauled.

Victoria Machinery Depot Co., Victoria, B.C., did the following repair work during November: C.P.R. s.s. Princess Mary, 2,155 tons, docked, cleaned, painted; s.s. Tees, 679 tons, docked, cleaned and painted, tailshaft drawn for inspection, hull and engine repairs; barge no. 8, 1,135 tons, docked, cleaned and painted, keel repairs due to grounding; s.s. Princess Maquinna, 1,776 tons, docked and propeller blades changed; Dominion Public Works Department dredge Ajax, docked, cleaned and painted, and generally overhauled; Sooke Harbor Fishing & Packing Co., Harriet E, cleaned and painted; Victoria Tug Co. steam tug Sadie, boiler repairs; A. O. Ruscoe, steam tug Nora, engine repairs; schooner Crofton, docked and stern bearing repaired; schooner Leonor, docked, cleaned and painted.

Yarmouth Marine Railway Co., Yarmouth, N.S., has completed extensions to its plant, whereby any ships up to 16 ft. draft at high tide, or 14 ft. draft ordinary tide, can be handled.

Yarrows, Ltd., Victoria, B.C., did the following repair work recently: Canadian Government Merchant Marine s.s. Canadian Highlander, 5,370 tons, dry-docked, cleaned, painted, general survey and overhaul; C.P.R. s.s. Princess Alice, 3,099 tons, docked, cleaned, painted, general repairs and overhaul; s.s. Princess Beatrice, 1,290 tons, docked, bottom damage repair due to stranding, repairs to keel, 4 ft. bilge and heel and sundry repairs; s.s. Princess Louise, 4,032 tons, drydocked, cleaned, painted and minor repairs; Consolidated Whaling Corporation s.s. Gray, 707 tons, new propeller; Commercial Cable Co. s.s. Restorer, 3,180 tons, repairing refrigerator, machinery and sundry small repairs, and preparing ship for sea; Navigazione Libera Tristina s.s. Brenta, 5,400 tons, sundry repairs, deck and engine room, tail shaft and stern gland; Pacific Salvage Co.'s s.s. Salvor, 323 tons, renewing smoke stack and casing, and sundry repairs.

The following work was done in November:—C.P.R. s.s. Princess Alice, 3,099 tons, condenser repairs; s.s. Princess Beatrice, 1,290 tons, engine room repairs; Canadian Government steam tug Point Ellice, 205 tons, docked, cleaned, painted and sundry repairs; Canadian Explosives, steam tug Polar Forcite, docked, cleaned, under water surface sheathed with copper, rudder, skeag and engine room repairs; Canadian Robert Dollar Co. s.s. Grace Dollar, 6,498 tons, drydocked, cleaned and painted, stern frame welded and deck and engine room repairs; Union Oil Co. s.s. Santa Maria, 8,430 tons, drydocked, under water parts overhauled, zinc renewed, cleaned, painted, boilers cleaned, new flood lights on masts for deck, sundry deck, engine room and pipe line repairs; D. G. S. Bergen's s.s. Camilla Gilbert, 5,658 tons, deck and engine room repairs; L. B. Noel steam tug Chehalis, new furnace fronts and sundry repairs; also several scows docked and repaired.

The C.P.R. is reported to have ordered from Yarrows, Limited, a wooden ferry steamboat, for operation between Sidney, B.C., and Bellingham, Wash., for the motor car traffic between the island and the mainland. It is stated that work is to be commenced at once, and that the

boat is to be delivered ready for service during May. The propelling machinery is to consist of engines of the Diesel type. The boat's dimensions are to be: length overall 170 ft., beam 43 ft., depth moulded 11 ft., with capacity for between 40 and 50 cars and 250 passengers, arrangements being made that the cars enter or leave the boat at either end.

Marine Public Works Contracts Awarded.

The Dominion Public Works Department has awarded the following marine contracts: Oct. 14, breakwater improvements, Friars Head, N.S., E. M. Dickson, Louisburg, N.S., reinforced concrete 1-2-4, at \$16.90 a cub. yd.; Oct. 21, pile construction wharf at Canso, N.S., Sydney Construction Co., Sydney, N.S., at \$1.06 a sq. ft. of top area, the width of wharf being 25 ft.; Oct. 28, pile wharf at St. Etienne de Malbaie, Que., Onesime & Poliquin, Portneuf, Que., unit prices; Nov. 3, dredging in Courtenay River, Comox-Alberni, B.C., Grant Smith & Co. and McDonnell, Vancouver, B.C., class B, 85c. a cub. yd., in situ; Nov. 7, repairs and extension to wharf at Bersimis, Que., Methat & Fournier, Montmagny, Que., unit prices; Nov. 8, wharf at Aultsville, Ont., Fallon Bros., Cornwall, Ont., unit prices; repairs and extension to breakwater at Devils Island, N.S., D. G. Kirk & Son, Antigonish, N.S., unit prices; Nov. 9, rebuilding wharf at Vananda, Texada Island, B.C., R. Bumstead, Vancouver, B.C., \$3,673; Nov. 9, building wharf at Davis Bay, Comox-Alberni, B.C., R. Bumstead, Vancouver, B.C., \$5,245; Nov. 9, repairs to wharf and renewal of float at Quatsino, Comox-Alberni, B.C., McDonald, Watson & Wither, Victoria, B.C., unit prices; Nov. 13, repairs to piers at Kincardine, Ont., D. Keys and J. Keys, Kincardine, Ont., unit prices.

Canal Statistics for October, 1922.

The Dominion Bureau of Statistics Transportation Branch has issued the following summary for Oct., 1922:

Sault Ste. Marie.—Traffic through the Canadian and U.S. locks showed a large increase over Oct., 1921, aggregating 11,232,198 tons, compared with 6,650,811 in Oct., 1921. Wheat increased 14,932,210 bush.; iron ore increased 2,696,412 tons, and bituminous coal increased 1,478,053 tons, or over 120%. The total of bituminous coal passed up through the canals during 1922 to Oct. 31 was 5,961,080 tons, compared with 11,979,596 for the same period of 1921, and 12,507,027 tons for the 1921 season of navigation.

Welland.—Total traffic increased over 28%, due almost entirely to increase in wheat shipments, which amounted to 326,349 tons, or 10,878,300 bush., against 3,403,300 bush. for Oct., 1921. Corn shipments decreased 66%; oats also decreased. No anthracite coal passed through the canal and bituminous coal fell off 57,826 tons.

St. Lawrence.—Total traffic aggregated 651,251 tons, against 479,033 in 1921. Corn and oats declined, but wheat shipments increased 223,944 tons, or 7,464,800 bush. Anthracite coal increased 37,796 tons, but bituminous coal was 1,999 tons below 1921 shipments. General merchandise increased from 14,849 tons in 1921 to 26,277.

Winter Moorings of Canadian Steamships.

Following is a list of Canadian steamships, with the ports at which they are berthed for the winter, of which Canadian Railway and Marine World has been officially advised:—

Aube Transportation Co., Montreal.—Aube, at Kingston, Ont.

Brantford Navigation Co., Montreal.—Brantford, at Kingston, Ont.

Canada Atlantic Transit Co., Montreal.—Arthur Orr, Kearsarge, at Chicago, Ill.

Canada Steamship Lines, Ltd., Montreal (partial).—Advance, Arabian, Belleville, Cataract, City of Ottawa, Edmonton, Hamilton, Maplebranch, Mapleheath, Maplehill, Oatland, R. G. A. Weaver, Simla, Stormount, T. P. Phelan and Kinmount, at Kingston, Ont.

Canadian Government Merchant Marine, Montreal.—Canadian Aviator, Canadian Hunter, Canadian Raider, Canadian Rancher, Canadian Trapper, Canadian Trooper, at Montreal.

Canadian Pacific Car & Passenger Transfer Co., Prescott, Ont.—Charles Lyon, at Prescott, Ont.

Canadian Pacific Ry. Great Lakes Steamship Service.—Alberta, Assiniboia, Athabasca, Keewatin, Manitoba, at Port McNicoll, Ont.

Cape Steamship Co., Halifax, N.S.—Turret Cape, at Kingston, Ont.

Chicago, Duluth & Georgian Bay Transit Co., Chicago, Ill.—North American, South American, at Ecorse, Mich., where they are being converted into oil burners.

Donnelly Salvage & Wrecking Co., Kingston, Ont.—Cornwall, Frontenac, Mary, Mary P. Hall, William Johnston, at Kingston, Ont.

Export Steamships, Ltd., Montreal.—Trevisa, at Kingston, Ont.

George Hall Coal Co. of Canada, Montreal.—Frank A. Augsbury, Brignogan, Ignifer, John F. Morrow, Lehigh, John B. Ketchum 2nd., Rock Ferry, F. D. Ewen, Zapotec, Wellington, at Montreal; Royan, at Sorel, Que.; N. H. Botsford, Senator Derbyshire, John Rugee, James W. Follette, at Ogdensburg, N.Y.

Georgian Bay Tourist Co. of Midland, Midland, Ont.—Midland City, at Midland, Ont.

Glen Steamships, Ltd., Midland, Ont.—Glenarm, Glendochart, Glendowan, Glen-ealy, Glenfarn, Glengarnock, at Midland, Ont.

Glen Transportation Co., Toronto, Ont.—Glenafon, at Port Colborne, Ont.; Glencadam, Glenvegan, at Kingston, Ont.

Great Lakes Transportation Co., Midland, Ont.—Glenbrae, Glencairn, Glenclova, Glenfinnan, Glenisla, Glenlivet, Glenlyon, Glenmavis, Glenorchy, Glen-shee, Glenstriven, at Midland, Ont.

Honey Harbor Navigation Co., Midland, Ont.—City of Dover, Tenno, at Midland, Ont.

Hudson's Bay Co., Winnipeg.—Athabasca River, at McMurray, Alta.; Lady Kindersley, at Vancouver, B.C.; Mackenzie River, at Fort Smith, Northwest Territories; Weenuck, at Peace River Crossing, Alta.

Imperial Oil, Ltd., Toronto.—Imperial, Iocolite, Royalite, Sarnolite, at Sarnia, Ont.

International Transit Co., Sault Ste. Marie, Ont.—Algoma, at Sault Ste. Marie, Ont.

Keystone Transports, Montreal.—Key-bell, Keynor, Keyvive, Keywest, at Kingston, Ont.

Kingston Navigation Co., Kingston, Ont.—St. Lawrence, at Collins Bay,

Ont.; Brockville, at Davis drydock, Kingston, Ont.

Lake Erie Navigation Co., Walkerville, Ont.—Marquette and Bessemer No. 1, at Conneaut Harbor, Ohio.

Marquette & Bessemer Dock & Navigation Co., Walkerville, Ont.—Marquette and Bessemer No. 2, at Conneaut Harbor, Ohio.

Mathews Steamship Co., Toronto.—Bayton, Brockton, Laketon, Riverton, at Goderich, Ont.; Berryton, Mathewston, at Port McNicoll, Ont.; Clinton, at Cornwall, Ont.; Easton, at Port Stanley, Ont.; Huronton, at Port Colborne, Ont.; Malton, Yorkton, at Kingston, Ont.

Montreal & Cornwall Navigation Co., Cornwall, Ont.—Britannic, at Cornwall, Ont.

Nevada Shipping Co., Halifax, N.S.—Nevada, at Kingston, Ont.

Niagara, St. Catharines & Toronto Navigation Co., Toronto.—Dalhousie City, at Port Dalhousie, Ont.; Northumberland, at Toronto.

Northern Fish Co., Selkirk, Man.—Wolverine, at Selkirk, Man.

Northern Navigation Co., Sarnia, Ont.—Hamonic, at Collingwood, Ont.; Huronic, Louis Philippe, Noronic, Thousand Islander, at Sarnia, Ont.

Northern Trading Co., Edmonton, Alta.—Northland Echo, at Waterways, Alta.; Northland Trader, Northland Pioneer, at Bell Rock, Northwest Territories.

Pembroke Transportation Co., Pembroke, Ont.—Oiseau, at Pembroke, Ont.

Peninsula Tug & Towing Co., Wiarton, Ont.—Crawford, G. K. Jackson, at Wiarton, Ont.

Port Colborne & St. Lawrence Navigation Co., Toronto.—Benmaple, at Port Colborne, Ont.

Ships Registered in Canada During September, 1922.

In compiling the following lists of ships registered, steamboats and motorboats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, n.h.p. etc.	Owner or Managing Owner
150811	Aragon(1)	Montreal	Wyandotte, Mich.....1916	249.3	41.9	15.3	1643	963	105 Sc.	International Waterways Navigation, Montreal.
150299	Bretonia	Sydney, N.S.	Levis, Que.....1917	81.7	19.2	10.9	100	42	24 Sc.	N. Macdonald, Sydney, N.S., and T. H. Macdonald, New Glasgow, N.S.
138377	EdwardBuckley	Sarnia, Ont.	Manitowoc, Wis.....1891-1917	154.3	31.0	10.6	339	134	60 Sc.	C. E. Millard, Sarnia, Ont.
105098	Jamaica(2)	Quebec, Que.	Hull, England.....1896	98.4	20.5	11.0	149	71	35 Sc.	J. L. Lachance, Ltd., Quebec, Que.
141679	Mathewston*	Toronto	Port Arthur, Ont.....1922	530.0	58.3	27.1	7403	5918	227 Sc.	Mathews Steamship Co., Toronto.
117323	Sebastian	Vancouver, B.C.	Christiania, Norway.....1904	93.5	16.8	10.3	103	17	52 Sc.	Canadian Northern Steamships, Ltd., Toronto.

(1) Recovered wreck. (2) Formerly Bella. *Equipped with wireless.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
150727	Byron & Minnie.....	Montreal	Barge	Chattanooga, N.Y.....1894	95.8	17.7	8.3	130	125	Richelieu Transportation Co., Montreal.
112197	E. Zee Bee.....	Chatham, Ont.	Dredge	Chatham, Ont.....1922	68.0	25.0	4.8	135	135	Chatham Dredging & General Contracting Co., Chatham, Ont.
150517	F. V. H. No. 1.....	N. Westminster, B.C.	Barge	New Westminster, B.C.....1922	85.5	28.0	7.5	148	148	F. H. Gilley, New Westminster, B.C.
150492	Franconia.....	Parrsboro, N.S.	Schr.	Surrey, Me.....1862	90.6	25.0	8.0	175	160	D. R. Glennie, River Hebert, N.S.
150749	J. C. 32.....	Vancouver, B.C.	Scow	North Vancouver, B.C.....1922	73.1	27.0	6.5	110	110	J. Crane, North Vancouver, B.C.
150755	K. 56.....	Vancouver, B.C.	Scow	Eburne, B.C.....1922	86.0	32.0	8.9	208	208	S. S. McKee, Vancouver, B.C.
112198	McGuire.....	Chatham, Ont.	Dredge	Chatham, Ont.....1920	69.0	24.0	4.8	128	128	Chatham Dredging & General Contracting Co., Chatham, Ont.
150728	Michael E. Nash.....	Montreal	Barge	Tonawanda, Wash.....1901	95.8	17.7	7.8	124	112	Richelieu Transportation Co., Montreal.
150562	Sadie No. 18.....	Victoria, B.C.	Barge	Victoria, B.C. ....1922	100.0	34.0	9.3	258	258	Victoria Tug Co., Victoria, B.C.
150563	Sadie No. 19.....	Victoria, B.C.	Barge	Victoria, B.C. ....1922	100.7	34.0	9.3	259	259	G. McGregor, Victoria, B.C.
150410	W. C. Kennedy.....	Lunenburg, N.S.	Schr.	Chester Basin, N.S.....1922	118.2	25.0	11.0	156	112	Kennedy Co., Lunenburg, N.S.

Prescott & Ogdensburg Ferry Co., Prescott, Ont.—Ferdinand, Miss Vandenberg, at Prescott, Ont.

J. Richardson & Sons, Kingston, Ont.—Susie Chipman, at Kingston, Ont.

Rockport Navigation Co., Kingston, Ont.—Waubic, at Kingston, Ont.

The Ross Navigation Co., Pas, Man.—Nipawin, at Pas, Man.

J. F. Sowards, Kingston, Ont.—Brantford, Jeska, Shanly, M. A. Lydon, Winnie Wing, W. A. Newland, at Kingston, Ont.

Sparrow Lake Steamer Line, Sparrow Lake, Ont.—Glympse, at Port Stanton, Ont.

Timagami Fur Co., Timagami, Ont.—Kiego, at Timagami, Ont.

Toronto, Hamilton & Buffalo Navigation Co., Hamilton, Ont.—Maitland No. 1, at Ashtabula, Ohio.

Union Transit Co., Toronto—Wahcondah, at Montreal.

Walkerville & Detroit Ferry Co., Walkerville, Ont.—Ariel, at Walkerville, Ont.

Webster Steamship Co., Montreal.—Colin W., Eric W., Richard W., at Montreal; Stuart W., at Louise Basin, Quebec.

Windsor & Pelee Island Steamship Co., Pelee Island, Ont.—Pelee, at Kingsville, Ont.

Wolfe Island Tp., Ont.—Wolfe Islander, at Kingston, Ont.

Steamship Maplehurst Wrecked.

Canada Steamship Lines' s.s. Maplehurst founded near the upper entrance to the Keeweenaw channel, Lake Superior, Dec. 1, when bound from Lorain, Ohio, to Fort William, with a cargo of coal, and 11 of the crew of 20 lost their lives. The ship encountered a storm on the previous day, and was headed down shore to enter the canal, but as the storm increased, it was decided to continue west, and about 3 or 4 miles off shore. At that time the velocity of the wind was about 60 miles an hour. Owing to the pounding the ship received, some of the superstructure began to break up, and flare signals were used, which brought the lifeboat crew from the canal coastguard station, and 9 of the crew were taken off safely, but one, in jumping from the ship, missed the lifeboat and was drowned. Capt. G. N. Menard, Kingston, stayed with the ship, but told the remainder of the crew to jump for the lifeboat if they wished to do so, but they evidently decided to remain with him. The Maplehurst was built at Chicago, Ill., in 1892, and was originally named Cadillac. She had a steel hull, of the well deck type, with double bottom for watertight ballast, 3 watertight and 2 non-watertight bulkheads, steel boiler house, etc. Her dimensions were: length b.p. 230 ft., breadth moulded 37 ft., depth moulded 19 ft.; tonnage, 1,263 gross, 1,068 net. The propelling machinery consisted of triple expansion engines, with cylinders 15, 25 and 42 in. diam. by 30 in. stroke, 500 i.h.p. at 80 r.p.m., supplied with steam by a Scotch boiler, 13 ft. diam. by 11½ ft. long, at 160 lb. It is stated that the ship and cargo, valued at \$200,000, are a total loss.

British Columbia Pilotage.—A Vancouver press report states that the amalgamation between the two pilotage associations in British Columbia, the B.C. Pilotage Association and Vancouver Pilots, Ltd., which was expected to have been consummated Oct. 1, 1922, has been declared off, each retaining its identity.

The Dominion Government's Illegal Suspension of the Coasting Laws.

The representations made to the Dominion Government to have the Canadian coasting laws suspended, to permit United States ships to enter the Canadian coasting trade on the Great Lakes, were dealt with fully in Canadian Railway and Marine World for Dec., 1922, on pg. 635, and the illegal method adopted by the Government to carry out the suggestions made was commented on and condemned. The acting Minister of Trade and Commerce's statement of Nov. 18 was given fully, in which he said in part: "The Government has been carefully investigating the situation in all its bearings, and after mature deliberation, has come to the conclusion that it can be materially assisted by allowing other than Canadian vessels the privilege of loading and storing cargoes and of discharging same at Bay ports during winter or early spring."

Following the acting Minister's statement, the Dominion Marine Association was officially advised, Nov. 24, 1922, that the Customs Department had instructed its men, late on the previous night, to issue clearances for U.S. ships loading grain at Port Arthur and Fort William for Georgian Bay ports, on condition that the cargoes would not be discharged until next spring, this permission being for storage cargoes only. On the same date, Canadian Railway and Marine World was advised by the Customs Department of the general purport of the instructions issued to the collectors at Port Arthur and Fort William, and, after writing several letters, we secured, on Dec. 6, the exact wording of the instructions, as follows: "Am now instructed that United States vessels may be permitted to load grain at your port on last trip and carry same to an eastern Canadian port, on condition that such grain shall be unloaded at such Canadian port after the close of navigation. You may therefore grant clearances to United States vessels to eastern Canadian ports, for such purpose, on last trip of vessel, and this condition should be noted on vessels' clearance, copy of clearance to be mailed to collector at eastern Canadian port."

As quoted above, the acting Minister of Trade and Commerce said that U.S. ships were to be given "the privilege of loading and storing cargoes and of discharging same at" (Georgian) "Bay ports during winter or early spring." As shown above, the instructions given the Customs collectors at Port Arthur and Fort William were to issue clearances for "Eastern Canadian ports," which does not limit them to Georgian Bay ports, as stated by the acting Minister of Trade and Commerce, who either did not know what he was talking about when he made the statement quoted above, or—we leave our readers to draw their own inference.

The provisions of the Canadian Coasting Law, as contained in Revised Statutes of Canada, chap. 113, which were given in our last issue, cannot be emphasized too much, and are therefore repeated as follows:

"955. No goods or passengers shall be carried by water, from one port of Canada to another, except in British ships.

"958. The Governor in council may, from time to time, declare that the foregoing provisions of this part shall not apply to the ships or vessels of any

foreign country in which British ships are admitted to the coasting trade of such country, and to carry goods and passengers from one port or place to another in such country."

The first section quoted limits distinctly Canadian coasting trade to British ships, and the next section provides for the admission of foreign ships to Canadian coasting trade only where reciprocal arrangements have been granted by the country so favored, and then only by order in council. The U.S. has not made any reciprocal arrangement, and therefore no such permission as has been given by the Government for the admission of U.S. ships to Canadian coasting trade could be given legally, not even by order in council, and much less by departmental instructions. It could only be done legally by Parliament, by an amendment to the Canada Shipping Act.

If the Government deliberately violates the provisions of one law, as it has done in connection with coasting trade, how can it expect the people to respect other laws? Law-makers should not be law-breakers.

Great Lakes Transportation Company Buys s.s. Matoa.

The Great Lakes Transportation Co., Midland, of which James Playfair is President and General Manager, has bought the s.s. Matoa in New York for operation on the Great Lakes. The ship has arrived at Montreal, where she will be cut in two to go through the canals, and it is probable that she will be afterwards lengthened by about 48 ft. Tenders for the work are now under consideration. A Montreal press report of Dec. 12 stated that the contract had been awarded to Montreal Dockyards, Ltd., but we were officially advised, Dec. 14, that this was incorrect. After passing through the canals in two sections, she will be joined again, either at Collingwood or Port Arthur, but no decision as to this has been arrived at, at the time of writing. The s.s. Matoa was built at Cleveland, Ohio, in 1890, and has a steel hull with double bottom for watertight ballast, steel boiler house, two watertight and two non-watertight bulkheads, hatches spaced 24 ft. centers, electric light, etc. She was wrecked at Port aux Barques, Lake Superior, in the great storm of Nov., 1913, on the Great Lakes, and the wreck was bought by the Reid Wrecking Co., Sarnia, who salvaged, overhauled and repaired her at Sarnia, and in 1915, sold her to Boston, Mass., parties for operation on the Atlantic coast. To enable her to pass through the canals, she was cut in two at Sarnia, and rejoined on the St. Lawrence River. Her dimensions are: length 290 ft., breadth 40 ft., depth 25 ft. She is equipped with triple expansion engines with cylinders 24, 38 and 61 in. diam. by 42 in. stroke, 1,200 i.h.p. at 80 r.p.m., supplied with steam by 2 Scotch boilers, each 14 ft. diam. by 12½ ft. long, at 160 lb.

The International Water Lines Passenger Association has ceased to function, and therefore has been removed from the list of Transportation Associations, Clubs, etc., published heretofore in each issue of Canadian Railway and Marine World.

Canadian Government Merchant Marine Operations, Etc.

Officers of Steamships.—The following chief engineers have been appointed in addition to those mentioned in previous issues: Canadian Coaster, E. G. Rankin; Canadian Squatter, W. Fotheringham; Canadian Volunteer, C. Christian; Canadian Voyageur, W. Geddie.

San Francisco Service.—It has been decided to increase the number of ships on the Vancouver-San Francisco run, from three to four. The s.s. Canadian Volunteer, which is being transferred from the Atlantic service, sailed from St. John, N.B., Dec. 15, to proceed via the Panama Canal, to Vancouver, where she is expected to arrive about Jan. 15.

St. John, N.B., Sailings:

Liverpool Service—Canadian Ranger, Jan. 10; Canadian Seigneur, Jan. 24.

London Service—Canadian Commander, Jan. 10; Canadian Victor, Jan. 24.

Cardiff and Swansea Service—Canadian Otter, Jan. 13; Canadian Squatter, Feb. 3.

Glasgow Service—Canadian Carrier, Jan. 11; Canadian Voyageur, Feb. 7.

Halifax, N.S., Sailings:

Australia and New Zealand Service—Canadian Constructor, Jan. 20.

Barbados, Trinidad and Demerara Service—Canadian Harvester, Jan. 13; Canadian Beaver, Jan. 27.

Hamilton, Nassau, Kingston and Belize Service—Canadian Fisher, Jan. 18; Canadian Forester, Feb. 8.

Newfoundland Service—Canadian Sapper, Jan. 6.

Vancouver, B.C., Sailings:

Australasian Service—Canadian Traveller, Jan. 7; Canadian Scottish, Jan. 20.

Oriental Service—Canadian Winner, Jan. 31; Canadian Prospector, Feb. 24.

The s.s. Canadian Gunner was considerably damaged and practically her whole cargo, chiefly flour, oats and hay, was destroyed by fire at St. John's, Nfld., Dec. 2. The fire was subdued on the night of Dec. 4, and the unloading of the damaged cargo was proceeded with at once. The estimated cargo damage is \$100,000. A survey of the ship was arranged for after the cargo had been cleared.

The s.s. Canadian Seigneur, which lost her rudder about 738 miles northeast of St. John's, Nfld., when bound from Garston, Eng., to Montreal, early in Nov., 1922, as mentioned in our last issue, was towed into St. John's, Nov. 24, by the C.G.M.M. s.s. Canadian Sapper. When word was received that she was in trouble, the Reid Newfoundland Co.'s s.s. Meigle was sent to her assistance, and stood by, but was found to be unfit for the service, on account of the heavy weather, so further help was asked for by wireless, and the Canadian Sapper was sent Nov. 16. During the tow, the cable between the Sapper and the Seigneur broke twice. The Canadian Seigneur used her own power, the steering of the ship being done by the Canadian Sapper, which was in charge of Capt. Blouin, the Canadian Seigneur being in charge of Capt. Potts, both of whom described the trip as a most trying one, chiefly on account of the contrary winds prevailing. After discharging her cargo of coal, the Canadian Seigneur was dry-docked by Newfoundland Dockyards, Ltd., for general overhaul and repairs. A new stern frame and rudder have been supplied by Canadian Vickers, Ltd., Montreal.

The s.s. Canadian Voyageur, which has been laid up in the eastern passage, Halifax, N.S., for some time, has been moved to the south end terminal, where she will undergo repairs.

Drydock Urged for Vancouver.

During the recent visit of the Dominion Minister of Public Works to Vancouver, a meeting of representatives of the business organizations in the city was arranged, and a memorial was presented embodying a voluminous resolution passed by the citizens of the contiguous territory on both sides of the Fraser River, urging the need of a drydock in Vancouver. The resolution protested against the Government's decision not to proceed with the agreement made by the previous Government for aiding the construction of a drydock at Vancouver, under the Drydock Subsidies Act, and requested a reconsideration of the matter. Statistics were quoted, and comparisons made between those for Vancouver, Victoria, Montreal and Seattle, which show that the number of ships entering Vancouver during 1921 was 11,779; Montreal, 5,541; Seattle, 21,556, while those for Victoria were not available. It was also pointed out that several large repair orders had been lost to Canada owing to the lack of drydock facilities at Vancouver, where ships requiring repair have discharged their cargoes. The Shipping Federation of Canada has endorsed the project of a drydock at Vancouver.

Additional Steamships for Great Lakes.

Recent press cables from Great Britain have referred to several orders for steamships for the Canadian Great Lakes trade, as having been given there, without mentioning the persons ordering. One dispatch of Dec. 7, stated that contracts had been signed with a number of British firms for building 10 ships of 2,500 tons d.w., for the Montreal-Buffalo route, for the Eastern Steamship Co. of Canada. It is stated that the price to be paid for them is £300,000, and that delivery is to be made by May. In this connection, we are advised that A. B. Mackay, formerly of Hamilton, Ont., now of London, Eng., has placed orders on the Clyde for the construction of 2 full Welland Canal size bulk freight steamships, with capacity for about 90,000 bush. of wheat, or 96,000 bush. of corn. These ships will be of the latest lake type, with all possible improvements, will be equipped with reciprocating engines, and will use oil as fuel.

The placing of contracts for the construction of an additional number of similar steamships, possibly 8, is being considered, and if ordered, they will also be built on the Clyde, but, at the time of writing, the orders for them have not been confirmed. The Eastern Steamship Co. has been incorporated, with head office at Port Colborne, Ont., for the operation of these ships.

It is said that Swan, Hunter & Wigham, Richardson, of Newcastle-upon-Tyne, are building 20 lake carriers on their own account, for sale, that 10 of these will be taken by Buffalo, N.Y., interests, and that the other 10 are being negotiated for by one of the largest Canadian shipowning companies on the Great Lakes.

The Anderson Co. of Canada, is reported to be about to place a contract for the construction of 8 full canal size, single deck, bulk freight steamships for delivery in Montreal, at the end of April. It is stated that these ships will be built to the British Corporation classification, and will have capacity for about 92,000 bush. on canal draft.

Keystone Transports, Ltd., Montreal, has ordered two full-sized Welland canal, single deck, steamships at Middlebrough, Eng. It is stated that they will be practically duplicates of the company's s.s. Keynor, with capacity for 85,000 bush. of grain each.

Atlantic Ocean Passenger Rates.

Representatives of steamship companies operating in the passenger service across the Atlantic Ocean, met in Brussels, Belgium, recently, to consider rates. The meeting was private, but it has been stated that the chief object of the discussion was the prevention of a possible rate war, and the adoption of a scale of reduction in fares. It is expected that some reductions will go into effect early in the year. The C.P.R. has denied the report that it has announced reductions in third class fares. The White-Star-Dominion Line is reported to have announced a reduction of 10% in the minimum rates on the s.s. Megantic, for the winter.

British Columbia Coast Freight Co., Ltd. has been incorporated under the British Columbia Companies Act, with \$25,000 authorized capital, and office at Vancouver, to purchase the s.s. Alaskan, owned formerly by the Pacific Salvage Co., Victoria, B.C., and to carry on a general towing, navigation and transportation business. The Alaskan was built at Onetta, Oregon, in 1886, and is screw driven by engine of 13 h.p. Her dimensions are: length 96.5 ft., breadth 19 ft., depth 7.1 ft.; tonnage 150 gross, 102 net.

Ships Added to and Deducted from the Canadian Register During September, 1922.

Added.	Steam.—Tonnage—			Sailing.—Tonnage—		
	No.	Gross	Net	No.	Gross	Net
Built in British Possessions.....	19	7,993	6,163	16	1,458	1,371
Purchased from foreigners.....	4	528	233	3	429	397
Transferred from British Possessions.....	1	103	17	.....	.....	.....
Registered anew.....	4	128	100	2	263	263
Others	1	1,643	963	1	89	83
Totals.....	29	10,335	7,476	22	2,239	2,119
Deducted.						
Wrecked or otherwise lost.....	.....	.....	.....	3	578	505
Broken up or unfit for use.....	3	113	77	.....	.....	.....
Sold to foreigners.....	1	13	9	1	441	394
Transferred to United Kingdom.....	1	2,546	1,472	.....	.....	.....
Transferred to British Possessions.....	.....	.....	.....	1	144	99
Registered anew.....	.....	.....	.....	1	17	15
Totals.....	5	2,582	1,558	6	1,180	1,013

Atlantic and Pacific Oceans.

The Cairn Line's s.s. Cairndhu, which grounded at Cape Rouge, near Quebec, at the end of November, was refloated Nov. 28, and drydocked for examination and repairs.

The name of the s.s. Wisley, owned by Canada Steamship Lines, has been changed to Welland County. She was built at Sunderland, Eng., in 1904, and was originally named Wray Castle.

Canada Steamship Lines has announced that it will give four trans-Atlantic sailings each month during the winter out of St. John, N.B., to London and Hamburg, and to Havre and Rotterdam, in alternate weeks.

Furness, Withy & Co. are reported to be building a passenger and freight steamship for service between Liverpool, Eng., St. John's, Nfld., and Boston, Mass., to run in conjunction with the s.s. Digby. It is stated that she will have accommodation for 200 first class and 100 second class passengers, and that she will be named Humber.

The Italian s.s. Montegrappa, which sailed from Montreal, Nov. 5, after having had some repairs made by Canadian Vickers, Ltd., was reported, Dec. 4, to have been abandoned at sea in a sinking condition, about Nov. 14, while en route to Venice, having encountered a severe storm. The crew of 45 were rescued by the White Star Line's s.s. Pittsburgh and landed at Southampton, Eng.

Canadian Robert Dollar Co.'s s.s. Stuart Dollar was towed into Seattle, Wash., Nov. 29, having been severely damaged in a heavy storm during the latter days of the month. She lost her rudder, her deck load was washed away, her lifeboats completely smashed, and rails and stanchions shattered. When picked up by the steam tug Sea Monarch, Nov. 17, she was about 600 miles from the coast, having sailed from Vancouver, B.C., Oct. 18.

Maritime Provinces and Newfoundland.

The Lurcher shoal lightship, in the Bay of Fundy, which has been off her station temporarily, for repairs, has been replaced.

The Bras d'Or Steamship Co. is reported to have bought a steamboat to replace the s.s. Marion, which was burned at Whycocomagh at the end of October.

The Newfoundland Marine Department has placed a flashing white acetylene light, giving 15 flashes a minute, on Tonker Rock, about 300 yds. from Cann Island, Seldom-Come-By.

The Bedford Construction Co., which has the contract for building wharves, etc., at Courtenay Bay, St. John, N.B., is reported to have taken a contract of some extent in Jamaica.

The Norwegian s.s. Nordfjeld was reported ashore and a total loss at Flowers Cove Ledge, Nfld., towards the end of November, when bound from Sunderland, Eng., to Gaspé, Que., with coal.

The Newfoundland Government s.s. Prospero ran aground at Small Island, near Green Pond, on the east coast of Newfoundland, Dec. 16, and was refloated the next day, with nos. 1 and 2 holds damaged. The 120 passengers were landed safely.

F. M. Ross, Manager, St. John Drydock & Shipbuilding Co., who returned to St. John, N.B., from Ottawa, Dec. 7,

is reported to have stated that work on the drydock will be continued throughout the winter, with a reduced staff of about 100 men.

Halifax Towboat Co. has bought the steam tug Samson from Furness, Withy & Co. She was built at Shelburne, N.S., in 1907, and is screw driven, by engine of 33 h.p. Her dimensions are: length 83 ft., breadth 20.5 ft., depth 8.6 ft.; tonnage, 111 gross, 50 net.

The Dominion Public Works Department has completed the dredging of the public slip between the municipal wharf and W. A. Park's wharf, in the Miramichi River, Newcastle, N.B., for a length of 175 ft. and a width of 100 ft. The depth at the outer end is 10 ft., diminishing to 2.5 ft. at the inner end.

Province of Quebec.

The Marine Department received tenders Dec. 29, for the purchase of the old wooden Red Islet lightship, lying at Quebec, Que. Her dimensions are: length 102 ft., breadth 22 ft., depth 10.6 ft.; registered tonnage 152.

Ontario and the Great Lakes.

Canada Steamship Lines' s.s. Thunder Bay ran ashore in Lake Erie, near Port Colborne, Dec. 13, during heavy weather. The company announced Dec. 14 that the crew were all safe.

Insurance on Canadian ships on the Great Lakes was extended by London underwriters to midnight, Dec. 20, at 1% from Dec. 15, making the rate for December, 2½%. The U.S. underwriters' insurance expired midnight, Dec. 15.

The steam tug Wilrose, owned by Vanorder & Davis, Port Burwell, was burnt there Dec. 13. She was built at Collingwood, Ont., in 1915, and was screw driven by engine of 10 h.p. Her dimensions were: length 60 ft., breadth 15.8 ft., depth 6.3 ft.; tonnage 49 gross, 31 net.

C.P.R. freight shed 5, with 5 freight cars and their contents, were burnt at Fort William, Dec. 5. The total damage was estimated at \$1,000,000. The C.P.R. s.s. Assiniboia, and the Northern Navigation Co.'s s.s. Huronic, were alongside the dock, but both ships were floated to safety, although the first named was somewhat scorched.

The Mathews Steamship Co.'s s.s. Malton, which ran ashore on the Main Duck Islands, Lake Ontario, Nov. 17,

while running light from Montreal to Buffalo, was released by a salvage company, Nov. 30. She was taken to the Collingwood Shipbuilding Co.'s yard at Kingston, where she was docked for examination and repairs.

The U.S. Lake Survey reported the stages of the Great Lakes, in feet above mean sea level, for Nov., 1922, as follows: Superior, 602.35; Michigan and Huron, 579.54; St. Clair, 574.21; Erie, 571.41; Ontario, 245.15. Compared with the average November mean stages for the past 10 years, Superior was 0.25 ft. below; Michigan and Huron, 0.81 ft. below; Erie, 0.57 ft. below; Ontario, 0.54 ft. below.

The grain elevator capacity at Port Arthur will be increased during this year by about 5,000,000 bush. Elevators will be built by James Stewart Grain Co., 1,500,000 bush., \$850,000; N. Bawlf Grain Co., 1,500,000 bush., \$850,000; Mutual Elevator Co., 1,500,000 bush., \$800,000; Parrish & Heimbecker, 500,000 bush., addition, \$200,000; Saskatchewan Co-operative Elevator Co., cleaner extension, \$75,000. These figures are according to press reports.

The Lake Superior Paper Co.'s steam tug Reliance, during a storm Dec. 13, was wrecked on the rock of Lizard Island, Lake Superior, and 27 of the 36 people on board were reported missing. In addition to the crew of 14, there were on board a number of lumbermen taken from the lumber camp on the boat's last trip. It was announced, Dec. 18, that 23 of the 27 left on board had been rescued by the tug G. R. Gray, the remaining 4 being given up as lost.

Manitoba, Saskatchewan, Alberta and the Northwest Territories.

The Northland Trading Co.'s s.s. Northland Echo will be rebuilt at Waterways, Alta., during the winter, in readiness for the northern service next summer.

The Ross Navigation Co.'s s.s. Nipawin will undergo extensive repairs at Pas, Man., during the winter, including a new boiler and engine foundations, new main deck and paddle wheels.

British Columbia and Pacific Coast.

The Union Steamship Co. of British Columbia is having a steamship built at Glasgow, Scotland, for its coasting

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during November, 1922.

Articles	Eastbound	M. ft. B. M.	Canadian Canal	U.S. Canal	Total
Lumber			60	14,060	14,120
Flour			644,860	795,810	1,440,670
Wheat					
Grain, other than wheat					
Copper					
Iron Ore					
Pig Iron					
Stone					
General Merchandise					
Passengers					
Coal, Soft	Westbound				
Coal, Hard					
Iron Ore					
Manufactured Iron and Steel					
Salt					
Oil					
Stone					
General Merchandise					
Passengers					
Summary					
Vessel Passages			377	1,612	1,989
Registered Tonnage			577,914	5,775,841	6,353,755
Freight—Eastbound			140,832	6,418,455	6,559,287
Westbound			56,567	2,852,165	2,908,732
Total Freight			197,399	9,270,620	9,468,019

service, and it is expected that she will be ready for delivery during April, and will reach Vancouver some time during May.

West Vancouver Improvement Association passed a resolution, Dec. 6, that, provided satisfactory arrangements could be made with the provincial government for taking over part of the ferry indebtedness, and a guarantee as to satisfactory service and fares, the municipal ferry system be abandoned.

The Pacific Salvage Co. Victoria has completed the salvage of the Mexican s.s. Guerrero, which was stranded on the beach at Mazatlan, Mexico, and the ship has been towed to San Pedro, Cal. The company's s.s. Algerine left Victoria, Oct. 20, arrived at Mazatlan Oct. 30, refloated the ship and towed her to San Pedro, arriving there Dec. 1. It was stated that the Guerrero was to be taken to San Francisco for overhaul and repairs. The s.s. Algerine returned to Victoria Dec. 9.

The C.P.R. is going to establish a ferry service for motor car traffic between the mainland at Bellingham, Wash., and Vancouver Island, at Sidney. J. W. Troup, Manager, British Columbia Coast Service, C.P.R., is reported to have stated, Dec. 7, that the contract for building the boat had been given to Yarrows, Ltd., Victoria, and that delivery was required in May. The distance between the two terminals is about 40 miles, and it is intended to make it a 3-hour trip. Some details of the boat are given on another page under Shipbuilding and Ship Repairing Throughout Canada.

Mainly About Marine People.

Capt. William Davidson, formerly in command of the C.P.R. s.s. Scotian, which has been under charter to the British Government, for service between England and India, died at Southampton, Eng., recently. He was born in 1870 and entered C.P.R. steamship service Feb. 1, 1898. He was for some time on the trans-Pacific service, and served on the steamships Montezuma, Montrose (old), Mount Temple, Monmouth, Missanabie, Montfort and Montcalm (old). He served on various steamships during the war, and subsequently was on the steamships Empress of Russia, Lake Manitoba, St. George, Corsican and Scotian.

J. B. Gray, who died at Yarmouth, N.S., Dec. 11, aged 58, was at one time in charge of the Yarmouth Steamship Co.'s office at Yarmouth, operating steamships to St. John and Halifax.

Capt. J. D. Mackenzie, North Sydney, N.S., has been appointed Superintendent of Pilots for Sydney and North Sydney. He has acted as master of various ships since 1893, and has the record of never having lost or stranded a ship. For several years he has been in command of different ships for Canadian Government Merchant Marine.

J. E. McLurg, General Manager, Halifax Shipyards, represents the navigation interests on the Nova Scotia Accident Prevention Association's executive committee.

Capt. Isaac Watt, who had been master of one of the C.P.R. ferry steamships across the Detroit River until about a year ago, died at Windsor, Ont., Dec. 10, aged 66. During the war he went overseas, and was in charge of the car ferry steamship service, operated between Southampton, England, and Havre, France, by the British Government.

Canadian Pacific Railway Ocean Steamship Services.

The s.s. Empress of India is being overhauled and remodelled, and converted into a steamship of the mono class, and is to be renamed Montlaurier. In line with the company's policy of having all its mono class ships of the M series, the following changes of names will also be made: Corsican, to be changed to Marvale; Scotian, to Marglen; Tunisian, to Marburn; Victorian, to Marloch.

During the 1922 St. Lawrence navigation season, there were 59 arrivals and departures of C.P.R. ocean passenger steamships, which landed 16,722 cabin passengers at Montreal, and embarked 12,668 cabin, and 8,565 third class passengers there. At Quebec, there were 23 C.P.R. passenger steamship arrivals and departures, carrying 8,626 passengers eastbound, and 36,145 westbound. The last mentioned figures include all third class arrivals in Canada by the C.P.R. ships, Quebec being the landing port for that class.

It is announced that calls will be made at Belfast, Ireland, during 1923, both eastbound and westbound, by the company's ships sailing between Montreal and Glasgow, instead of only westbound, as during 1922. It is also stated that more extensive use will be made of Southampton, Eng., than formerly. The first sailing from Montreal will be by the s.s. Metagama, May 3, and the steamships Marburn and Marloch. The steamships Marglen and Marvale will be operated from Montreal to Cherbourg, Southampton and London, the call at London being only for freight. The s.s. Empress of Britain will run from Quebec to Cherbourg, Southampton and Hamburg, in conjunction with the steamships Empress of Scotland and Empress of France.

The s.s. Empress of Australia sailed from Vancouver, B.C., recently for the Orient, after having completed repairs to her turbine shaft and the installation of a new type of oil burners. It is stated that on a sailing test before leaving, she averaged 18 knots, whereas her average speed was 16.

An Associated Press dispatch of Dec. 3, from London, Eng., stated that the C.P.R. had announced revised rates on its trans-Atlantic steamships, mainly reductions in third class fares. A London cablegram, on Dec. 5, stated that C.P.R. officials there denied that reductions had been made in third class fares as stated in the previous dispatch.

The schedule for the 1923 St. Lawrence navigation season comprises 72 sailings from Montreal, and 27 from Quebec. It is expected that the season will open with the sailing of the s.s. Metagama from Montreal, May 3, for Belfast and Glasgow. The steamships Marburn and Marloch will also run on this route. The steamships Marglen and Marvale will run from Montreal to Cherbourg, Southampton and London eastbound, and London, Southampton and Havre westbound. The s.s. Montcalm will sail from Montreal, May 4, for Liverpool, and with the Montclare, Montrose and Montlaurier will maintain a weekly service to Liverpool, the last named making Quebec her Canadian port.

The Great Lakes and St. Lawrence River Rate Committee will meet at the Chateau Frontenac, Jan. 25.

Grain Shipped Through Vancouver.

During the crop year ended Aug. 31, 1922, the total amount of grain shipped through the Dominion Government elevator at Vancouver, was 6,401,678 bush., of which 3,506,419 were shipped to United Kingdom ports, 661,759 to European ports, and 2,233,500 to Japan. In addition to this amount, 978,371 bush. were shipped through the Vancouver Milling & Grain Co.'s elevator, making a total for the crop year of 7,380,049 bush.

During Sept., 1922, 210,012 bush. were received at Vancouver, and 33,083 bush. were shipped to Japan; during October, 1,749,454 bush. were received at Vancouver, and 985,119 bush. were shipped, of which 281,333 were sent to United Kingdom ports, 687,219 to European ports, and 16,567 to Japan.

In November, 1,898,451 bush. of wheat, 351 bush. of oats, and 56,302 bush. of rye, a total of 1,955,104 bush., and 103,520 lb. of mixed grains, were received at the Dominion Government elevator, and 2,189,252 bush. of wheat were shipped by ocean. Of this total, 1,921,252 bush. went to the United Kingdom, and 268,000 to other European ports.

Pilotage on the St. Lawrence River.

The Marine Department has called attention to the fact that pilotage on the St. Lawrence River is optional, though the payment of pilotage dues is compulsory between Father Point and Quebec, Father Point and the head of the Saguenay River, and Quebec and Montreal, and all intermediate points, with the following exceptions: Ships employed wholly in Government service or while so employed by either the British or Canadian Government; ships propelled wholly or in part by steam: (1) in trading from port to port, in the same province, or employed in any one port or harbor; (2) in trading between any one or more of the Provinces of Quebec, New Brunswick, Nova Scotia, and Prince Edward Island, and any other or others of them; (3) in voyages between any port or ports in the said province, or any of them and New York, or any port in the U.S., on the Atlantic, north of New York; (4) in voyages between any port in any of the said provinces and any port in Newfoundland; (5) registered in Canada, and engaged in shipping, and (6) engaged in salvage or towing operations; ships registered in Canada of not more than 250 tons register.

Montreal and Quebec pilotage districts are under the Marine Department, which controls the pilotage dues. Ships requiring pilots inbound, may secure them at Father Point, from the pilotage tender there, and pilots change at Quebec to take ships to Montreal. There are pilotage offices at Father Point, Quebec and Montreal, but above Montreal there are no licensed pilots.

In the enquiry into the Calgarolite-Frontenac collision, held at Montreal, Nov. 22, reported on another page of this issue, the Dominion Wreck Commissioner called attention to the St. Lawrence Pilot, Canadian Edition, 1920, stating that pilotage is compulsory, said that this was likely to misguide navigators, and suggested that a correction be made. As quoted above, pilotage is optional, but the payment of pilotage dues is compulsory, except with certain ships mentioned.

Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties:—

Collision of s.s. Cymric Queen and Barge S.O.Co. no. 41.

Held at Quebec, Que., Oct. 25, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. C. Lapierre and J. B. Henry, as nautical assessors, into the collision of the Anglo Belgique Shipping Co's Cymric Queen, with the Imperial Oil Ltd. barge S.O.Co. no. 41, lashed to the steam tug Gerald Morgan, near Isle aux Raisins, Lake St. Peter, Sept. 30. The s.s. Cymric Queen, and the barge S.O.C. no. 41, were represented by L. Beauregard, and the tug Gerald Morgan by C. A. Pentland, K.C., and A.C.M. Thompson. Evidence was given by Capt. G. Higginbotham, D. Cheeseman, second officer, N. Peckett, wheelsman, G. Veldhoen, lookout man, W. Cousins, chief engineer and G. J. Lawrence, third engineer of the Cymric Queen. Owing to the absence of witnesses from the tug, who were delayed by weather, the court adjourned to hear additional evidence. The hearing was resumed at Montreal, Nov. 2, when evidence was given by A. Bonin, master, M. Mongeau, wheelsman, L. Lussier, first engineer of the tug Gerald Morgan, C. H. Harmonson, master of the barge S.O.Co. no. 41, A. Gosselin, pilot of the s.s. Cymric Queen and A. Desrochers and W. Noble. The court found that, under the circumstances the Cymric Queen complied with all the regulations, and exercised proper judgment, and therefore exonerated the master, officers and pilot. Owing to an unforeseen happening to the machinery of the tug Gerald Morgan, over which the master had no control, he was also exonerated, the court accepting his statement that the anchor was let go to check the advance of his ship. With reference to the barge S.O.Co. no. 41, the master C. H. Harmonson testified that it would have been better if there had been a man at the wheel steering. He was the only seaman on board, and he was there to look after the owners' interests. There had been friction between his employer and himself, and he was not in the company's service at the time of the hearing. He went to bed leaving someone on deck, and was awakened by the sound of a whistle. He did not think of letting go the anchor. The court expressed the opinion that, though the master reluctantly took command of the barge, having accepted the responsibility, he should have been on deck instead of being in bed. The court's understanding of the situation was, that the barge not being required to carry a certificated master, he was acting purely as a representative, or foreman. Owing to dissension between himself and his employer, the court felt that the employer would have been better advised to have secured someone without a grouch, and in view of this, the court considered the barge was insufficiently manned, and the property left unguarded, when the master retired to his room. Had someone interested and qualified been in charge, the letting go of the starboard anchor was imperative as a seamanlike and timely operation. In the absence of data respecting the conditions of the towing contract, if any, between the tug and the barge, the court considered that the crew of the barge did not make any effort to prevent the collision. If the only seaman

on board had been on deck, and let go the anchor, the only method of checking the advance under the circumstances, the collision might have been avoided, and certainly minimized. As the barge is not required to carry a certificated master, the master's certificate was not dealt with, and the court found that the tug, being the master of the tow, must share responsibility with the barge for the casualty.

Grounding of s.s. Modica.

Held at Montreal, Oct. 27, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. C. Lapierre and J. B. Henry, as nautical assessors, into the grounding of the Norwegian s.s. Modica, off the Canada Cement Co's wharf in Montreal harbor, Oct. 17, when she was detained about 70 hours, and released after lightering a portion of her cargo, but sustained no hull damage. The master, Capt. L. M. Jensen, and pilot Lacroix were the only witnesses, the former not being represented by counsel, L. Guerin, acting for the latter. The s.s. Modica is a steel ship, 370 ft. long, 50 ft. broad, drawing 24 ft. aft and 22½ ft. forward, driven by a single screw, with speed of 10 knots, and a crew of 34, including 3 deck officers and 3 engineers. She is owned by I. A. Christensen, of Christiania, and was bound from Blyth, Eng., to Montreal, with coal. Counsel for the pilot having no argument to offer, the court adjourned. On Nov. 2, the court gave judgment, finding that the grounding of the ship at a place where signals, indicated on the chart, give an assurance of safety, was not caused through negligence, or lack of judgment, and therefore exonerated the master, officers and pilot from all blame. The court suggested that an inspection of the place be made, in order that pilots and navigators generally, may be assured that anchoring in that vicinity will not be fraught with danger.

Lock Gate Accident on Lachine Canal.

Held at Montreal, Nov. 7 and 8, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. Lefebvre, as nautical assessor, and B. Langan, Superintending Engineer, Hall Engineering Works, Montreal, as engineer assessor, into the cause of Interlake Navigation Co's s.s. Saskatoon striking and destroying gates of lock no. 1, Lachine Canal, resulting in the sudden emptying of the basin between locks 1 and 2, causing various damages to the s.s. Winnipeg, grain elevator, and presumably to the s.s. Gracia of the Donaldson Line, and to other property, Oct. 21. The various interests concerned were represented as follows: s.s. Winnipeg, by A. R. Holden, K.C.; underwriter of s.s. Saskatoon, by E. M. McDougall, K.C.; owners of s.s. Saskatoon, by G. G. Hyde, K.C.; Donaldson Line, owner of s.s. Gracia, by A. H. Elder; and Montreal Warehousing Co., owner of the elevator and barge Ethel, by W. B. Scott. The court, with counsel, visited lock 1 and the s.s. Saskatoon, and watched the arrival of the s.s. Inland, noting the method used with snubs, and lines, and the place where checking was performed, and taking measurements of distances between posts. On the Saskatoon, the snubbing wire and compressor were examined, and various measurements were taken, and the engine room inspected.

Evidence was given by the following:

Capt. W. E. Cornett, master; J. B. McLaren, at the time of the accident, chief engineer; D. Leslie, chief engineer; J. Daigneault, first mate; J. Lazenby, wheelsman; J. Ruttan, seaman, of the s.s. Saskatoon; D. H. Mapes, Jr., Manager; W. Norcross, Mechanical Engineer, Interlake Navigation Co.; R. Milloy, lockmaster, and L. S. Parizeau, acting Superintendent, Quebec canals.

Capt. W. E. Cornett stated that the Saskatoon was well equipped, having passed Lloyd's inspection in England. On arriving at lock 1, he followed the usual custom of snubbing, ringing full speed astern when his ship was at the place and position required, but he noticed that she gained impetus, and struck the gates, the check wire, through the increased advance of the ship, slipping through the compressor for its entire length. As soon as the ship had been carried through the gates, he ordered the starboard anchor let go, which was done promptly, thus avoiding other serious damage to shipping. The evidence varied somewhat with respect to the speed at which the Saskatoon entered lock 1, being estimated at 1½ miles by the crew and "too fast" by the lock master. Yet it was agreed, almost unanimously, that had the order from the bridge been obeyed in the engine room, the ship's speed could have been checked and her way stopped at the required position.

It appeared to the court that the master, whilst perhaps entering the lock at a greater speed than safety warranted, took proper action, and gave proper orders at the time, and the custom of snubbing was followed. His subsequent action in ordering the anchor let go, and the prompt doing so by the mate are commendable. The equipment and the condition of the ship were vouched for by Lloyd's certificate of inspection. An examination of the engine room indicated that dirt had accumulated, but the court expressed the opinion that it was not due to neglect, but to lack of time and facilities to attend to that detail after her voyage across the ocean. The attachment for operating the engines, either in the astern or ahead movement, was accepted by the inspectors as suitable and appropriate, and this was proved by the fact that the ship had crossed the ocean and made one round trip to the lakes, negotiating the canals and locks without mishap. What really happened has not been clearly defined. Notwithstanding the information given by the present master, Capt. L. Patenaude, to the Collector of Customs, which was based on hearsay, the preponderance of evidence indicated that the execution of a contrary order to that received was due to the quick handling of the lever. The error could have been remedied immediately had the engineer's attention been on the motion of his engine in response to the lever's action, which went ahead, instead of astern. The error, was noticed, but not before the ship had gained additional impetus, which could not be resisted by snub, or check wire and compressor. The engineer has 30 years of clean record, and the fact that he did not observe at once, the result of his work of the lever, could not be attributed to negligence, lack of knowledge or carelessness, but to momentary inattention. The dirt perceived did not contribute to rendering the reversing gear ineffective. The court's interpretation of

rule 27 of the regulations governing the navigation of Canadian canals, is that the 4 lines mentioned are not meant to be placed at the time the ship is in movement to reach a certain position, but that when the ship is in the required position she must be held secure there by the 4 lines. In this case, 3 additional lines were in readiness and were to be used. There is nothing in the rules which compels a ship to have 2 check or snub lines. The plea by counsel for the s.s. Saskatoon, that the accident was inevitable, was rejected, as the evidence showed that, had the engineer looked at his reversing gear, he would have seen at a glance, and rectified the mistake before the screw had gathered power. The moment of inattention excluded the inevitability of the accident. The fact that the owner of the s.s. Saskatoon did not entertain such a view was shown by the company suspending the chief engineer immediately following the accident. The court therefore expressed the opinion that, under the circumstances, and through no fault of its employees, the s.s. Saskatoon must be held to be to blame for the damages caused, and found that the accident and subsequent damages were due to the faulty movement of the Saskatoon's engines. The court added the following rider: "In order to meet a possible recurrence of the mishap, or false movement in the engine room, it is recommended that 2 snub wires be placed on posts simultaneously with the other lines which regulation 27 calls for, and that the forward snub line be placed, not at the post nearest to the sign 'Stop,' but to the one preceding it. This should apply to every ship, whether up or down bound, and the lock master should insist on the above being done." The master of the Saskatoon was exonerated from blame, and the chief engineer, J. B. McLaren, who, in the court's opinion, made a mistake in operating the levers, was, as it was not done maliciously, wilfully, or from incompetence, but through a momentary lack of reflection, severely reprimanded and cautioned to be more careful in future.

Grounding of s.s. Canadian Farmer.

Held at Vancouver, B.C., Nov. 17, by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, into the accident to Canadian Government Merchant Marine s.s. Canadian Farmer, when she struck a submerged object in Stewarts Passage, B.C., June 18. Evidence was given by Capt. W. J. Boyd, then master of the ship, to the effect that Capt. M. Edgecombe, then chief officer, and J. Abrams, chief engineer, had falsified entries in the log. During the course of the latter's evidence, the Wreck Commissioner stated that his impression was that witness was trying to hide something when there was nothing to hide, and that his evidence was palpably cooked. It was found that the accident was one that might happen to anyone, and Capt. Boyd was slightly reprimanded.

Calgarolite-Frontenac Collision.

Held at Montreal, Nov. 22, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. Lefebvre and H. W. Robson, as nautical assessors, into the collision between Imperial Oil Ltd. s.s. Calgarolite and the s.s. Frontenac, operated in ferry service between Quebec and the Isle of Orleans, Nov. 15, when both ships, and the wharf and pontoon, in Quebec harbor, were considerably damaged. Imperial Oil

Ltd. was represented by A. W. Atwater, K.C., and L. Beauregard; the owner of the s.s. Frontenac by A. C. M. Thomson, and Pilot Thivierge, of the s.s. Calgarolite, by F. P. Brais. The court found that every precaution was taken by the s.s. Calgarolite's crew, and therefore exonerated the master and first officer from any blame. With regard to Pilot L. F. Thivierge, it was shown that, owing to the flood tide existing, he brought his ship in too rapidly, and when it came to the transference of pilots, the stopping of the engines left the ship at the mercy of the flood tide, which had the tendency of approaching the ship unknown to him. For this lack of inattention to the ship's speed, in view of the tide's condition, the court found that he did not exercise proper vigilance, and fined him \$100, to be paid by Dec. 15, 1922. At the conclusion of this finding, the court stated that the St. Lawrence Pilot, Canadian Edition, 1920, states that pilotage is compulsory, which is likely to misguide navigators, and it suggested that a correction be made by the authorities.

Welland Ship Canal Construction.

During the summer, construction was carried on vigorously on sections 1 to 5, inclusive. The contractors for sections 1 and 2 are J. P. Porter, Standifer Bros. & Porter; for sections 3 and 4, P. Lyall & Sons Construction Co.; and for section 5, Canadian Dredging Co. These sections extend from Port Weller, on Lake Ontario, to Port Robinson. No construction has been done on the portion of the canal between Port Robinson and Lake Erie.

During 1922, on sections 1 and 2, nine of the large concrete cribs required for the docking at Port Weller, were built and placed in position. The harbor is being dredged and the embankments on each side are being built with excavated material. Concrete is being placed at locks 1 and 2, and their weirs, and these structures are nearing completion. Excavation is being carried on in the canal prism, south of the Queenston road, and to some extent at other points on the sections. About 820 men were employed during the year, but this force has been somewhat reduced, owing to the curtailment of concrete work during the winter.

On sections 3 and 4, excavation of the canal prism, north of lock 4, and throughout the greater part of sec. 4, was carried on. Concrete work is well advanced on twin locks 6, and a small amount has been done at lock 7. The relocation of the G.T.R. Welland Division on sec. 4, has been graded and ballasted, and track has been laid, and operation over the diverted line will probably commence in April, when it is expected that a couple of necessary structures will be completed. About 840 men have been employed on these sections during the year. On section 5, dredging was carried on and the substructure of bridge 12 is nearing completion. The work on this section is almost finished. About 170 men were employed during the year.

For this work, the Dominion Parliament appropriated \$8,000,000 for the financial year ending March 31, and about \$5,000,000 had been spent to Nov. 30, 1922.

The general contractor for sections 3 and 4, P. Lyall & Sons Construction Co., Montreal, has let subcontracts as follows: Earth and rock excavation, con-

crete work in lock and culvert, washing concrete walls with cement, stone protection to banks, bearing piles and foundations, side steel sheet piling, placing reinforcing steel, drilling 3 in. vertical and horizontal holes in rock, placing 12 in. and 18 in. vitrified or concrete pipe, and channeling rock, to Sir William Arrol & Co., St. Catharines, Ont. Class 1 and 2 excavation, transporting and placing excavated material in harbor embankments at Port Weller, to A. E. Rigby, St. Catharines, Ont. Class 1 and 2 excavation, rehandling excavated material into watertight embankments, transporting and placing excavated material at outer ends of Port Weller embankments, to G. L. Campbell, Allanburg, Ont. Excavation in connection with relocation of G.T.R., to J. E. Constable, Thorold, Ont. Concrete forms, to Blaw-Knox Co., Pittsburgh, Pa.

Esquimalt Drydock.—The Dominion Public Works Department will receive tenders to Jan. 31, for the supplying and installation of machinery for the equipment of the new Esquimalt drydock. Power will be supplied on the bus bars of the Department's switchboard in the pump house, and the work for which tenders are being received will start at and include those points, and includes fireproof power house, with mechanical engineer's office, store room, oil room, lavatories, etc.; tunnels and conduits; complete electric lighting system; machine shop equipment for small running repairs to plant; 7 electric capstans; 3 main pumps of 60,000 imp. gall. capacity, 2 pumps of 9,000 imp. gall. capacity, sump pump, fire pump, sluice and non-return valves, etc. The work is to be completed within 18 months of the signing of contract.

The icebreaking steamship J. D. Hazen, which was sold during the war to the Imperial Russian Government, and renamed Mikula, and which was rebought by the Canadian Government last year, for service in the St. Lawrence ship channel, has been completely overhauled and is now ready for service. An unconfirmed press report states that she will probably be renamed Courcellette.

H.M.S. Raleigh, which was wrecked at Amour Point, Belle Isle Strait, Aug. 8, and which has been abandoned by the Admiralty, is reported as being looted by fishermen, and others in the neighborhood, some of them being camped in the vicinity to take anything removable as opportunity offers. During low tide, people can walk aboard the wreck without difficulty.

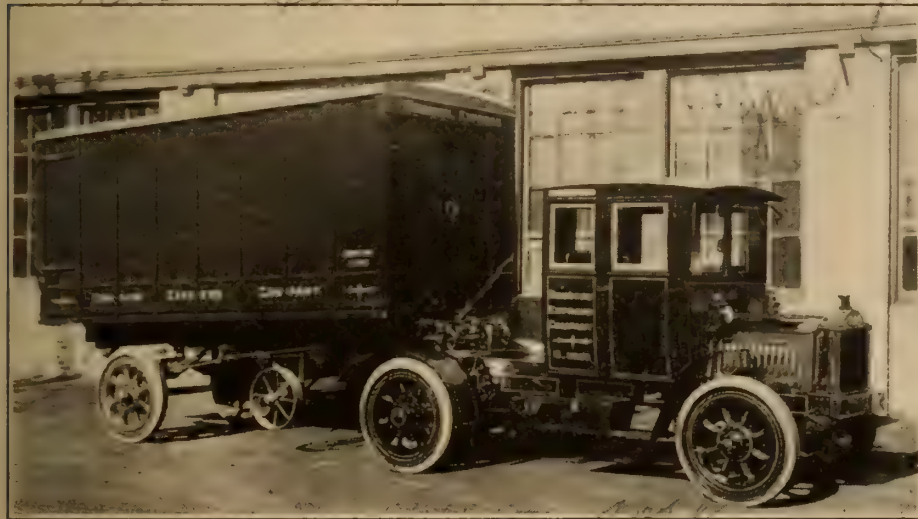
The Oceanic Transportation Co., Ltd. has been incorporated under the Dominion Companies Act, with \$30,000 authorized capital stock and office at Quebec, Que., to own and operate ships and carry on business as common carrier on the high seas and within inland navigation. The incorporators are: J. A. Gravel, K.C., A. C. M. Thomson, J. S. M. Smith, E. I. Gall, Quebec, Que., and J. A. Rochette, St. Romuald d'Etchemin, Que.

Echo Towing & Freighting Co., Ltd. has been incorporated under the British Columbia Companies Act, with \$25,000 authorized capital, and office at New Westminster, to take over the towing and freighting business carried on by A. C. Little, on Burrard Inlet and adjoining waters, together with all ships and other assets, and to carry on business as shipowner, for towing ships and carrying passengers, mails and freight.

Dominion Express Co's Motors and Trailers in Toronto.

Canadian Railway and Marine World for January, 1922, contained an illustrated description of motor trucks being used in Montreal by the Dominion Express Co., which have proved so successful that similar ones have been introduced in Toronto. Motor tractors and LaPeer 2-wheel semi-trailers are used to handle the large volume of express matter passing to and from the railway stations and the company's substations.

which has a very short wheel base, is equipped with a fifth wheel, or turning plate, mounted in place of the ordinary truck body. The fifth wheel contains half of an automatic coupling device, which fits into the other half of the device which is attached to the semi-trailer. The coupling and uncoupling is done quickly, the driver never leaving his seat. In coupling, the tractor is backed into position in front of the trailer, which rides up onto the rear of the tractor, the brakes being automatically released, and the coupling automatically locked. The complete unit is



Dominion Express Co's Tractor and Trailer.

There are 2 tractors and 7 semi-trailers. This provides sufficient trailers to be at the railway stations and substations, both receiving and discharging loads while others are being moved by the tractors from one point to another. When a tractor arrives at a station with a trailer, it is uncoupled and immediately coupled up with another trailer and it pulls away. In the meantime the first trailer, or other trailers, are being unloaded, or loaded, awaiting the return of the tractor.

The semi-trailer, which has a capacity of 3½ tons, is equipped with a large completely enclosed body. Under the front of the trailer is a small pair of wheels. When the tractor is uncoupled from the trailer, these wheels automatically lower to the ground, and thus support the front end of the trailer, permitting it to stand alone. The tractor,

then ready to move away. When uncoupling, the driver first raises a conveniently placed lever, which unlocks the coupling, and then drives the tractor forward. This operation drops the front wheels to the ground and automatically sets the brake of the trailer, which is left standing for loading, or unloading, as the case may be.

The company's officials report that this expeditious and economical method of handling a huge amount of transfer express results in a decidedly improved service to the public.

Nova Scotia has won a boat race in the U.S.A. and an apple prize in England. If this had been in the old days, the whole province would have celebrated by everybody going off on a free ride on the Intercolonial Ry.—Manitoba Free Press.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertisers contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Canadian Cleveland Fare Box Co., Preston, Ont., has been appointed Canadian agent for Arthur Power-Saving Recorder Co., New Haven, Conn., also manufacturers' distributors for Canada for C. L. Downey Co., coin counting and coin sorting machine manufacturers, Cincinnati, Ohio, and for the Nelson rapid ready change carriers.

Standard Underground Cable Co. of Canada, Hamilton, Ont., has issued a booklet, "Standard Rubber Insulated Wire," describing and illustrating its N.E.C. Standard.

Guy Tombs, Ltd., transportation agent, Montreal, has appointed Nagle & Wigmore as its representative at St. John, N.B., and will represent that firm in Montreal.

Canadian Ingersoll-Rand Co., Sherbrooke, Que., has issued the following illustrated bulletins: K311, air or gas compressors, power driven, single stage, straight line; K602A, Circo direct vertical lift air hoists; 7057C, Cameron centrifugal, single stage, double suction fire pumps.

Transportation Conventions in 1923.

Jan. 23.—American Wood Preservers Association, New Orleans, La.; S. D. Cooper, Atcheson, Topeka & Santa Fe Rd., Topeka, Kan.
May 1 to 4.—Air Brake Association, Denver, Col.; F. M. Nellis, 165 Broadway, New York.
June 18.—American Train Dispatchers Association, Chicago; C. L. Darling, 1810 Mallery Building, Chicago, Ill.

Indian Locomotives.—In pursuance of the policy adopted last year by the Government of India, to gradually develop Indian facilities for the manufacture of railway rolling stock and other equipment, tenders have been invited, for the construction in India, and delivery by March 31, 1924, of 5½ ft. gauge superheated locomotives to the British Engineering Standards Association types, 0-6-0 goods, and 2-8-0 heavy goods.

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

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Equipment for Sale advertisements, 4c. per word.
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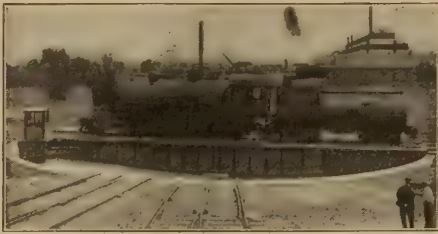
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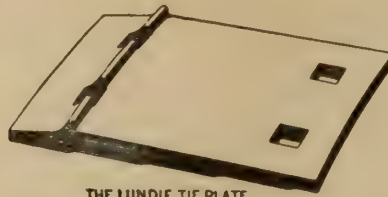
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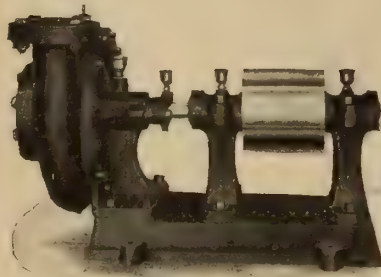
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Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, acting Chairman, 805 Boyd Bldg., Winnipeg, Man.

Canadian Electric Railway Association—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal. Western Lines, F. W. Thompson, acting Chairman, 805 Boyd Building, Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal. Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke Street, Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Office, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal. Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorrfler, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Building, Winnipeg, Man.

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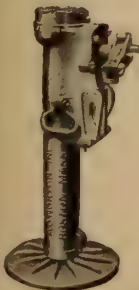
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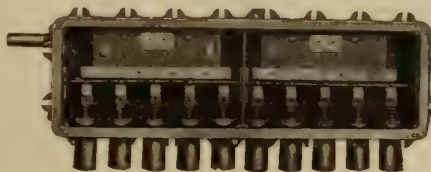
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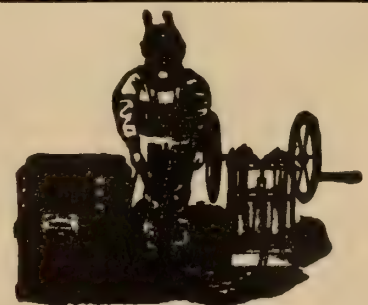
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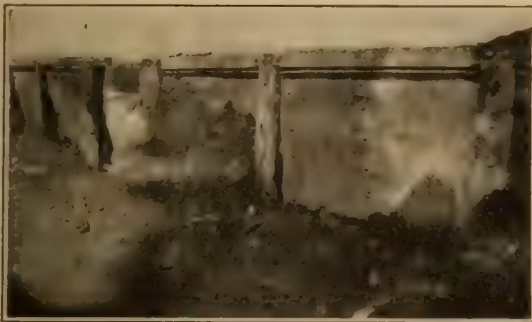
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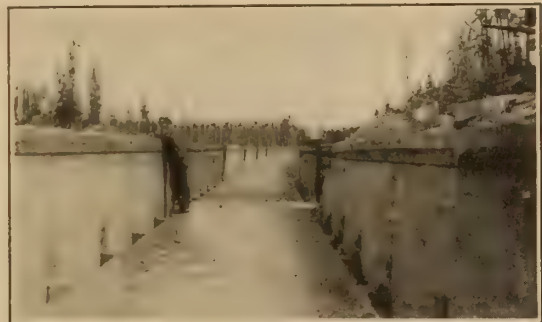
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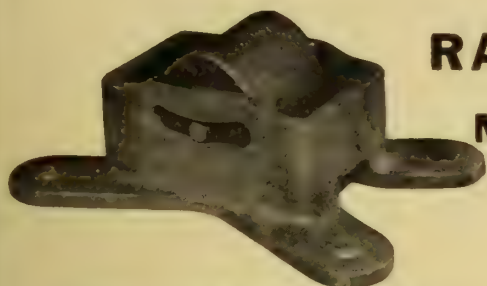
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Number 300.
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TORONTO, CANADA, FEBRUARY, 1923

See page 61 for
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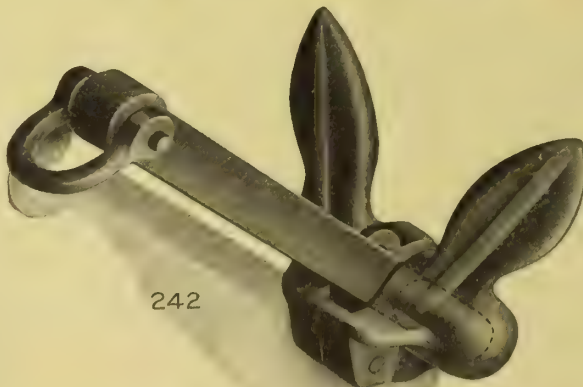
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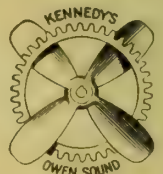
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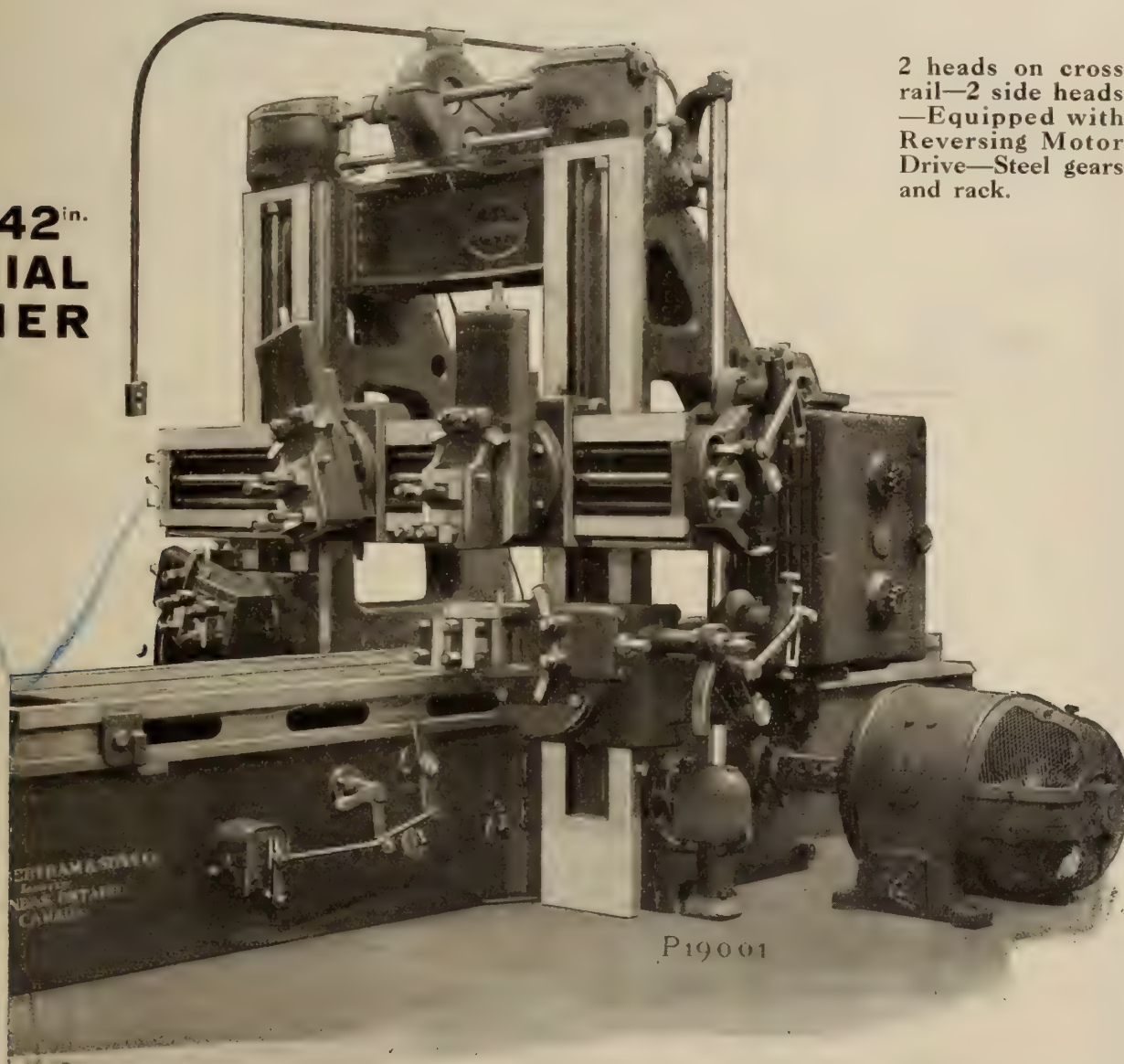


The BERTRAM MACHINE TOOLS

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SPECIAL
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2 heads on cross
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Reversing Motor
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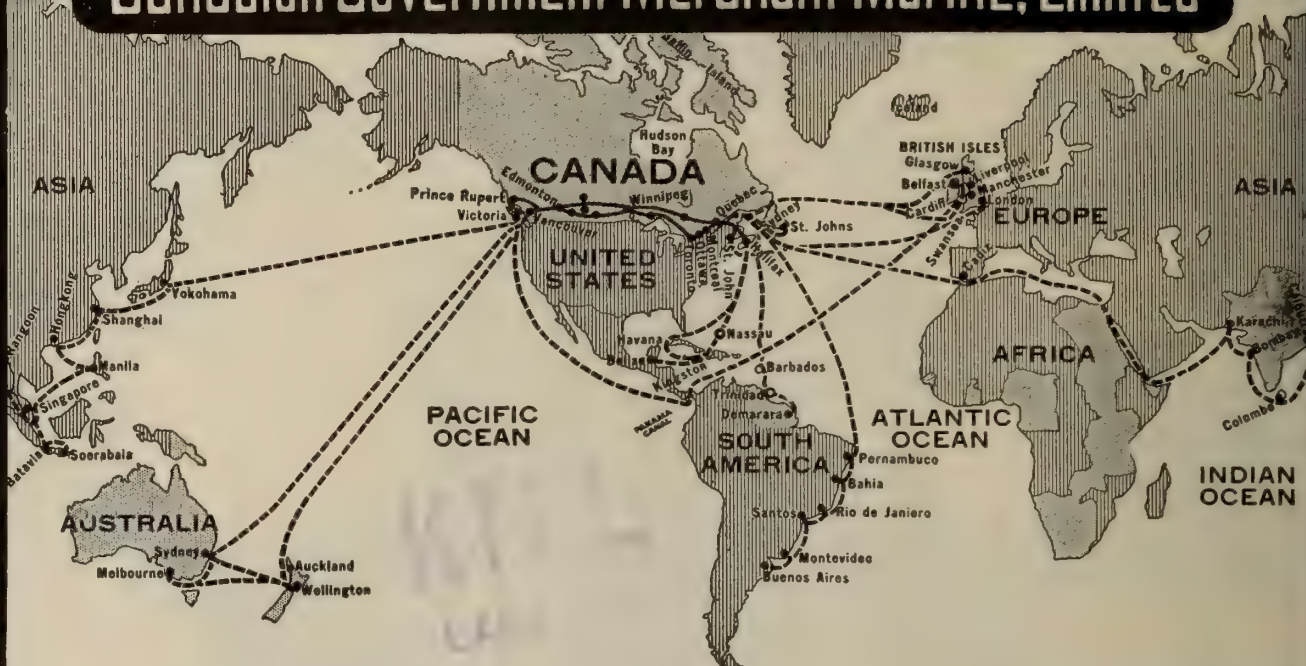
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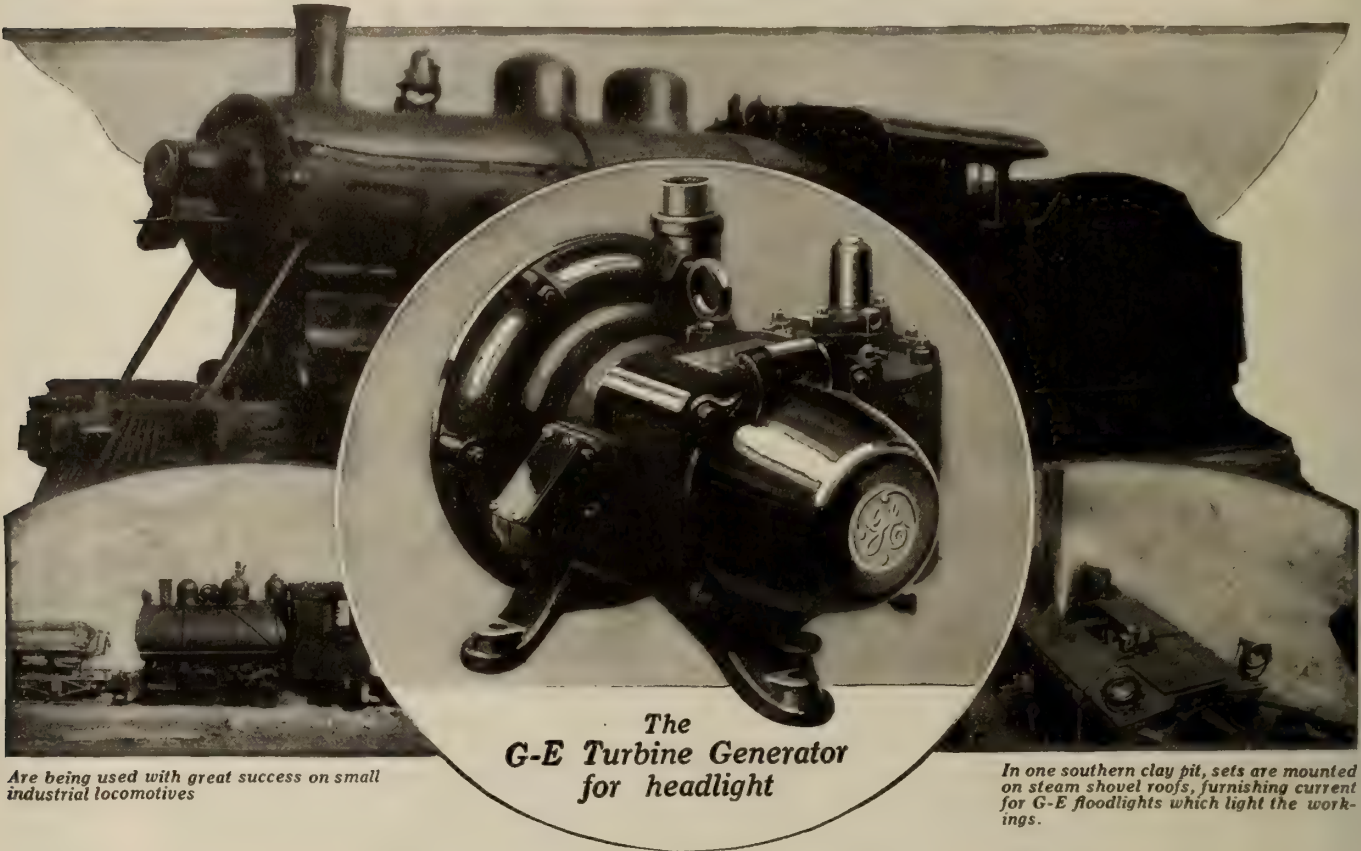
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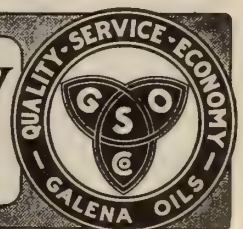


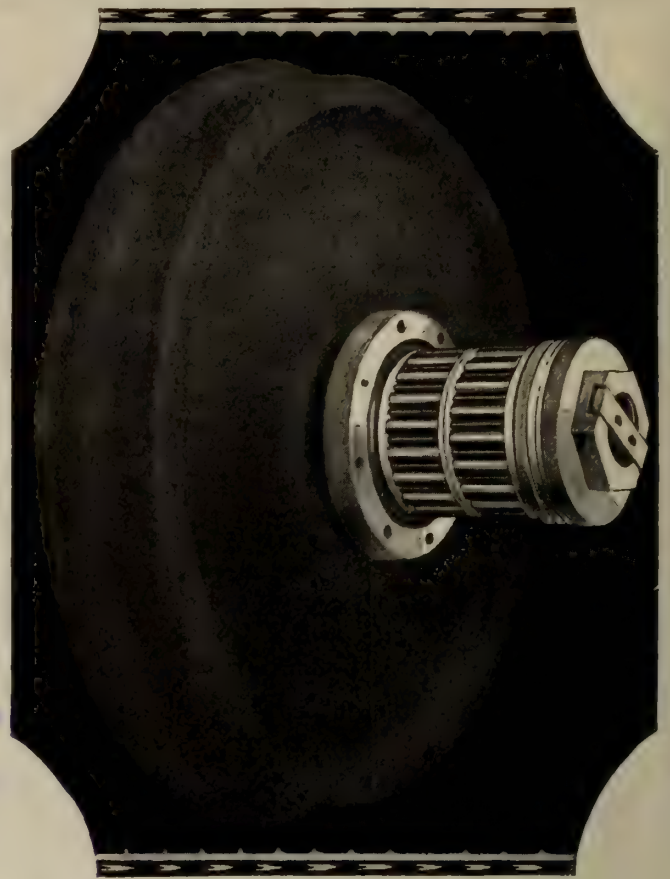
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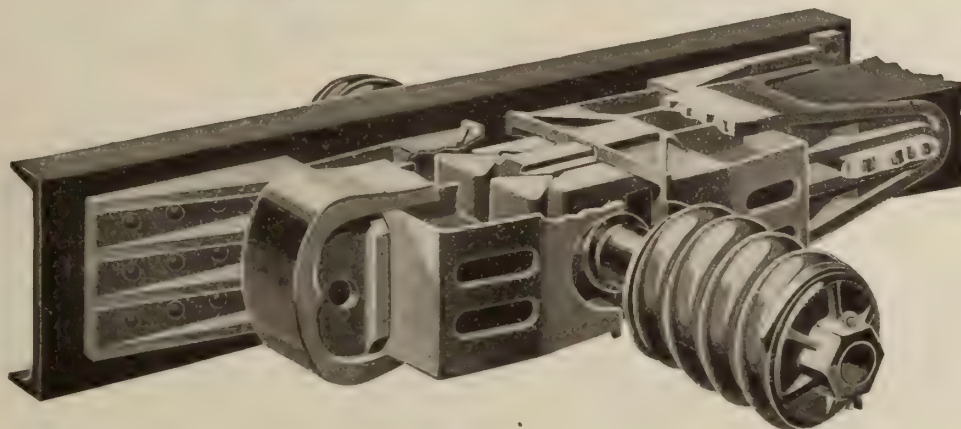
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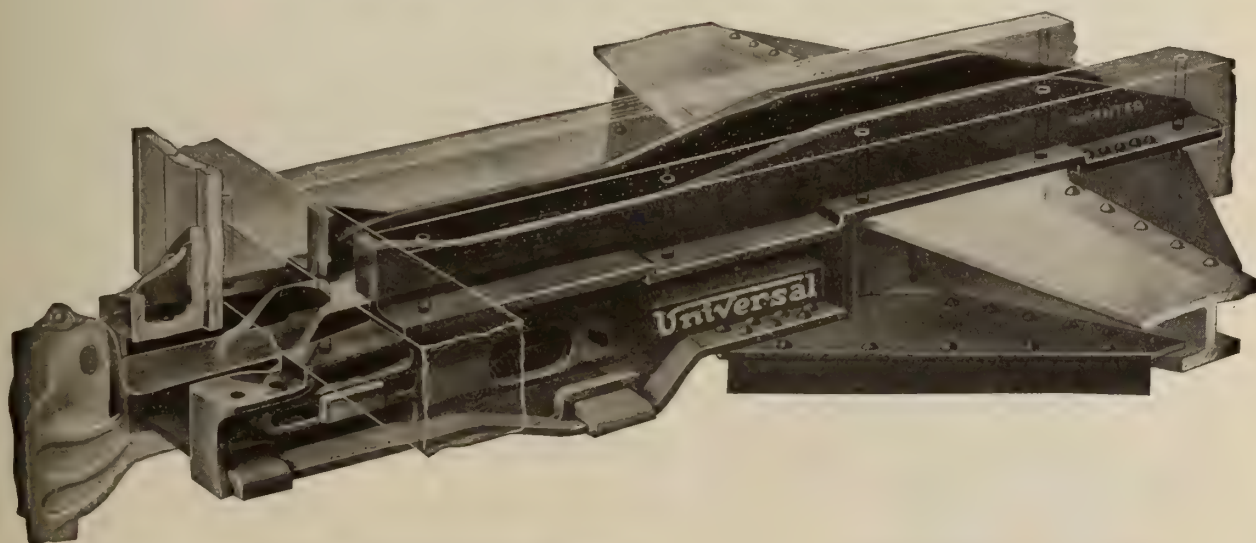
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This factory—equipped with every modern facility and manned by skilled, experienced labor—manufactures by the most advanced processes, the latest, approved designs of High Tension Porcelain Insulators. It is also planned, so far as possible, to manufacture other O-B products such as Trolley Material and Rail Bonds for Electric Railways and Mines, Electric Railway Car Equipment and Steam Road Electrification Materials.

MAY WE SERVE YOU ?

Dominion Insulator & Manufacturing Company, Ltd.

(Manufacturing Ohio Brass Company Products)

Niagara Falls - Ontario



The Q & C trade mark stamped on each of our step joints is an assurance of dependable service. For many years Q & C Rolled Steel Step Joints have been guarding the leading railroads and industries throughout the Dominion against accidents, delays and high maintenance costs.

Q & C Step Joints are made of a high grade, open hearth rolled steel.

They are reinforced both at the head and base. Each joint is pressed to make a perfect fit.

We are prepared to join any combination of "T" rails made.

Specify Q & C Rolled Steel Step Joints on your requisition.

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356 Sparks Street, Ottawa

OUR BRANCH OFFICES SPAN THE DOMINION

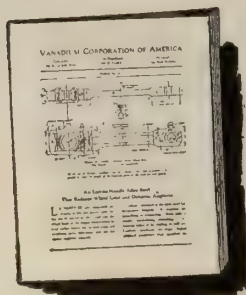


Could You Do This With *your* Forgings?

THESE forgings of Carbon-Vanadium Steel, made by the Erie Forge Company, Erie, Pa., were *bent cold* under a powerful press. They were bent this way to give you some idea of the great strength and toughness of Carbon-Vanadium Steel and its fitness for severely stressed service in reciprocating and revolving parts.

Carbon-Vanadium is a naturally tough steel. It requires neither quenching nor tempering. Heat it, cool it in still air and you have an unusually strong steel of great toughness.

Physical characteristics and composition of forgings illustrated above:



Write us for a copy of Bulletin LF-1, descriptive of Carbon-Vanadium, the non-quenched forging steel a railroad shop can handle.

	<i>Tensile Strength</i> (lbs. per sq. in.)	<i>Elastic Limit</i> (lbs. per sq. in.)	<i>Elongation</i> <i>in 2 inches</i> (Per cent)	<i>Reduction</i> <i>of area</i> (Per cent)
Round specimen	100,500	69,000	27.5	55.2
Square specimen	100,100	65,500	28	54.6

Composition

Carbon.....	.50
Manganese .....	.81
Phosphorous .....	.020
Sulphur .....	.028
Silicon .....	.170
Vanadium .....	.19

Carbon-Vanadium is the simple, unquenched alloy steel for which railroads have been waiting. Look into Carbon-Vanadium and its possibilities. Write us.

VANADIUM CORPORATION OF AMERICA

NEW YORK
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service. Capacity 20,000 per
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ASSOCIATION OF MANUFACTURERS
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THE map above shows the location of the 50 foundries in the United States and Canada, represented by the Association of Manufacturers of Chilled Car Wheels.

Chicago, 4	Sayre, Pa.
St. Louis, 2	Berwick, Pa.
Buffalo, 4	Albany
Pittsburgh, 2	Toronto
Cleveland, 2	New Glasgow, N. S.
Amherst, N. S.	Madison, Ill.
Montreal	Huntington, W. Va.
Mich. City, Ind.	Wilmington, Del.
Louisville	Houston, Tex.
Mt. Vernon, Ill.	Hannibal, Mo.
Ft. Wayne, Ind.	Reading, Pa.
Birmingham	Baltimore
Atlanta	Richmond, Va.
Savannah	Ft. William, Ont.
Boston	St. Thomas
Detroit	Hamilton
St. Paul	Ramapo, N. Y.
Kansas City, Kan.	Marshall, Tex.
Denver	Los Angeles
Tacoma	Council Bluffs
Rochester, N. Y.	

American Railroad Association Standards

650 lb. wheel for 60,000 Capacity Cars
700 lb. wheel for 80,000 Capacity Cars
750 lb. wheel for 100,000 Capacity Cars
850 lb. wheel for 140,000 Capacity Cars

The Standard Wheel for Seventy-Two Years

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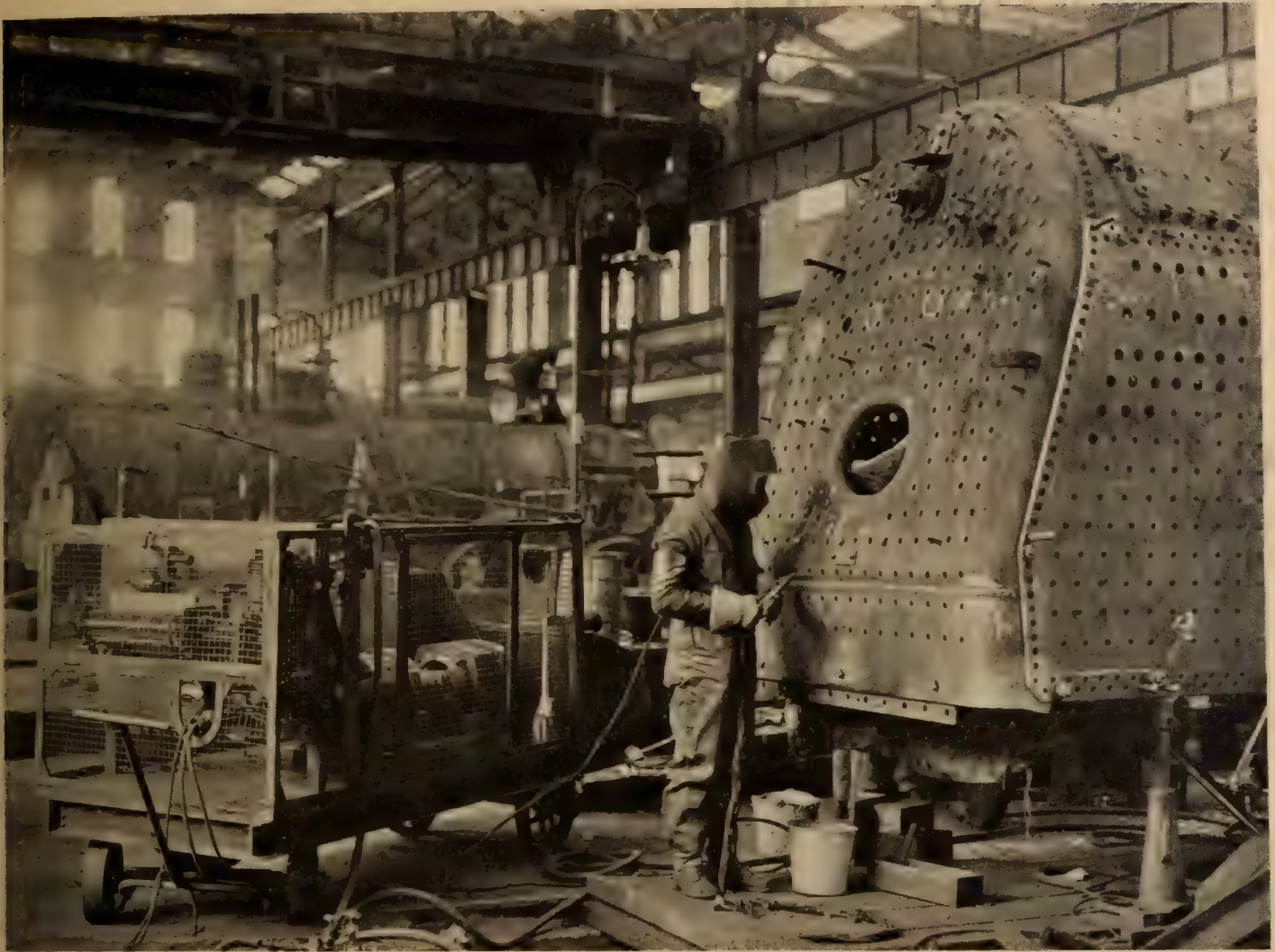
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Showing Reinforcing Steel in Harbour Head Walls.



Harbour Head Walls under construction, showing pre-moulded blocks in place.

Concrete Plays Important Part in Toronto Harbour Work

The construction of the retaining walls—for reclaimed areas of the Toronto Harbour Improvement—is one of the most interesting features of this great development work.

For the Harbour Head Walls, from Bathurst Street to Yonge Street, the structure consists of rock-filled crib work.

After the cribs were sunk in position, lined, filled with stone and allowed a reasonable time for settlement, the vertical posts were cut off and capped and the flooring laid to receive the pre-moulded concrete blocks.

The superstructure consists of pre-moulded concrete blocks 8' x 5' x 5' with sides bevelled front to back, thereby making possible a perfect alignment. After being placed and lined, the blocks

are keyed to the plank flooring and also to each other. The concrete mass, as shown in section, is placed on the blocks and tied to the latter by reinforcing steel. Contraction joints are placed every fifty feet.

The modernizing of a water-front is a type of construction work for which Concrete is pre-eminently adapted. Indeed it is almost impossible to conceive a development of the magnitude of Toronto's Harbour improvement on any other plan than that which employs Concrete for the major portion of the work.

Not only is Concrete used for Harbour Head Walls, but also for the Ship Channel Walls, as well as for the huge Bathing Pavilion—the latter a beautiful structure of Monolithic Concrete.

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Wanklyn Patent 20-21



**EASILY and QUICKLY
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"Surest and best rear end train protection ever offered"

(Endorsement of Railway Official)

OFFICIAL TEST

As reported to the Board of Railway Commission for Canada, by Chief Inspector of the Explosive Division, Department of Mines, Dominion of Canada:—

The Detonation was found to be reliable under trials, the conditions of which were more severe than those likely to be encountered in actual service.

The volume of sound is well above the average, sharp and arresting, accompanied by a brighter flash than given by any other torpedo tested, and plainly seen from the cab of the locomotive.

The detonation was not affected after the signals had been subjected to special treatment, for exposure to rain, snow, steam, saturated atmosphere and rough usage. No "dangerous" debris was projected at the trials, and the results were superior to those obtained with any other torpedo tested.

The brass wire swivel spring is of a form which renders the operation of attaching the signal to the rail simple and quick and cannot be knocked off by the wheel of the locomotive.

After tests under service conditions on the Canadian Pacific Railway, from the Atlantic to the Pacific, practical railroaders affirm that no engineman can possibly run over one of these signals and fail to recognize that a signal is intended. This opinion from men who are familiar with the use of track signals fully endorses all that has been said in favor of the "METEOR."

The "METEOR" differs from all other torpedoes. It appeals to three senses—Hearing, Seeing and Smelling—and thereby makes assurance trebly sure.

The "METEOR" has been adopted as "Standard" on the Canadian Pacific Railway over the entire 18,000-mile system, also by the Grand Trunk Railway and other Canadian Railways.

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Head Office: 120 St. James St., Montreal



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Record Performance

While checking up staybolt tap performance, one mid-western road tried out four GTD Maxitaps on regular boiler repair work, keeping records of the number of holes tapped.

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The Reason? Fifty years' experience in manufacture of taps and dies insures correct heat treatment. For example: “Maxitaps” required for repair work are differently heat treated from those required for work on new boilers. This type of service explains why Maxitaps are found in shops where dollars are carefully counted. This “personality” built in when the tap is made guarantees every “Maxitap” long life under all conditions.

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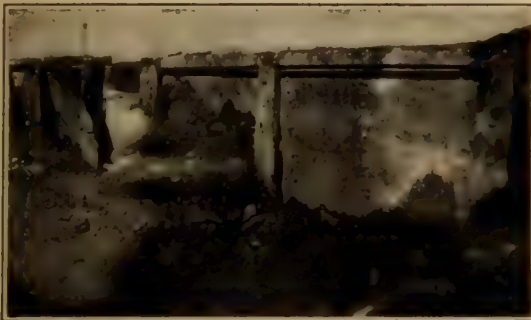
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Money that is bringing low returns on an investment you withdraw and re-invest.

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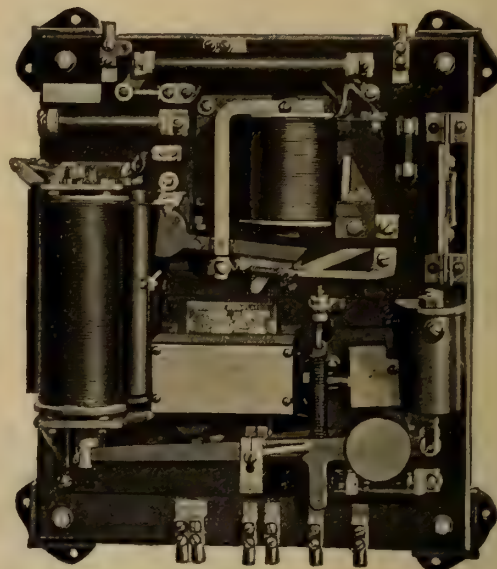
A file that is slightly dull is a low dividend earner. Scrap it, and buy a new file that bites clean and deep at every stroke. It is a better investment.

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Bowser Equipment is MADE IN CANADA by

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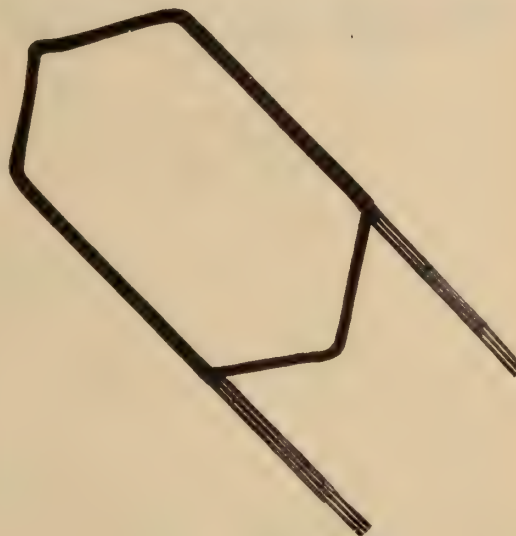
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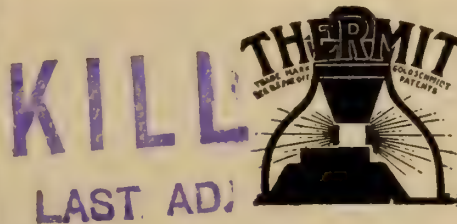
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Results of drop-tests made on 134-lb. rail sections welded by Thermit Insert method, showing fracture outside weld

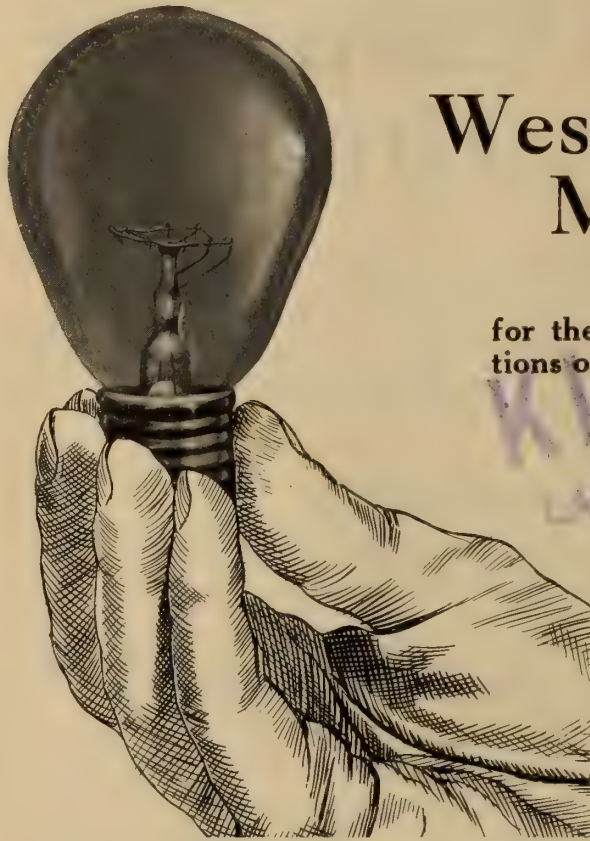


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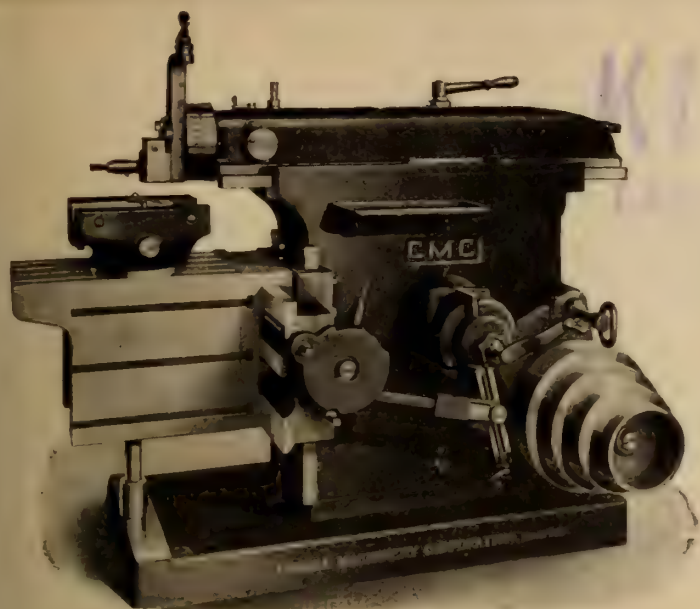
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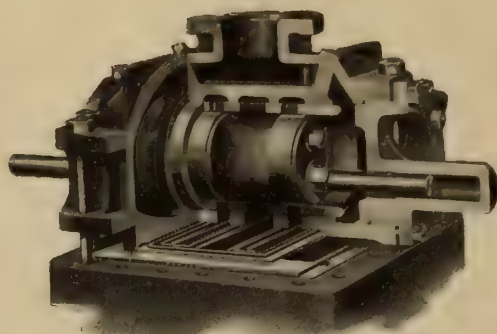


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Conversion, and all the economies conversion makes possible, can be secured without cylinder changes.

Universal Valve Chests can be easily applied on top of the old slide valve seats. This saves the cost of new frame ends, new cylinders and the cost to machine and apply them.

Universal Valve Chests make converting inexpensive and quick.

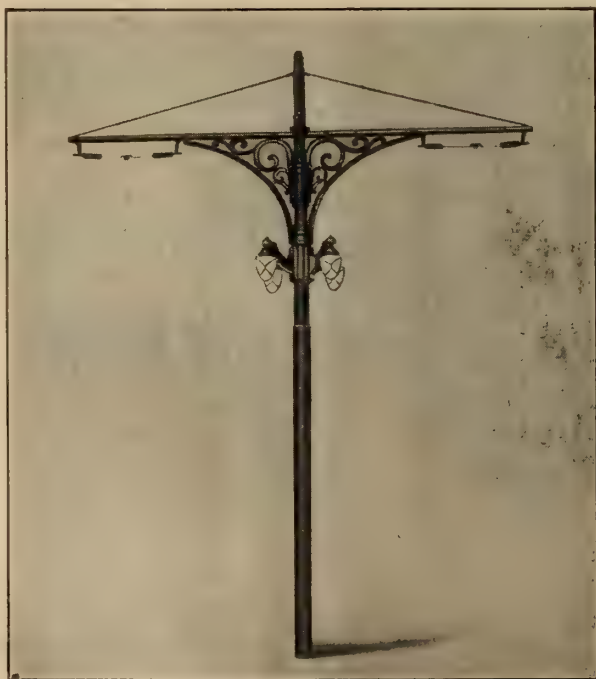
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ENDS CHAMFERED TO SHED
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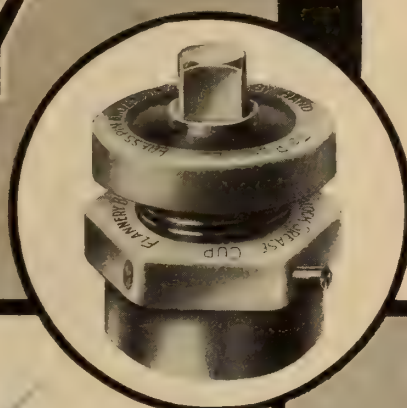
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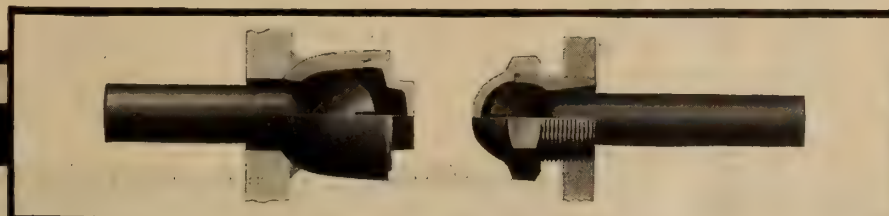
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FLANNERY BOLT COMPANY

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Reamers

With Eccentric Relief

THE cut below shows our patent eccentric relief which is an exclusive Pratt & Whitney feature. Eccentrically relieved Reamers, as made by us, have the distinguishing advantage that they can be sharpened by grinding on the face of each flute, thus retaining a true working size for a much longer period than is otherwise possible.

Pratt & Whitney Reamers are the only reamers having this eccentric relief, which should not be confused with the so-called "Eccentric tooth," which is nothing more than unequal spacing and adds nothing to the life of the tool.



—a stronger tooth—a smoother hole
—no chatter—maintained size

All P & W Adjustable Reamers have *eccentric* relief, can be set to size without regrinding and can be made to *face the bottom of a hole*.

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These reamers are made with 12 different sizes of bodies giving an adjustment from .020 to .060 in., according to the diameter. Shell, hand or chucking reamers with the same number of body have interchangeable nuts, shoes, screws and wrenches. Shell and chucking reamers with the same number of body have interchangeable blades also.

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1205 McArthur Bldg.

Canadian Railway and Marine World

February, 1923

Gasoline Motor Passenger Car for Grand Trunk Railway.

The developments which have taken place in the self propelled car field on Canadian railways in 1921 and 1922, as recorded in Canadian Railway and Marine World from month to month, were most important, and it certainly must be evident that the self propelled car has established for itself a definite place in the rail transportation industry. The operation of branch lines by steam locomotives and train has long been a losing proposition, and electrification of those lines has been, and is, an economically undesirable undertaking, by reason of the very feature which made steam operation unprofitable, viz., light traffic density. In the self propelled car, equipment to handle the traffic offering

durability. The car will have the following dimensions:

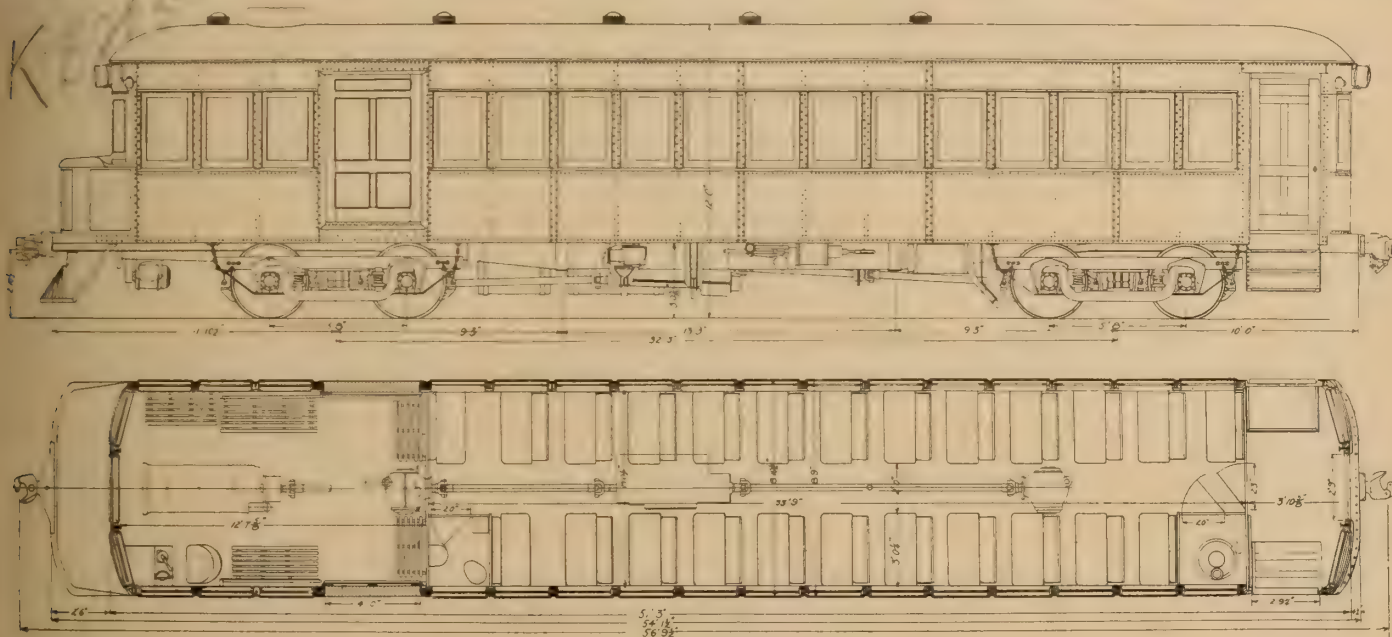
Length over end sills.....	54 ft. 1½ in.
Width over side sheathing.....	8 ft. 9 in.
Height top of rail to floor.....	3 ft. 9½ in.
Height top of rail to roof.....	12 ft. 0 in.
Height top of rail to center of couplers.....	2 ft. 10½ in.
Center to center of bolsters.....	32 ft. 3 in.
Truck wheel base.....	5 ft. 8 in.
Seating capacity, passenger compartment.....	48
Seating capacity, baggage compartment.....	10
Total capacity, standing and seated.....	100
Baggage allowance.....	10,000 lb.
Weight.....	40,000 to 45,000 lb.

Underframing.—The center sills will be of the fish belly type, continuous from end sill to end sill, spaced 36 in. apart, with 5/16 in. web plate, with 3 x 3 x ¾ in. top and 3½ x 3 x ¾ in. bottom angles. The bolsters, arranged for roller side

ilar manner to the sides, and the car will be insulated with ¾ in. salamander.

The roof will be of the single arch type. The carlines, of flat steel bars bent to the roof contour, will be riveted to the side plates by angle connections, and will have wooden furring bolted on for the application of the ceiling and roof boards. The roof boards will be of ½ in. thick poplar, tongued and grooved, laid longitudinally and nailed to the carline furring. The roof boards will be covered with canvas well bedded in white lead.

The floor will be of double ¾ in. tongued and grooved long leaf yellow pine, laid longitudinally, with a layer of tar paper applied between the two



Gasoline Railway Motor Car, Grand Trunk Railway.

with profit, or with a large decrease in operating loss, has been developed, and because it is economically justified, it is reasonable to expect that even greater development will take place in the self propelled car field in the future than in the past. That such will be the case, is clearly indicated by the G.T.R. management's action in ordering a gasoline motor car which will be of large capacity, and which will be driven by a power plant with an output greatly in excess of anything yet attempted along similar lines in the Canadian or U.S. railway field. The car will be completely equipped with the standard A.R.A. car and locomotive devices, and with safety appliances in accordance with Interstate Commerce Commission regulations. The wheels and trucks will be of heavy construction, in order to hold the track well, and furnish riding comfort at high speeds. The body will be made of special steels, to afford lightness with strength, and efficient design will afford low center of gravity. The drive will be of simple construction, designed with heavy overload capacity, and with a special view to

bearings, will be built up of pressed steel diaphragms, with 9 channel center fillers and 14 x 5/16 in. top and bottom cover plates. The center plate will be of cast steel. The cross bearers will be of pressed steel diaphragms with 6 x ¼ in. top and bottom cover plates, and the floor supports will be three 6.7 lb. rolled steel Z bars securely riveted to the center and side sills. The side sills will be of 5 x 3 x ¾ in. rolled steel angles riveted to bolsters and cross bearers.

The sideframing will include side posts, which will be fabricated of rolled steel angles placed back to back, riveted to the side sills and side plates. The corner posts will also be rolled steel angles placed back to back, and the end posts will be rolled steel I beams. The side plates will be rolled steel angles, continuous from end to end of car, and the sides of the body will be straight sheathed outside with no. 16 patent levelled sheet steel, riveted to the side posts, side sills and belt rail. The joints in the side sheathing will be covered with sheet steel splice plates. The front and rear ends will be sheathed in a sim-

ilar manner to the sides, and the car will be insulated with ¾ in. salamander.

Doors and steps.—There will be a single sliding door at each side of the car in the baggage compartment, with a 4 ft. opening; a passenger compartment door on each side at the rear end of car, arranged to swing in, with a 2 ft. opening, and a swinging door in the rear vestibule for use when a trailer is attached. The doors will have glass in the upper panels, protected with vertical steel bars. At each baggage compartment door, a steel stirrup will be riveted to the side sill. At the passenger compartment doors, stationary oak steps, with steel hangers and fenders, will be provided, the step treads to be equipped with 3 in. safety tread. The step openings will be provided with trap doors.

The interior of the car will be divided by a partition equipped with a swinging door, giving a 22 in. clear door opening into a passenger and a baggage compartment. The seats in the passenger compartment, arranged transversely, as shown in the accompanying drawing,

will be upholstered in green plush, and the seat backs will be equipped with bronze grab handles. The inside finish will be in cherry, with the ceiling, and the side lining below the window sills in the passenger compartment, of $\frac{1}{4}$ in. agasote. A wood housing, flashed with galvanized iron, will be provided over the engine, and an air duct connected to this housing will take the fumes from the engine. The interior will be equipped with a lavatory, complete with hopper, wash stand and mirror, and a drinking water fountain with gravity tank. Each side of the body will have 16 windows, and each end of the body 3 windows. The window sash will be of cherry. All side sash and sash over the radiators will raise, and the vestibule sash will be arranged to drop. All windows will be equipped with storm sash. Sash fixtures will be of bronze, and window sill capping will be of no. 16 sheet steel. Window shades will be applied to all windows, and will be of silk faced pantasote. Additional interior equipment will include a conductor's bronze bell, with loose hammer attachment at the front end, connected with a bell chain the full length of the car, and two fire extinguishers will be provided, to be carried in the baggage compartment. An emergency tool box will also be provided.

Exterior equipment will include a light weight locomotive type pilot fitted to the front of car, five ventilators on the roof, one opening into the baggage compartment and the other four into the passenger compartment, front coupler of A.R.A. engine type, attached to cast steel radiator support, rear coupler with A.R.A. head with riveted wrought yoke and spring draft gear, air sanding apparatus, Westinghouse semi-automatic air brake system with clasp brakes, Westinghouse air compressor driven by power take-off from transmission, and standard classification and marker lamp and flag brackets.

The trucks will be of the pedestal type, with swing motion bolster, as shown, the truck frames to be of 6 in. structural channels, with structural angle transoms, securely riveted. The pedestals and equalizer spring caps will be of cast steel. There will be 2 forged steel equalizer bars on each side of the trucks, resting on top of the journal boxes, with cast steel equalizer spring seats. The truck bolsters will be built up of structural channels and plates, with cast steel center plates and roller side bearings, and the bolster spring caps, seats and rockers will be of cast steel. The trucks will be equipped with 36 in. diam. steel tired wheels, with cast steel spoke centers, and the o.h.s. axles will be arranged for roller bearings. The journal bearings will be of the Stafford roller type, with roller end thrust, and the journal boxes will be cast steel. Each truck will be equipped with 2 triple elliptic bolster springs and 4 helical equalizing springs.

Heating.—The car will be heated by a hot water heater, which, together with the coal box, will be located in a separate compartment between the baggage room and lavatory. Hot water pipes will be located along each side of the car, under the seats.

The lighting equipment will include a U.S.L. type F generator with chain drive from the engine, and a 16-cell U.S.L. battery. There will be 2 lamps in the baggage compartment, 8 pendant lamps in the passenger compartment, and 2 rear vestibule lamps. Each end of the car will be equipped with a headlight,

mounted in brackets on the letter board as shown.

The power plant.—The engine will be a Sterling, Dolphin type, 6-cylinder gasoline engine, with cylinders $5\frac{1}{4}$ in. bore and $6\frac{1}{2}$ in. stroke. The power rating will be as follows: at 800 r.p.m., 116 h.p.; at 1,000 r.p.m., 144 h.p.; at 1,200 r.p.m., 180 h.p.; at 1,400 r.p.m., 205 h.p.; at 1,600 r.p.m., 225 h.p. The cylinders of this type of engine, cast in pairs, are of the overhead valve type with detachable cylinder heads, and are made of high tensile strength special cylinder iron. The water jackets extend to the base flange, affording uniform cooling, and the cylinder wall is skirted into the upper base, so as to give the piston guidance the full length of the stroke. The upper base is a single iron casting, and the main bearings, carried in this upper base, are strongly ribbed and attached to the cylinders, relieving the outer shell of explosion stresses. The lower base is a single casting of semi-steel, with integral lugs for supporting and attaching the engine to the foundation. The lower base extends the full length of the engine, enclosing the flywheel, and the flywheel housing clears the inside of the foundation. The pistons are of aluminum, the piston pins of steel, and the long connecting rods, of I beam section, are of special steel, drop forged and double heat treated. The rods are 14 in. long on centers. The main bearings are $3\frac{1}{2}$ in. long and $2\frac{1}{2}$ in. diam. The intermediate and end main bearings are unusually large, while all bearings are line reamed and worked in by hand. The crankshaft is a drop forging of chrome nickel steel, equipped with counterbalance weights opposite the throws, dynamically balanced, and has a tensile strength of 115,000 lb. A characteristic of these engines is the large valve area; there are 2 inlet and 2 exhaust valves for each cylinder, and the fact of the water jacket being continuous around the seat ensures uniform cooling. The rocker arms are drop forged, the push rods, enclosed, are of steel, fitted with large roller for cam action, the camshafts are drop forgings, the push rod guides are of bronze, and removable, the crankshaft and camshaft gears are steel drop forgings and are helical, and the other timing gears are of phosphor bronze. On the exhaust side of the engine is a bronze water circulating pump, with positive shaft drive. An oil circulating pump of gear type, driven from the camshaft through spiral gears, is also provided, as is also an oil supply pump of the plunger type, attached to the top of the base and driven through worm gearing on the camshaft. With the engine, a special type gasoline pump will be provided. The gasoline will be carried in two 50-gallon tanks supported beneath the car body. The engine will be equipped with a northeast generator with U.S.L. battery for ignition. In these engines lubrication is by pressure feed through the camshaft, the pump taking oil from the tank in the lower base casting. The oil is returned to the supply tank by 2 scavenging pumps, which pick it up through strainers from either end of the engine. It is claimed that the engine will operate on a 45% grade without affecting the lubrication. The engine will be equipped with a northeast type 32-volt starting system with gears enclosed.

A Stromberg carburetor will be employed. The engine and clutch will be mounted on a frame hung between the center sills, with standard 3-point sus-

pension. This will be arranged so that the entire frame, engine and clutch can be removed through the end of the car by unbolting the front striking plates. The clutch will be of the multiple disc type, running in oil, and the universals, of the all-metal type, will be such that all angles will be reduced to less than 5 degrees on 23 degree curves. The transmission will provide for 4 speeds forward and 3 reverse, and will be of sliding gear type, with a special arrangement cutting off the load when changing gears. The rear truck will be direct connected without gears in high speed. As the drive will be through the leading axle of the rear truck and the trailing axle of the front truck, power will be transmitted to the trailing axle of the front truck through a jackshaft, which may be thrown out of engagement when little tractive effort is necessary. The gear ratios will be as follows: low, 5.19 to 1; 2nd, 2.7 to 1; 3rd, 1.67 to 1; high, 1 to 1.

The drive will be through spiral bevel gearing pressed on the driving axles, with keys. The gearing will be enclosed in cast steel 2-part housings, with ball bearings on the axles, all parts running in oil or grease. The ratio of the bevels will be approximately 3 to 1, giving a speed of 36 m.p.h. at 1,000 r.p.m. of the engine. To relieve the shock of starting and stopping, the gear housings will be fitted with cast steel torque arms, rubber cushioned and suspended to the truck equalizer bars. The car will have sufficient tractive power to pull a trailer of equal capacity or a loaded 50-ton box car. With the gear ratios as above indicated, the following speeds will be obtainable:

R.P.M. of motor.	High.	3rd speed.	Miles per hour.	
			2nd speed.	1st speed
1800	63	37.8	23.4	12.15
1400	49	29.4	18.2	9.45
1200	42	25.2	15.6	8.1
1000	35	21	13	6.75
800	28	16.8	10.4	5.4
400	14	8.4	5.2	2.7

The first, second and third speeds will be reversible. The car is being built by the National Steel Car Corporation, Hamilton, Ont.

Fast Runs on Michigan Central Railroad.

That the M.C.R.'s Canada Division is continuing to live up to its reputation in connection with motive power performance, is shown by some runs which were made lately. We are officially advised that on Dec. 26, 1922, train 15 made the trip between Bridgeburg and Windsor, 224 miles, in 205 min., the 114 miles from Bridgeburg to St. Thomas being done in 110 min., and the 110 miles between St. Thomas and Windsor in 95 min. The average speed between Bridgeburg and St. Thomas was 62.18 m.p.h., and between St. Thomas and Windsor, 69.46 m.p.h. We are further advised that on Dec. 30, train 15 covered the distance between St. Thomas and Windsor in 99 min., the average speed being 66.66 m.p.h. There is nothing unusual about such runs as the above on the M.C.R., as they are made very frequently. When trains depart late from their terminals, locomotive men are permitted to make up lost time, with the result that very often an apparently exceptional run is made.

The G.T.R. Repair Shop at Mimico, Ont., terminal yards, was destroyed by fire, Jan. 3, the damage being estimated at \$10,000.

The Hudson Bay Railway's Condition and Future.

The question of whether or not the long-projected railway to give the prairie provinces an outlet to a port on Hudson Bay, will be completed, is the subject of considerable discussion in Winnipeg, Regina, Saskatoon, and other middle-west centers. The matter was brought into prominence by a statement said to have been made by Major Graham A. Bell, Deputy Minister of Railways and Canals, at the end of Dec. 1922, that 120 miles of the track laid on the line from mile 214 to Kettle Rapids, mile 334, would be taken up. This matter had been under consideration for some time, but the final decision was not made until the Governor-General, on Nov. 4, 1922, approved of the following, which was passed as an order in council: "The Committee of the Privy Council have had before them a report, dated Nov. 22, 1922, from the acting Minister of Railways and Canals, representing, in connection with the operation of the Hudson Bay Ry., that the Vice President and General Manager of the Canadian National Rys. has submitted a report to the board of directors, relative to the advisability of lifting the rails between miles 214 and 334, consisting of 120 miles of no. 1, 80 lb. rails, the same to be used on the mainline subdivision between Vermillion and Edmonton, to replace 60 lb. rails requiring renewal.

"With reference to the traffic offering on the Hudson Bay Ry., and the condition of the line beyond mile 214, the Vice President advises, as follows: 'The steel rails have been laid on this line from Pas, a distance of 334 miles, to Kettle Rapids bridge, and a fortnightly service is being given as far as mile 182, with occasional trips to mile 214, but even with this restricted service there has been very little traffic to handle. There are some mining prospects being developed between Pas and mile 182, which involves the movement at times of a small number of men and small quantities of supplies, and there appears to be a possibility of securing a limited amount of fish as far as mile 214, but everything indicates that there is at present little or no traffic to be secured beyond the latter point. The track between miles 214 and 334, due to the heaving of bridges, washouts and settlement of dumps, is impassable, and temporary repairs, which are estimated will cost about \$16,000, are now under way, in order to permit the removal of material, consisting of rails, rail fastenings, ties, lumber, etc., which have been held at points along the line between mile 214 and mile 334, pending decision as to laying of track beyond mile 334. This material is now being brought out, as it can be used to advantage at other points along the system, and because, if left in its present location any longer, it would deteriorate very rapidly and the ties and lumber become valueless.'

"Based upon the Vice President and General Manager's report, the board of directors, at a meeting held on Oct. 20, 1922, passed the following resolution: 'It was unanimously resolved that in the opinion of the directors, the rails between miles 214 and 334 of the Hudson Bay line should be taken up; and that a recommendation of the directors to this effect be sent to the Governor in council, so that if approved by him, such recommendation be carried out as soon as possible.'

"The Minister, upon the advice of the

said board, concurred in by the Deputy Minister of Railways and Canals, accordingly recommends that authority be granted to take up the track on the Hudson Bay Ry. from mile 214 to mile 334, and to use the material therefrom at such points upon the Canadian National Rys. as the said Board may deem expedient. The Minister observes that until such time as the financial condition of the country would warrant the completion of the Hudson Bay Ry. project, the using of the lifted rails on another portion of the system would appear to be an economical procedure, as, if left where they are, they would in a short time deteriorate to such an extent as to become of no value. The committee concur in the foregoing recommendation and submit the same for approval."

Prairie members of Parliament are reported to have been conferring with each other, and with various interests, for the purpose of arriving at some conclusion as to how far they may go in pressing for the completion of the railway to Port Nelson. Meetings have been held at different centers west and north of Winnipeg, and others are being arranged, for the purpose of stimulating interest in the project.

The Lieutenant Governor's speech at the opening of the Manitoba Legislature on Jan. 18, contained the following paragraph: "In view of the fact that the expenditure required to complete the Hudson Bay Ry. is only a fraction of the amount expended already on the construction of 332 miles of it, including two steel bridges over the Nelson River; that the delay in proceeding with the laying of steel on the remaining 92 miles, on which grade construction was completed several years ago, has resulted in deterioration of the work done, which, if allowed to continue, will cause serious loss and necessitate greater ultimate expenditure, and that provision was made many years ago by the Dominion Government for defraying the whole cost of construction out of the sale of western land, a resolution will be submitted to you declaring that the completion of the railway should be proceeded with as a matter of vital importance to western Canada, without delay."

The matter was brought before Sir Henry Thornton, President, Canadian National Rys., during his visit to Regina, Saskatoon and other points recently, and he is reported to have stated that it was intended to appoint a Vice President who would deal with the development of the natural resources of the western provinces, and make a thorough inspection and investigation of the Hudson Bay Ry. That there was some misunderstanding of his statement is evident from the fact that at Saskatoon, on the following day, he is reported to have said: "The problems concerning the completion or otherwise of the Hudson Bay Ry. I will deal with personally. I realize that the question of the H. B. Ry. in particular, and transportation and terminal ports in general, are of great interest to the people of the west. It will be one of my first duties to enter into a close consideration of the H. B. line." He is further reported to have said it would be waste of money for the H. B. line to be discarded entirely if the route is really feasible and its ports of practical worth. He added that no rails were being removed from the line, except for the purpose of preserving them.

British Columbia's Appeal of Freight Rates Decision.

British Columbia has appealed to the Dominion Government from the Board of Railway Commissioners' decision in the equalization of rates case, as affecting that province, which was given in Canadian Railway and Marine World for Aug. 1922, pg. 398. It was expected that the appeal would be heard in Ottawa on Jan. 24, but an Ottawa press dispatch of Jan. 23 stated that, while Premier Oliver, of British Columbia, and G. G. McGeer, counsel for the province, had arrived in Ottawa Jan. 23, the railways were not ready to begin, and a date for the hearing had not been set. It also stated that Premier Greenfield of Alberta had telegraphed Mr. McGeer that the Alberta Government would join with the B.C. Government in the appeal. Alberta was not allied with British Columbia in the proceedings before the Board last year, but the situation now apparently is that the development in the export of western grain through Vancouver, and other traffic considerations, has convinced Alberta that her interests are identical with British Columbia's in the matter.

A Winnipeg press report of Jan. 20 stated that the Winnipeg Board of Trade would oppose British Columbia's appeal, and that Isaac Pitblado, K.C., had been retained to represent it at the hearings.

United States Railways' Financial Results.

The net operating income earned by U.S. class 1 railways in Nov. 1922, \$78,869,080, representative of an annual return of 4.46% on the tentative valuation, was much larger than in August, September or October, when earnings were at the annual return rate of but 2.65%, 2.88% and 4.05%, respectively. Gross operating revenues for November were \$523,011,686, compared with \$465,933,394 in Nov. 1921; operating expenses were \$409,453,212, compared with \$368,087,471 in Nov. 1921; and net earnings were \$113,558,474, compared with \$97,845,923 in Nov. 1921, making an operating ratio in Nov. 1922 of 78.29, compared with 79 in Nov. 1921. For the first 11 months of 1922, net railway operating income for the U.S. class 1 roads was \$693,212,406, compared with \$566,281,878 for the first 11 months of 1921. An encouraging factor in the Nov. 1922 results is that they were more favorable than in Nov. 1921, while the results for August, September and October 1922 were not as good as in corresponding months of 1921. Results in the first half of 1922 were much better than in the first half of 1921, and with the shopmen's strike over and traffic still moving in large volume, the feeling exists in U.S. railway circles that the more favorable returns, beginning with Nov. 1922, will continue.

Railway Lands Patented.—Letters patent were issued during Dec., 1922, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres
Albertan & Great Waterways Ry.....	164.47
Calgary & Edmonton Ry.....	316.70
Canadian Northern Ry.....	53,426.00
Canadian Northern Western Ry.....	4.12
Canadian Pacific Ry. grants.....	174.24
Canadian Pacific Ry. roadbed and station grounds.....	10.14
Total.....	54,095.67

Railway Rolling Stock Orders and Deliveries.

The Timiskaming & Northern Ontario Ry. has received 4 locomotives which have been rebuilt by Canadian Locomotive Co.

The C.P.R., between Nov. 14 and Dec. 16, ordered a single track, steel under-frame flanger, to be built at its Angus shops, Montreal, and bought 2 Jordan ballast spreaders.

The G.T.R. has received a steel under-frame from Canadian Car & Foundry Co., for mail car 48, under construction at the G.T.R. Point St. Charles shops, also 11 steel underframe cabooses from its Montreal shops.

The Brazilian Railway Board's mikado (2-8-2) locomotive, 39 $\frac{3}{4}$ in. gauge, details of which were given in Canadian Railway and Marine World for Oct., 1922, page 528, has been delivered by Montreal Locomotive Works.

The C.P.R. has ordered 16 Pacific type locomotives from American Locomotive Co., and has made enquiries for the following additional rolling stock:—12 combination mail and baggage cars; 6 cafe parlor car frames; 6 buffet car frames; 300 composite coal cars, 75 tons capacity; 50 oil tank cars, 50 tons capacity;

Flues, diam.5 $\frac{1}{2}$ in.
Grate area16.16 sq. ft.
Heating surface, tubes and flues.....415 sq. ft.
Heating surface, firebox.....86 sq. ft.
Heating surface, total.....501 sq. ft.
Superheater heating surface.....95 sq. ft.
Water capacity1,560 gall.
Fuel capacity2 tons

As will be seen by the accompanying illustration, the locomotive is labelled Abitibi Railway & Navigation Co., as some of the company's other rolling stock is. That was the name under which it was originally proposed to incorporate, but the company was incorporated as Abitibi Transportation & Navigation Co., as stated in Canadian Railway and Marine World at the time.

Canadian National Railways' Orders.

As stated in Canadian Railway and Marine World for January, R. C. Vaughan, Vice President, Purchasing, Supplies and Stores Department, C.N.R., received tenders to Dec. 14, 1922, for a large quantity of rolling stock and work equipment, and orders have since been given for 77 locomotives, 155 passenger train cars, 2,700 freight cars, 272 freight car bodies, 100 ballast cars, and a quantity of work equipment, details of which are as follows:

Locomotives.—Thirty-five mikado type

Injector.....Hancock type EA for 3,500 gall. on right side only

Trailing truck.....Commonwealth

Engine truck.....Economy

Cab.....steel, vestibule type

Eight mikado type for Grand Trunk U.S. lines from American Locomotive Co., 4 for Central Vermont Ry. and 4 for G. T. Western Lines. These will be very similar in design to the standard U.S. R.A. light mikado, and will have the following chief specifications:

Wheel base, engine, rigid.....16 ft. 9 in.
Wheel base, engine.....36 ft. 1 in.
Wheel base, engine and tender.....71 ft. 5 $\frac{1}{2}$ in.
Cylinder, diam.26 in.
Cylinder, stroke30 in.
Firebox.....114 $\frac{1}{4}$ x 84 $\frac{3}{4}$ in.
Tubes, number216
Tubes, diam.2 $\frac{1}{4}$ in.
Tubes, length.....19 ft.
Flues, number40
Flues, diam.5 $\frac{1}{2}$ in.
Boiler pressure.....200 lb.
Weight on drivers.....220,000 lb.
Tractive power.....54,700 lb.
Tender, trucks.....4-wheel
" water capacity.....10,000 U.S. gall.
" coal capacity.....16 tons
" weight loaded.....190,000 lb.
Valve gear.....Walschaert
Stoker.....Duplex
Feedwater heater.....Superheater Co.'s

Ten mountain type for Canadian National Rys., and 6 mountain type for the G.T.R., from Canadian Locomotive Co. The only available details concerning these are as follows:

Wheel base, engine, rigid.....19 ft. 6 in.
Wheel base, engine.....41 ft. 8 in.
Wheel base, engine and tender.....about 79 ft.
Heating surface, firebox and arch tubes.....348 sq. ft.
Heating surface, tubes and flues.....3,731 sq. ft.
Heating surface, total.....4,079 sq. ft.
Driving wheel diam.....73 in.
Driving wheel centers.....cast steel
Driving journals, main.....12 x 13 in.
Driving journals, other.....10 x 13 in.
Cylinder, diam.26 in.
Cylinder, stroke30 in.
Boiler, type.....radial stayed, with combustion chamber

Boiler, pressure210 lb.
Tubes, number188
Tubes, diam.2 $\frac{1}{4}$ in.
Flues, number40
Flues, diam.5 $\frac{1}{2}$ in.
Tractive power.....49,600 lb.
Tender, water capacity.....10,000 imp. gall.
" coal capacity.....15 tons
" tank.....water bottom
" trucks.....Commonwealth 6-wheel
" wheels.....34 $\frac{1}{4}$ in. diam.
" wheels.....semi-steel centers with steel tires
" frame.....Commonwealth cast steel

Feedwater heater.....Superheater Co.'s
Stoker.....Duplex
Valve gear.....Walschaert
Superheater.....Robinson
Brakes.....Westinghouse no. 6 E.T.
Safety valves.....3 World type
Injector.....Hancock type EA, for 3,500 gall. on right side only

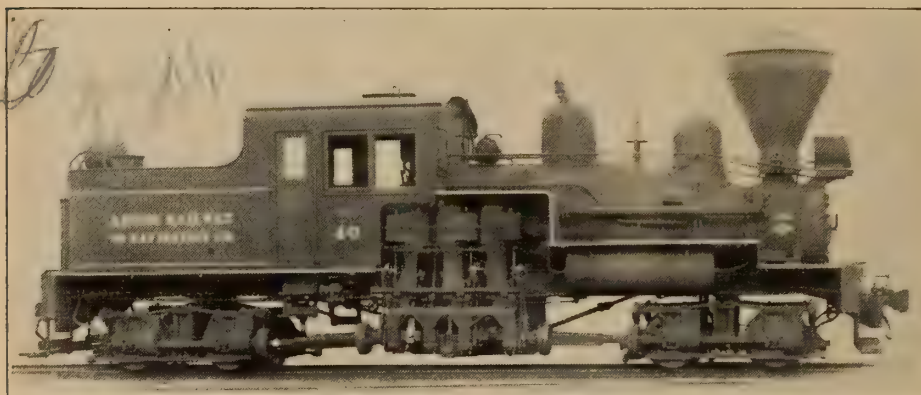
Trailing truck.....Commonwealth
Engine truck.....Commonwealth
Cab.....steel, vestibule type

Five 8-wheel switching for G. T. Western Lines, from Lima Locomotive Works, Lima, Ohio. The chief dimensions will be as follows:

Wheel base, engine.....15 ft. 6 in.
Wheel base, total.....53 ft. 4 $\frac{1}{2}$ in.
Cylinder, diam.26 in.
Cylinder, stroke30 in.
Firebox.....108 $\frac{3}{4}$ x 75 $\frac{3}{4}$ in.
Tubes, number228
Tubes, diam.2 in.
Flues, number32
Flues, diam.5 $\frac{1}{2}$ in.
Flues, length.....15 ft.
Weight on drivers.....240,000 lb.
Weight of tender.....166,360 lb.
Tractive power.....52,300 lb.
Boiler pressure.....190 lb.
Tender, water capacity.....9,000 U.S. gall.
Tender, coal capacity.....10 tons
Valve gear.....Young
Power reverse gear.....Ragonnet

Three 6-wheel switching locomotives for Central Vermont Ry., from Lima Locomotive Works, Lima, Ohio. The chief details will be as follows:

Wheel base, engine.....11 ft. 6 in.
Wheel base, total.....46 ft. 1 $\frac{1}{2}$ in.
Cylinder, diam.26 in.
Cylinder, stroke26 in.
Driving wheel diam.....56 in.



Shay Locomotive, Abitibi Transportation & Navigation Co.

300 steel underframe flat cars, 40 tons capacity.

United States locomotive builders shipped 210 new locomotives in Dec., 1922, the largest number since Jan., 1921, 194 being for domestic use and 16 foreign. The unfilled orders on Dec. 31, 1922, were 1,498 domestic, and 94 foreign. The total shipments for 1922 were, domestic, 1,056; foreign, 218; total, 1,274, against domestic, 830; foreign, 519, and total, 1,349, in 1921.

Abitibi Transportation & Navigation Co.'s Shay locomotive, which has been received at Iroquois Falls, Ont., from Lima Locomotive Works, Lima, Ohio, as mentioned in Canadian Railway and Marine World for Dec., 1922, has the following chief details:

Gauge.....4 ft. 8 $\frac{1}{2}$ in.
Fuel.....Bituminous coal
Engine wheel base.....27 ft. 2 in.
Truck wheel base.....4 ft. 2 in.
Weight, total.....96,000 lb.
Weight on drivers.....96,000 lb.
Maximum tractive power.....20,835 lb.
Factor of adhesion.....4.61
Diam. driving wheels.....29 $\frac{1}{2}$ in.
Cylinders, no.3
Cylinders, diam.10 in.
Cylinders, stroke12 in.
Boiler, diam.42 $\frac{1}{4}$ in.
Boiler, pressure.....180 lb.
Firebox, length.....54 $\frac{3}{4}$ in.
Firebox, width.....42 $\frac{1}{2}$ in.
Tubes, no.63
Tubes, diam.2 in.
Tubes, length.....8 ft. 11 in.
Flues, no.10

for Canadian National Rys. from Montreal Locomotive Works, and 10 mikados for G.T.R. from Canadian Locomotive Co. The only details concerning these available at the time of writing are as follows:

Wheel base of engine, rigid.....16 ft. 6 in.
Wheel base of engine, total.....35 ft. 1 in.
Wheel base, engine and tender.....about 68 ft.
Heating surface, firebox and arch tubes.....300 sq. ft.
Heating surface, tubes and flues.....3,297 sq. ft.
Heating surface, total.....3,597 sq. ft.
Diameter of driving wheels.....63 in.
Driving wheel centers.....cast steel
Main journals.....11 x 13 in.
Other driving journals.....10 x 12 in.
Cylinder diameter.....27 in.
Cylinder stroke30 in.
Boiler, type.....extended wagon top type
Boiler, pressure.....185 lb.
Tubes, number244
Tubes, number244
Tubes, diam.2 in.
Flues, number40
Flues, diam.5 $\frac{1}{2}$ in.
Flues, length.....18 ft.
Tender, water capacity.....8,300 imp. gall.
" coal capacity.....12 tons
" trucks.....4-wheel pedestal and equalizer type
" wheel diam.....34 $\frac{1}{4}$ in.
" wheel type.....Semi-steel centers with steel tires
" tank, style.....water bottom
" frame.....Commonwealth cast steel
" journals.....6 x 11 in.
Tractive power.....54,600 lb.
Feedwater heater.....Superheater Co.'s on 10 and Worthington on 35
Stoker.....Duplex
Valve gear.....Walschaert
Superheater.....Superheater Co.'s type A
Brakes.....Westinghouse E. T. no. 6
Safety valves.....3 World type

Truck wheel base.....	11 ft.
Tubes, diam.....	2 in.
Tubes, length.....	12 ft. 4 in.
Flues, number.....	28
Flues, diam.....	5 3/8 in.
Firebox.....	96 1/2 x 75 1/4 in.
Weight on drivers.....	175,900 lb.
Tractive power.....	36,290 lb.
Boiler pressure.....	190 lb.
Tender, weight.....	131,850 lb.
" water capacity.....	5,000 imp. gall.
" coal capacity.....	9 tons
Valve gear.....	Baker
Power reverse gear.....	Ragonnet

Passenger Train Cars.—Thirty standard steel sleeping cars for Canadian National Rys. from Canadian Car & Foundry Co., Montreal. They will have steel underframe, superstructure and sheathing, and wood and canvas roof. The chief details are as follows:

Length over end sills.....	75 ft. 6 in.
Length between truck centers.....	57 ft. 6 in.
Length over buffers.....	84 ft. 4 1/2 in.
Width over side sills.....	9 ft. 9 3/8 in.
Width over all at eaves.....	10 ft. 1 7/8 in.
Width of clerestory.....	5 ft. 11 1/4 in.
Height track to roof at center.....	14 ft. 2 in.
Height over lamp jacks.....	14 ft. 5 in.
Height, rail to eave moulding.....	11 ft. 2 1/2 in.
Height, track to sill at end.....	3 ft. 7 1/2 in.
Height, track to sill at center.....	3 ft. 9 in.

Trucks will be 6-wheel Commonwealth type, with cast steel bolsters, 36 in. steel tired wheels and 5 x 9 journals. Other things specified are: Miner A-5-P friction draft gear; Miner B-10 buffing mechanism; Westinghouse brakes, LN-18-12; Stone-Franklin lighting equipment; Vapor heating system; and an emergency hot water heating system; McCord journal boxes.

Ten mail and express cars for Canadian National Rys. from Canadian Car & Foundry Co., Montreal. They will be of steel construction, with wood and canvas roof, and will have the following dimensions:

Length over end sills.....	73 ft. 6 in.
Length between truck centers.....	57 ft. 6 in.
Length over buffers.....	77 ft. 6 in.
Width over side sills.....	9 ft. 9 3/8 in.
Width over all at eaves.....	10 ft. 1 7/8 in.
Width of clerestory.....	5 ft. 11 1/4 in.
Inside length mail compartment.....	60 ft.
Inside length express compartment.....	12 ft. 6 in.
Inside width.....	9 ft.
Height track to roof at center.....	14 ft. 2 in.
Height over lamp jacks.....	14 ft. 5 in.
Height rail to eave moulding.....	11 ft. 2 1/2 in.
Height track to sill at end.....	3 ft. 7 1/2 in.
Height track to sill at center.....	3 ft. 9 in.
Truck wheel base.....	11 ft.

Their equipment will include Miner A-5-P friction draft gear; Miner type B-10 buffing mechanism; Pintsch gas lighting system; Miner side bearings; Commonwealth all steel 6-wheel truck, with 36 in. steel tired wheels and 5 x 9 in. journals; McCord journal boxes; Vapor heating system, and Westinghouse schedule LN-18-12 brake system, with clasp brakes.

Ten standard steel first class cars for Canadian National Rys., and 25 standard steel first class cars for G.T.R., from Canadian Car & Foundry Co., Montreal. They will have steel underframe, side framing and sheathing and wood and canvas roof. Following are the general dimensions:

Length over end sills.....	73 ft. 6 in.
Length between truck centers.....	57 ft. 6 in.
Length over buffers.....	82 ft. 4 1/2 in.
Width over side sills.....	9 ft. 9 3/8 in.
Width over all at eaves.....	10 ft. 1 7/8 in.
Width of clerestory.....	5 ft. 11 1/4 in.
Height track to roof at center.....	14 ft. 2 in.
Height rail to eave moulding.....	11 ft. 2 1/2 in.
Height track to sill at end.....	3 ft. 7 1/2 in.

Equipment will include Commonwealth 6-wheel trucks, with cast steel bolsters; 36-in. steel tired wheels and 5 x 9 in. journals; Westinghouse schedule LN-18-12 brake system, with clasp brakes; Miner A-5-P friction draft gear; Miner type B-10 buffing mechanism; Miner side McCord journal boxes. The lighting system on 20 cars will be Stone-Franklin bearings; Vapor heating system, and

on the other 15 cars the Safety Car Lighting & Heating Co. system.

Twenty steel baggage cars for Canadian National Rys., and 10 steel baggage cars for the Grand Trunk Ry., 20 from Canadian Car & Foundry Co., Montreal, and 10 from National Steel Car Corporation, Hamilton, Ont. They will have the following dimensions:

Length over end sills.....	73 ft. 6 in.
Length between truck centers.....	57 ft. 6 in.
Length over buffers.....	77 ft. 6 in.
Width over side sills.....	9 ft. 9 3/8 in.
Width over all at eaves.....	10 ft. 1 7/8 in.
Width of clerestory.....	5 ft. 11 1/4 in.
Height track to roof at center.....	14 ft. 2 in.
Height over lamp jacks.....	14 ft. 5 in.
Height rail to eave moulding.....	11 ft. 2 1/2 in.
Height track to sill at end.....	3 ft. 7 1/2 in.
Height track to sill at center.....	3 ft. 9 in.

Equipment will include Commonwealth 6-wheel trucks with cast steel bolsters; Pintsch gas lighting; Miner A-5-P friction draft gear; Miner side bearings and B-10 buffing mechanism; Vapor heating system; Westinghouse schedule LN-18-12 brake system, with clasp brakes; 36 in. steel tired wheels; 5 x 9 in. journals, and McCord journal boxes.

Fifty express refrigerator cars for Canadian National Rys., from National Steel Car Corporation, Hamilton, Ont. They will have steel underframes, steel superstructure, wood sheathing and wood and canvas roof. Following are the general dimensions:

Length over end sills.....	45 ft.
Length inside between ends.....	44 ft. 1 in.
Length between ice boxes.....	37 ft. 1 in.
Width over side sills.....	9 ft. 9 3/8 in.
Width inside lining.....	8 ft. 10 1/2 in.
Height top of side sill to underside of side plate.....	7 ft. 5 1/2 in.
Height inside, top of floor rack to top lining.....	7 ft.
Bolster centers.....	33 ft. 8 in.
Truck wheel base.....	7 ft.
Width of door opening.....	5 ft.
Height of door opening.....	6 ft. 3 in.

They will be equipped with 4-wheel trucks; 36 1/2 in. steel tired wheels; 5 1/2 x 10 in. journals; McCord journal boxes; type D couplers; Miner A-5-P friction draft gear, and Westinghouse schedule LN-14-12 brake system.

Freight Cars.—One thousand five hundred 40-ton box cars for Canadian National Rys., and 1,000 40-ton box cars for G.T.R.; 1,000 from Canadian Car & Foundry Co., 1,000 from National Steel Car Corporation, and 500 from Eastern Car Co., New Glasgow, N.S. They will have steel underframe and superstructure and single wood sheathing, and will be equipped with Hutchins all-steel flexible roofs. The chief dimensions will be as follows:

Maximum axle load.....	132,000 lb.
Length inside.....	36 ft.
Width inside.....	8 ft. 6 1/2 in.
Height floor to bottom of carline.....	8 ft. 0 1/2 in.
Width of side door opening.....	5 ft.
Height of side door opening.....	7 ft. 8 1/2 in.
Length between end sills.....	37 ft. 1 1/2 in.
Width over side sills.....	8 ft. 9 1/2 in.
Height rail to top of brake mast.....	13 ft. 10 in.
Height rail to top of running board.....	13 ft. 4 3/4 in.
Height rail to center of coupler.....	2 ft. 10 1/2 in.
Height sill to bottom of side plate.....	7 ft. 10 3/16 in.
Height top of rail to eaves.....	12 ft. 7 1/2 in.
Width over eaves.....	9 ft. 3 1/2 in.
Center to center of body bolsters.....	26 ft. 10 in.
Light weight.....	39,900-40,000 lb.

They will have 4-wheel arch bar trucks, with 5 x 9 in. journals, and 33 in. cast iron wheels. The following are also specified: Cast steel bolsters on 1,000 and Simplex bolsters on 1,500; Cardwell friction draft gear on 1,500, and Miner friction draft gear on 1,000; Symington malleable iron journal boxes on 500, and McCord and National boxes on the remainder; Camel door fixtures.

One hundred steel hopper cars for G.T.R. from Eastern Car Co. They will be of all steel construction and of the usual hopper bottom coal car type, and will be of 50-ton capacity with a maximum axle load of 169,000 lb. They will be

30 ft. long inside, 9 ft. 6 in. wide inside, and height from top of rail to top of body will be 10 ft. Four-wheel trucks will be used, with 33 in. cast iron wheels and 5 1/2 x 10 in. journals, and the cars will be equipped with Cardwell friction draft gear and Simplex bolsters.

One hundred 50-ton general service cars, steel underframe, steel posts and wood sides, for G.T.R., from Eastern Car Co. They will be of the composite type, with steel underframe, steel posts and bracing, and wood sides. There will be 6 doors on each side. The maximum axle load will be 169,000 lb. The dimensions will be as follows:

Length over striking castings.....	43 ft. 0 5/8 in.
Width over all.....	10 ft. 2 1/2 in.
Width inside.....	9 ft. 2 in.
Height inside.....	5 ft. 2 1/2 in.
Height, top of rail to top of side.....	9 ft. 6 1/2 in.
Height, top of rail to floor.....	4 ft. 4 in.
Truck centers.....	31 ft. 10 1/2 in.
Car wheel base.....	37 ft. 4 1/2 in.
Truck wheel base.....	5 ft. 4 1/2 in.
Length of door opening.....	5 ft. 6 in.
Capacity, level.....	73.4 cu. yds.
Capacity, heaped at 30 degrees.....	90 cu. yds.

Four-wheel trucks will be used, with 33 in. cast iron wheels, and 5 1/2 x 10 journals. Cardwell friction draft gear and Simplex bolsters will be used.

Two hundred and seventy-two coal car bodies for Canadian National Rys., from Eastern Car Co. The dimensions of these, which will be mounted on 4-wheel trucks, will be the same as those of the bodies for the general service cars, as given above. Cardwell friction draft gear will be installed.

One hundred general service cars for the Grand Trunk Ry. U.S. lines from the Pressed Steel Car Co., Chicago.

In addition to the orders for freight equipment which have been given as stated above, we are officially advised that negotiations are proceeding for 1,000 automobile cars, and it is expected that this order will be placed in the near future. We are also officially advised that the management has directed that 8 first class passenger cars and 20 milk cars be built in G.T.R. shops at Port Huron, Mich., for the Central Vermont Ry.; and that 1,000 thirty-ton steel frame box cars will be converted to stock cars, and 50 box cars to cabooses, at the Canadian National Rys. shops at Moncton, N. B., the work to begin in the near future.

Ballast Cars.—One hundred Hart-Otis ballast cars for G.T.R. from Canadian Car & Foundry Co., Montreal. Following are the chief dimensions:

Length inside.....	40 ft.
Length over striking plates.....	42 ft. 2 in.
Width inside.....	8 ft. 9 in.
Width between plough guards.....	8 ft. 8 in.
Width over side stakes.....	9 ft. 9 in.
Height inside.....	3 ft. 6 in.
Height from rail to top of side.....	7 ft. 9 1/2 in.
Height from rail to center of coupler.....	2 ft. 10 1/2 in.
Height from rail to top of floor.....	4 ft. 3 3/4 in.
Truck centers.....	31 ft. 2 in.
Truck wheel base.....	5 ft. 6 in.
Capacity, load level with top.....	1,225 cu. ft.
Capacity, load heaped.....	1,575 cu. ft.

These cars will be mounted on 4-wheel trucks, with 5 1/2 x 10 in. journals. Equipment will include Hall draft gear and Simplex bolsters.

Work Equipment.—One Erie ditcher, from International Equipment Co.; two 160-ton self propelled Industrial wrecking cranes, from F. H. Hopkins & Co.; one 150-ton self propelled Industrial wrecking crane, from F. H. Hopkins & Co.; 4 Jordan all-steel spreaders, with ditching attachments, 2 Jordan spreader ditching attachments, and three 20-ton locomotive cranes from F. H. Hopkins & Co.

One 15-ton locomotive crane from Browning Co., Cleveland, Ohio.

One 22-ton locomotive crane from Holden Co., Montreal.

Two center ballast ploughs from F. H. Hopkins & Co.

Two right and 2 left ballast ploughs from Dominion Equipment & Supply Co., Winnipeg.

We are officially advised that, in addition to the work equipment ordered as above, orders for 4 clamshell buckets and 2 hoisting engines will probably be given in the near future.

The cost of the equipment ordered by the Canadian National Rys., as above, will be approximately as follows: Locomotive, \$5,000,000; passenger train cars, \$4,300,000; freight and ballast cars, \$7,500,000; work equipment, \$250,000; total, \$17,050,000.

Traffic Orders by Board of Railway Commissioners.

Exchange Surcharge on International Freight Shipments.

General order 373, Dec. 30, 1922.—Re general order 372, Nov. 24, 1922, relieving railway companies, until further order, from complying with requirements of paragraph 3 of general order 326, Jan. 14, 1921, in the matter of exchange surcharge on all international shipments, other than coal and coke: Upon its appearing that the rate of exchange quoted for New York funds exceeds 1%, the Board orders that, for the present and until further order, general order 372 be rescinded.

Binder Twine Freight Rates.

33,245, Dec. 26, 1922.—Re order 15,266, March 15, 1910, as amended by order 15,386, Nov. 14, 1911, prescribing certain rates to be charged by Grand Trunk Ry. and the Michigan Central Rd. on binder twine: Upon reading what is filed on behalf of the Canadian Freight Association, the Plymouth Cordage Co. consenting, the Board orders that orders 15,286 and 15,386 be rescinded.

Rates on Apples for Export.

33,263, Jan. 5.—Re complaint of Nova Scotia Shippers' Association, of Kentville, N.S., against rates charged by Dominion Atlantic Ry. on apples, in carloads, to Halifax, for export: Upon hearing the complaint at Kentville, Sept. 27, 1921, the complainant and the railway company being represented at the hearing, and what was alleged, and upon reading the written submissions filed, the Board orders that the complaint be dismissed.

Comparison of Wheat Rates in Canada and United States Adjoining Territories.

—In the map in Canadian Railway and Marine World for January, on pg. 12, which was reproduced from one issued by the Railway Association of Canada, the distance from Fort William, Ont., to Medicine Hat, Alta., was given as 818 miles, and from Fort William to Lethbridge, Alta., as 769 miles. A subscriber at Washington, D.C., has written that these figures must be incorrect, as Medicine Hat is west of Maple Creek, which was given as 1,013 miles from Fort William; and Lethbridge is west of Grassy Lake, which was given as 1,125 miles west of Fort William. On looking into the matter, we find that the distances given were from Vancouver and not from Fort William. The distances from Fort William, according to C.P.R. working time tables, are as follows: Medicine Hat, 1,074.9 miles; Lethbridge, 1,176.2 miles. We suggest that subscribers change the figures on the map in the January issue accordingly.

Railway Wages and Working Conditions in Canada and the United States.

January did not see very many outstanding developments in the railway wage and working condition situation in Canada, and harmonious relations appear to be the rule between the railways and their employees of all classes. The last dispute arising out of the wage reductions made last summer—that between the C.P.R. and its clerical employees, the majority of whom are members of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees—was adjusted in a manner satisfactory to both company and men on Jan. 17, when an agreement was reached between Geo. Hodge, Assistant General Manager, Eastern Lines, and W. A. Mather, General Superintendent, Saskatchewan District, representing the company, and F. H. Hall and W. Turner, General Chairmen for Eastern and Western Lines for the employees' association, representing the employees, by which the employees had restored to them a portion of the amounts by which their rates were decreased. When these employees' wages were first cut, a conciliation board, of which D. Urquhart was chairman, and on which the company was represented by J. T. Arundel, formerly General Superintendent of the Ontario District, C.P.R., and the men by J. G. O'Donoghue, Toronto, was appointed, and the majority report was against the wage reduction. The company, however, decided to proceed as recommended in Mr. Arundel's minority report, and stated that the reduced wages would be kept in effect, but further representations made by the employees resulted in the undertaking of negotiations which resulted in the agreement mentioned above.

The principal C.P.R. shops were closed on Dec. 22, 1922, with the intention of leaving them closed till Jan. 8. On representations from the employees, however, that they considered that this enforced period of idleness, in conjunction with the recent wage reduction, and the extended period during which the shops had been working short time, would be unduly hard on them, the shops were reopened on Jan. 3.

Canadian Association of Railway Enginemen's Convention.—A Winnipeg press report of Jan. 22 states that the Canadian Association of Railway Enginemen's annual convention opened in Winnipeg on that date, delegates from both eastern and western Canada being present.

C.B.R.E. Co-operation with Canadian National Rys.—A. R. Mosher, President, Canadian Brotherhood of Railway Employees, is stated, in an Ottawa press dispatch, as having addressed his membership on Jan. 10, as follows: "As we, as an organization, have advocated and supported government ownership and operation of public utilities, we are in duty bound to lend every assistance to make government ownership a success. The conclusion I have arrived at is that in the new president, Sir Henry Thornton, we have a gentleman with whom we can and will most heartily co-operate in making the Canadian National Rys. a success from every standpoint." It was further stated that Mr. Mosher called upon the brotherhood members to put the greatest possible measure of efficiency into their work, to avoid waste of every description, and to realize that

such steps will not only assist greatly in the railways' success, but will pave the way for better conditions for the men.

C.B.R.E. and International Brotherhood Amalgamation.—The proposal for amalgamation between the Canadian Brotherhood of Railway Employees and the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, concerning which negotiations had proceeded for some time, with indications that amalgamation would not be improbable, now appears to have been abandoned.

Shopmen Desire 44-hour Week.—Press dispatches from various points state that Canadian National Rys. and G.T.R. shopmen have instructed their representatives to take up with the railway managements the question of the number of hours to be worked weekly. A 40-hour week has been the rule for some time past, and it is said that the majority of the employees desire the hours increased to 44. We are advised that the G.T.R. shops changed from a 40 to a 44-hour week on Jan. 22.

Sir Henry Thornton and Canadian National Rys. Employee.—A conference, which was arranged for by Tom Moore, President, Dominion Trades and Labor Council, and one of the C.N.R. directors, was held in Ottawa, Jan. 5, Senator Gideon Robertson presiding, at which Sir Henry Thornton, President, accompanied by S. J. Hungerford, Vice President and General Manager, Canadian National Rys., and W. D. Robb, Vice President and General Manager, G.T.R., met representatives of the employees. It was announced afterwards that Sir Henry had stated that he had decided to cancel the order given by the former President, D. B. Hanna, not to allow officials or employees who became candidates for the Dominion Parliament or a provincial legislature, to remain in the railways' service, and that the employees' representatives had assured Sir Henry that he could depend on the employees' whole-hearted effort in his endeavor to make the C.N.R. a success.

U.S. Situation.—As in Canada, so in the U.S., there have not been many outstanding developments lately in the railway labor field. The chief development was a decision by the Labor Board, announced in the latter part of Dec., 1922, by which new rules covering maintenance of way men's employment were established. These cover matters of seniority, promotion, and rates applicable to overtime and extra work, and provide specifically that "promotion shall be based on ability, merit and seniority; ability and merit being sufficient, seniority shall prevail, with the management to be the judge." The decision denied the employees punitive overtime rates for Sundays, holidays, and work done in the 9th and 10th hours of continuous employment. This ruling was attacked in a dissenting opinion issued by A. O. Wharton, a labor member of the Board.

The Daugherty injunction, enjoining striking railway shopmen from interfering with railway employees or property, details of which were given in preceding issues of Canadian Railway and Marine World, was continued in effect till at least May 2, by Judge Wilkerson in the U.S. District Court at Chicago early in January. A final hearing, to determine whether the injunction will be made permanent, was set for May 2.

Mainly About Railway People Throughout Canada.

J. H. Barber, Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto, who has retired on pension, was born near Cobourg, Ont., Dec. 20, 1856, and educated in Toronto. He was an article pupil of James Ross, C.E., from 1875 to 1878, and was engaged as Assistant Engineer, and Division Engineer, on various sections of location and construction on the C.P.R. up to 1891. In 1891 he was appointed Resident Engineer, Maintenance of Way Department, C.P.R., Toronto, and was later appointed Division Engineer, Atlantic Division, C.P.R., St. John, N.B., holding that position until April, 1906. He was, to 1916, Division Engineer, Eastern Division (now Quebec District), C.P.R., Montreal; 1916 to April, 1920, on special work at various points, including double tracking and grade separation, etc., Toronto; Apr., 1920, to Jan. 1, 1923, Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto. On his retirement, H. C. Grout, General Superintendent, Ontario District, C.P.R., in presenting him, on behalf of his associates, with a framed address, a case of pipes, and a bouquet of roses for Mrs. Barber, spoke of his long services with the company, his sterling qualities, unflinching loyalty, and uniform courtesy and kindness to all those with whom he came in contact. During Mr. Barber's long service, he was especially identified with the construction of the Credit Valley Ry., the Ontario & Quebec Ry., the Guelph Jct. Ry., all now parts of the C.P.R., the Richelieu River bridge, double tracking the St. Lawrence River bridge, Sortin yard, double tracking Montreal to Farnham, bridge reconstruction Dominion Atlantic Ry., double tracking Lachine Canal swing bridge, and grade separation at North Toronto. He was one of the original members of the Canadian Society of Civil Engineers, which was founded in 1867, and his first work in Toronto was as engineer in charge of laying track from the Don River for five miles down the Kingston Road, for the Toronto Gravel Road & Concrete Co., of which E. B. Osler (now Sir Edmund Osler and a director of the C.P.R.) was President. This line now forms a portion of the Toronto Transportation Commission's trackage. Mr. Barber has been a subscriber to Canadian Railway and Marine World since July, 1898.

E. W. Beatty, K.C., President, C.P.R., and party, spent the New Year holiday at the Chateau Frontenac, Quebec, Que.

Alfred Ernest Bennets, Locomotive Foreman, C.P.R., North Bend, B.C., died there, Dec. 30. He was born Aug. 16, 1862, and entered C.P.R. service in Oct., 1898, since when he had been, to Jan. 6, 1899, fitter, Revelstoke, B.C.; Jan. 6, 1899, to Jan. 2, 1900, Assistant Locomotive Foreman, Nakusp, B.C.; Jan. 2 to April 1, 1900, Assistant Locomotive Foreman, Smelter Jct., B.C.; Sept. to Nov. 1, 1900, fitter, Revelstoke, B.C.; Nov. 1, 1900, to Jan. 8, 1901, fitter, Nelson, B.C.; Jan. 8, to Feb. 1, 1901, fitter, Eholt, B.C.; Feb. 1, 1901, to May 1, 1902, Assistant Foreman, Eholt, B.C.; May 1 to July 7, 1902, leading hand fitter, Nelson, B.C.; July 7, 1902, to Aug. 1, 1905, Locomotive Foreman, Eholt, B.C.; Aug. 1, 1905, to Nov. 6, 1912, Locomotive Foreman, Kamloops, B.C.; Nov. 6, 1912, to Jan. 23, 1913, Locomotive Foreman, Eholt, B.C.; Jan. 23, 1913, to Aug. 10, 1919, Locomotive Foreman, Grand Forks, B.C.; Aug. 10 to

Oct. 10, 1919, Shop Foreman, Revelstoke, B.C.; Oct. 10, 1919, to Aug. 25, 1920, Night Locomotive Foreman, Revelstoke, B.C., and from Aug. 25, 1920, Locomotive Foreman, North Bend, B.C.

Walter Box, locomotive man, G.T.R., Stratford, Ont., who retired on pension Jan. 15, after 50 years service with the company, 45 of which were spent as locomotive man. It is said that he never had an accident which cost either life or injury to passengers or train crew.

W. R. Buckberough, of the Passenger Department, C.P.R., Hong Kong, was married there recently, to Mrs. R. Meyeringh, who was given away by Thos. Monaghan, of the C.P.R. steamships' catering department.

R. A. Bush, who died at Brockville, Ont., Jan. 2, aged 96, was one of the original locomotive men on the G.T.R., between Montreal and Brockville. He was born in Belgium, came to Canada in early life, and was a veteran of the Fenian Raid.

W. W. Butler, President, Canadian Car & Foundry Co., Montreal, has been elected a director of Hattie Gold Mines, Ltd., succeeding the late John Irving, of the Nova Scotia Steel Co., whose holdings have been taken over by a Montreal syndicate, of which Mr. Butler is a member.

Harry A. Carson, who has been appointed Commercial Agent, Canadian National-Grand Trunk Rys., Montreal, was born at Toronto, Aug. 26, 1886, and entered railway service Sept. 1, 1905, since when he has been, to July 1, 1910, in various clerical positions, District Freight Agent's office, G.T.R., Toronto; July 1, 1910, to May 1, 1912, Soliciting Freight Agent, G.T.R., Toronto; May 1, 1912, to May 25, 1917, Travelling Freight Agent, G.T.R., Toronto; May 25, 1917, to July 1, 1920, City Freight Agent, G.T.R., Montreal; July 1, 1920, to Dec. 31, 1922, City Freight Agent, Canadian National-Grand Trunk Rys., Montreal.

Lewis Carvell, financial broker, Boston, Mass., who died there suddenly, Jan. 6, was a brother of Hon. F. B. Carvell, Chief Commissioner, Board of Railway Commissioners for Canada.

F. H. Clendenning, Foreign Freight Agent, C.P.R., Vancouver, B.C., has been elected Chairman of the Pacific West-bound Conference.

George C. Cochlan, whose appointment as District Freight Agent, C.P.R., Toronto, was announced in our last issue, was born at Port Huron, Mich., Nov. 27, 1876, and entered railway service Aug. 28, 1891, since when he has been, to Sept. 30, 1895, customs and general clerk, G.T.R., Port Huron, Mich.; Oct. 1, 1895, to June 1, 1900, customs agent, G.T.R., Port Huron, Mich.; June 2, 1900, to July 1, 1902, rate inspector, Trunk Line Association, Port Huron, Mich.; July 2, 1902, to June 1, 1906, customs agent, G.T.R., Port Huron, Mich.; June 2, 1906, to Feb. 1, 1907, Travelling Freight Agent, Lackawanna and G.T.R. lines, Chicago, Ill.; Feb. 2, 1907, to Aug. 1, 1908, Import Freight Agent, C.P.R., Chicago, Ill.; Aug. 2, 1908, to Oct. 9, 1915, Export Freight Agent, C.P.R., Chicago, Ill.; Oct. 10, 1915, to Dec. 31, 1922, District Freight Agent, C.P.R., Detroit, Mich.

George Edward Costello, who has been given charge of the Passenger Department, C.P.R., at Yokohama, Japan, was born May 10, 1890, and entered

the company's service July 7, 1916, as ticket clerk and stenographer, Passenger Department, Hong Kong, China, from May, 1918, to Nov., 1920, was Passenger Agent there, and from Nov., 1920, to the date of his present appointment, General Agent, Yokohama, Japan.

J. C. Crombie, who has retired from active service, after 47 years with the G.T.R., was entertained at dinner at Toronto, Jan. 20, by a number of the company's officials, and presented with a case of pipes. He was, for a number of years, Master of Transportation, London, Ont.; from Jan., 1913, to Dec., 1921, Joint Superintendent, G.T.R. and Wabash Rd., St. Thomas, Ont., and from Dec., 1921, Special Inspector of Transportation, Ontario Lines, G.T.R., Toronto.

William Crowe, who has been appointed Locomotive Foreman, Canadian National Rys., Wainwright, Alta., was born at Fergus, Ont., June 12, 1871, and entered railway service, April 10, 1888, since when he has been, to April 16, 1891, locomotive wiper and fireman, G.T.R., Hamilton, Ont.; Nov. 19, 1892, to June 22, 1894, locomotive fireman, C.P.R., Fort William, Ont.; Aug. 3, 1894, to Oct. 31, 1896, locomotive fireman, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont.; Nov. 4, 1896, to Nov. 30, 1900, locomotive fireman, C.P.R., Toronto; July 27, 1905, to May 15, 1920, locomotive fireman and locomotive man, C.P.R., Calgary, Alta.; Aug. 10, 1920, to Dec. 31, 1922, Assistant Locomotive Foreman, Canadian National Rys., Big Valley, Alta.

Arthur Crompton, Valuation Engineer, G.T.R., Montreal, read a paper on railway valuation, before the Engineering Institute of Canada, Toronto branch, on Jan. 18.

M. C. Dunn, who has been appointed Commercial Agent, Canadian National-Grand Trunk Rys., Kingston, Ont., was born at Enterprise, Ont., Dec. 16, 1864, and entered railway service in Oct., 1888, since when he has been, to March, 1912, agent and operator, Bay of Quinte Ry., Yarker, Ont.; March, 1912, to Oct., 1920, City Freight and Passenger Agent, Canadian Northern Ry., latterly, Canadian National Rys., Kingston, Ont.; Oct., 1920, to Jan. 1, 1923, City Passenger Agent, Canadian National Rys., and City Freight Agent, Canadian National-Grand Trunk Rys., Kingston, Ont.

Maurice Fitzgerald, who has been appointed Special Representative, C.P.R., Yokohama, Japan, was born June 7, 1879, and entered the company's service Jan. 1, 1896, as clerk in the General Traffic Department, Yokohama, and from May, 1914, was Assistant to the Manager, General Traffic, there.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, has been elected a member of the Audit Bureau of Circulation's Canadian Advisory Committee.

D. B. Hanna, ex-President, Canadian National Rys., left Toronto, Jan. 22, with Mrs. and Miss Jean Hanna, for Bermuda, expecting to return to Toronto early in March.

Miss Laura Hazen, daughter of the late Wm. Hazen of St. John, N.B., and sister of H. T. Hazen, Chief Engineer, Canadian Northern Ry. lines east of Port Arthur, was married in Toronto, Jan. 10, to A. G. Dick, of Winnipeg.

Lieut.-Col. James A. Hesketh, C.M.G., D.S.O., Assistant Engineer, Western Lines, C.P.R., Winnipeg, died there, Jan.

27. He went overseas early in 1915, and had a distinguished career during the war, receiving the Military Cross and the Distinguished Service Order, and was also made a Companion of the Order of St. Michael and St. George.

Mathew Kelly, who has been appointed Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto, was born at Thamesville, Ont., July 6, 1874, and entered railway service Aug. 1900, since when he has been, to Apr. 1902, bridge man, G.T.R., London, Ont.; May 1902 to Apr. 1905, bridge man, C.P.R., London, Ont.; May to July 1905, chain man, C.P.R., London, Ont.; Aug. 1905 to Mar. 1906, rodman, C.P.R., London, Ont.; Apr. 1906 to Apr. 1910, transit man, C.P.R., London, Ont.; May 1910 to Apr. 1911, Resident Engineer, C.P.R., Toronto; May 1911 to May 1913, Resident Engineer, C.P.R., White River, Ont.; June 1913 to June 1915, Resident Engineer, C.P.R., Brownville Jct., Me.; June 1915 to Dec. 1916, Resident Engineer, Toronto Terminals, C.P.R., Toronto; Dec. 1916 to Jan. 1, 1923, Resident Engineer and Division Engineer, consecutively, C.P.R., Farnham, Que.

L. B. Ladd, dispatcher, Canadian National Rys., Capreol, Ont., lost his life in a fire which destroyed several buildings there, Jan. 4.

W. B. Langmore, Assistant to the Secretary, Canadian National Rys., who was found in the vault in his office, with the door closed, Jan. 2, with a bullet wound in his head, believed to have been self inflicted, died at the General Hospital, Toronto, Jan. 13, aged 47. He had been on leave of absence, owing to ill health, for three months, and had just returned to duty.

W. B. Lanigan, General Freight Traffic Manager, C.P.R., is reported in a press dispatch to have stated at Regina, Jan. 26, that he would retire from the service in the near future. As stated in Canadian Railway and Marine World for Feb., 1922, Mr. Lanigan bought property in Uplands, near Victoria, some time ago, with a view of retiring there as soon as circumstances would permit, and he would probably have retired ere this but for the many pressing matters which it was desirable for him to attend to in connection with freight rate questions.

Mrs. Leitch, widow of Mr. Justice Leitch, of the Supreme Court of Ontario, and a former Chairman of the Ontario Railway and Municipal Board, died at Los Angeles, Cal., Jan. 20.

Alexander Lindsay, who died at Vancouver, B.C., Dec. 30, aged 75, is stated in a press report to have been a telegraph operator and later Traffic Superintendent at Yale, B.C., in the C.P.R.'s early days.

R. W. Lumsden, C.P.R. trainman, Smiths Falls, Ont., has been given the Royal Humane Society's medal for saving life at peril of his own on June 9, 1922, at Chesterville, Ont., when a woman fell across the track in front of a freight train, and he ran from the train, threw himself beside her and rolled her and himself to safety.

P. J. Lynch, Superintendent, Barrie Division, Ontario Lines, G.T.R., Allandale, Ont., who is on leave of absence owing to illness, is a patient at Wellesley Hospital, Toronto.

Mrs. H. C. Martin, wife of the Freight Traffic Manager, G.T.R., Montreal, died in the General Hospital there, Jan. 18.

D. W. McDonald, Assistant Superin-

tendent, Sydney & Louisburg Ry., Glace Bay, N.S., who had one of his legs badly crushed by a moving train at Victoria Jct., N.S., in November, is progressing satisfactorily. He was removed from the hospital to his home, Jan. 6. The leg has been saved, and it is anticipated that the use of it will be unimpaired.

George Merkley, until recently agent, Canadian National Rys., Brockville, Ont., died at Newboro, Ont., suddenly, Dec. 26, after 52 years of railway service. In his earlier days, he was in G.T.R. service, and served as operator and dispatcher at Gorham, N.H., and Richmond, Que., and transferred to C.P.R. service, serving as dispatcher at North Bay, Sudbury, Sault Ste. Marie, and Ottawa, Ont. He had been in C.N.R. service for about 20 years.

C. W. Milestone, at one time in the C.P.R. service, at Winnipeg and at Moose Jaw, Sask., whose death was mentioned in Canadian Railway and Marine World for January, had lived for some time previously at Yarmouth, N.S., where he died,



W. E. Weegar,
Acting Superintendent, Barrie Division, Ontario
Lines, Grand Trunk Railway.

following an operation, and nat Truro, N.S., as stated in a press report.

Charles Sedgewick Morse, whose appointment as District Freight Agent, C.P.R., Ottawa, Ont., was announced in our last issue, was born there Aug. 31, 1889, and entered C.P.R. service Mar. 1, 1906, since when he has been, to Jan. 1, 1909, stenographer, tracing clerk and export clerk, Winnipeg; Jan. 1, 1909, to Apr. 1, 1912, Travelling Freight Agent, Calgary, Alta.; Apr. 1, 1912, to July 15, 1914, District Freight Agent, Fort William, Ont.; July 15, 1914, to June 1, 1920, District Freight Agent, London, Ont.; June 1, 1920, to Jan. 1, 1923, District Freight Agent, Toronto.

Herbert James Page, who has been appointed Chief of Investigation Department, Canadian National Rys., Ottawa, Ont., was born at St. John, N.B., Sept. 25, 1871, and from 1884 to 1890, was machinist, Geo. Yates Engine Co., London, Ont.; 1890 to 1905, erecting steam

plants, E. P. Allis Engine Co., Milwaukee, Wis.; 1895 to 1899, mechanic, David Maxwell & Sons, implement manufacturers, St. Marys, Ont.; 1899 to 1902, Assistant Superintendent and Special Instructor, International Correspondence Schools, Scranton, Pa.; 1902 to 1904, mechanical expert, Continental Heat & Light Co., Montreal; 1905 to 1906, Superintendent in charge of construction, Royal Alexander Hospital, Montreal; 1906 to 1908, confidential investigator for British capitalists, reporting to Silas Carpenter, Chief of Detectives, Montreal; 1908 to 1911, Detective Inspector, Eastern Lines, C.P.R., Montreal; 1911 to 1915, Special Agent, with investigations for management, Canadian Northern Ry., Toronto, and returned to operating department, Dec. 1, 1911; 1915 to 1921, Chief Special Agent, Canadian National Rys., Toronto; Dec. 31, 1921, to Dec. 29, 1922, Superintendent of Police and Special Service Departments, Canadian National Rys., Toronto.

A. F. Phillips, who died at Stratford, Ont., Dec. 26, aged 77, was formerly station agent, G.T.R., there.

William Phillips, European Manager, Canadian National Rys., London, Eng., was expected to arrive in Canada about the end of January, on a business trip.

F. H. Phippen, K.C., and Miss Phippen, have left Toronto for a visit to Honolulu. Mrs. Phippen will join them in San Francisco early in March.

Capt. Kenneth G. Polyblank, who has been appointed District Engineer, in charge of construction, Longlac-Nakina cutoff, Canadian National Rys., Longlac, Ont., was born at Bristol, Eng., Aug. 17, 1884, and entered railway service in April, 1904, since when he has been, to Oct., 1905, in Timiskaming & Northern Ontario Ry. office, North Bay, Ont.; Oct., 1905, to Mar., 1907, in C.P.R. office, Fort William, Ont.; Mar. to Aug., 1907, rodman, Grand Trunk Pacific Ry., Fort William, Ont., Aug., 1907, to Aug., 1911, rodman, draftsman, instrument man and Resident Engineer, consecutively, National Transcontinental Ry., Kenora, Ont., and Winnipeg; Aug., 1911, to May, 1912, Resident Engineer, Canadian Northern Ry., Port Arthur, Ont.; May, 1912, to Oct., 1914, Division Engineer, Canadian Northern Ry., Port Arthur, Ont.; 1915 to 1919 in military service overseas as Captain in Canadian Engineers Light Railways Co.; July, 1919, to Jan., 1920, Resident Engineer, Canadian National Rys., Winnipeg; June to Nov., 1920, Resident Engineer, C.N.R., Hornepayne, Ont.; Nov., 1920, to Jan., 1923, District Engineer, Nipigon Division, Ontario District, C.N.R., Hornepayne, Ont.

James Rankin, who has been appointed General Agent for Japan, C.P.R., Yokohama, was born in June, 1869, and entered the company's service May 18, 1887, as clerk, General Passenger Department, Montreal, and from Nov., 1892, to Jan., 1906, was clerk at Hong Kong, China, and Kobe and Yokohama, Japan; from Jan., 1906, to Feb., 1915, Agent, Kobe, Japan, and from 1915 to the date of his present appointment, Assistant Agent at Yokohama.

Commander J. K. L. Ross, O.B.E., director, C.P.R., and Mrs. Ross, sailed from Vancouver, B.C., at the end of December, on the s.s. Empress of Russia, for Manila, to visit Mrs. Ross's sister. They expect to return to Canada during March.

Gerard Ruel, K.C., who has been appointed Vice President and General Counsel, Canadian National Rys., includ-

ing Canadian Northern, Canadian Government, Grand Trunk and Grand Trunk Pacific Rys., with office temporarily at Ottawa, Ont., was born at St. John, N.B., July 5, 1866, and studied law there, subsequently graduating in law at Harvard University, Cambridge, Mass., in 1889. He practised in St. John for a number of years, and was for some time a partner in the law firm of Blair, Ruel & Blair. From July, 1899, to Oct. 1, 1903, he was Law Clerk, Railways and Canals Department, Ottawa; from Oct. 1, 1903, to 1909, Assistant Solicitor, Canadian Northern Ry., Toronto; 1909 to Dec. 31, 1918, Chief Solicitor, Canadian Northern Ry., Toronto; Jan. 1, 1919, to Apr. 1920, Counsel, Canadian National Rys., Toronto; Apr. 1920 to Dec. 1922, General Counsel, Canadian National Rys., Toronto.

William A. B. Russell, who has been appointed Division Freight Agent, Canadian National-Grand Trunk Pacific Rys., Calgary, Alta., was born at Rednersville, Ont., Jan. 1, 1886, and entered railway service Mar. 20, 1904, since when he has been, to Apr. 30, 1904, clerk, Local Freight Department, Central Vermont Ry., St. Albans, Vt.; May 1 to Nov. 17, 1904, stenographer, General Freight Agent's office, same road, St. Albans, Vt.; Nov. 17, 1904, to Aug. 14, 1905, stenographer to General Freight Agent, same road, St. Albans, Vt.; Aug. 15, 1905, to Apr. 30, 1908, stenographer to General Freight Agent, G.T.R., Montreal; May 1 to Dec. 31, 1908, stenographer to Assistant Freight Traffic Manager, Winnipeg; Jan. 1, 1909, to Dec. 31, 1910, clerk, Freight Traffic Department, same road, Winnipeg; Jan. 1, 1911, to Dec. 31, 1915, chief clerk, Freight Traffic Department, same road, Winnipeg; Jan. 1 to Sept. 30, 1916, chief clerk to Traffic Manager, G.T.P.R., and Western Traffic Manager, Canadian Government Rys., Winnipeg; Oct. 1, 1916, to Sept. 4, 1920, Commercial Agent, G.T.P.R., Regina, Sask.; Sept. 4, 1920, to Dec. 26, 1922, Division Freight Agent, Canadian National-Grand Trunk Pacific Rys., Saskatoon, Sask.

Frank W. Thompson, who has been appointed Chairman, Canadian Car Demurrage Bureau and Canadian Freight Association, Western Lines, Winnipeg, was born at Toronto, June 14, 1873, and entered railway service in Oct., 1886, since when he has been, to 1889, apprentice, Freight Department, G.T.R., Toronto; 1890 to 1893, freight clerk, G.T.R., Toronto; 1894 to 1897, rate clerk, Division Freight Office, G.T.R., Montreal; 1898 to 1902, chief clerk, General Freight Department, Canadian Government Rys., Montreal; 1902 to 1903, rate clerk, Canadian Northern Ry., Winnipeg; May, 1903, to April, 1904, Freight Inspector, Canadian Freight Association, Winnipeg; May, 1904, to Dec., 1905, Freight Inspector, C.F.A., Port Arthur, Ont.; Jan., 1906, to April, 1907, Freight and Car Service Inspector, C.F.A., Edmonton, Alta.; May, 1909, to Nov., 1910, Freight Inspector, C.F.A., Fort William, Ont.; Dec., 1910, to Sept., 1912, Travelling Freight Inspector, C.F.A., Regina, Sask.; Oct., 1912, to Dec., 1917, Chief Freight Inspector, C.F.A., Winnipeg; Jan., 1918, to July, 1922, Assistant Secretary, C.F.A., Winnipeg; July, 1922, to Jan. 1, 1923, acting Chairman, Canadian Car Demurrage Bureau and Canadian Freight Association, Western Lines, Winnipeg.

D. H. Way, agent, Timiskaming & Northern Ontario Ry., Cobalt, Ont., died there suddenly, Jan. 11, aged 52.

Mrs. C. J. Whellams, who died at Winnipeg recently, was the mother-in-law

of A. L. Graburn, General Fuel Agent, Canadian National Rys., Toronto.

William Edwin Weegar, who has been appointed acting Superintendent, Barrie Division, Ontario Lines, G.T.R., Allandale, Ont., was born in Stormount County, Ont., Dec. 17, 1870, and entered G.T.R. service Nov. 17, 1888, since when he has been, to 1899, freight brakeman, District 5, Montreal Division; 1899 to 1913, freight and passenger conductor, same district; 1913 to 1918, Trainmaster, Eastern Lines; 1918 to Jan. 8, 1923, Trainmaster, Ottawa Division, Eastern Lines, Ottawa, Ont.

W. H. Winterrowd, who has been appointed Assistant to President, Lima Locomotive Works, with office at New York, N.Y., was born at Hope, Ind., Apr. 2, 1884, and educated at Shelbyville, Ind., and Purdue University, whence he graduated with the degree of B.S. in 1907. He entered railway service in 1905, since when he has been, to 1906, blacksmith's helper, Lake Erie & Western Ry., Lima,

Ohio; 1906 to 1907, air brake and car repair man, Western Lines, Pennsylvania Rd., Dennison, Ohio; 1907 to 1908, special apprentice, Lake Shore & Michigan Southern Ry., Elkhart, Ind.; 1908 to 1909, Roundhouse Foreman, Lake Erie, Alliance & Wheeling Ry., Alliance, Ohio; 1909 to 1910, Night Roundhouse Foreman, Lake Shore & Michigan Southern Ry., Youngstown, Ohio; 1910, Roundhouse Foreman, same road, Cleveland, Ohio; 1910 to Sept., 1912, Assistant to Mechanical Engineer, same road, Cleveland, Ohio; Sept., 1912, to May, 1915, Mechanical Engineer, Angus locomotive shops, C.P.R., Montreal; May, 1915, to Apr. 1, 1918, Assistant to Chief Mechanical Engineer, C.P.R., Montreal; from Apr. 1, 1918, Chief Mechanical Engineer, Montreal. He is a member of the general committee, American Railway Association, Mechanical Division, and is also a member of the executive committee, of which he was Vice Chairman last year.

Canadian National Railways Construction, Betterments, Etc.

Dominion Atlantic Ry. Connection.—Referring to the Board of Railway Commissioners' order as to the connection between the Halifax and South Western Ry. and the Dominion Atlantic Ry. at Middleton Jct., quoted in Canadian Railway and Marine World for January, on pg. 11, we are officially advised that the proposed change will probably not be made until the diamond crossing, which is to be eliminated, is worn out.

Dorchester St. Stairway, Montreal.—The Canadian Northern Ry. has built an iron stairway from Dorchester St., Montreal, to the platform of the tunnel terminal station, to give more convenient access between the station and the street car line on Dorchester St. The surface of Dorchester St. bridge is 49 ft. above the C.N.R. tracks. The total length of the stairway overall is 114½ ft., consisting of a series of steps and landings. The length of the top landing at the level of Dorchester St. is 9 ft. Each of the other 5 landings is 5 ft. 1 in. long. There are 6 flights of steps, the lower being 11 ft. 10 in. long, and each of the others 13¾ ft. long. The clear width between railings is 6 ft., and the width of the ornamental portal at Dorchester St. entrance is the same. At this portal there is a collapsible steel gate, which, when open, is entirely out of the way. The width of each tread in the stairway is 11 in. and each rise is 6 7/16 in. Mason treads, on 5/16 in. plate, are used throughout. The stairway is carried on towers, the tops of the towers forming the landings, and the steps are carried on steel stringers between the towers. The towers are of steel, the posts being formed of angles, and cross bracing is of lateral angles. All connections are rivetted. Posts are founded on concrete pedestals, which in turn rest on solid rock. Along each side of the stairway there is corrugated galvanized iron to a height of 4 ft., the upper portion on each side being left open. The top is covered with a corrugated galvanized iron roof. The distance between framing on the stairway is 7¼ ft. There is a wooden hand rail on each side.

Napanee Connection and Station.—Both the Canadian Northern and the Grand Trunk had stations at Napanee, Ont. One of the first results of co-ordination was an arrangement for both lines to use the G.T.R. station. This

necessitated some re-arrangement of tracks, and to enable Canadian Northern trains to reach the station, that company in 1921 built a connection south of the G.T.R., approximately 1,200 ft. long, which leaves the C.N.R. approximately 465 ft. south of the diamond crossing of the C.N.R. and G.T.R. main lines, and joins the G.T.R. about 820 ft. east of the diamond crossing. In 1922 the C.N.R. graded another connection, leaving the G.T.R. about 1,660 ft. east of the diamond crossing, running north approximately 3,751 ft. and joining the C.N.R. about 4,300 ft. north of the diamond. Track will be laid on this connection this year and as soon as this is done the C.N.R. will be able to abandon the diamond crossing and use the two connections as parts of its main line.

Relaying Steel on Western Lines.—During 1922, 338.93 miles of heavy steel rails were laid to replace lighter ones, of which 305.83 miles were laid with 85 lb. rails and 33.1 miles with 80 lb. rails, as follows: Graham, Quibell and Kasha-bowie Subdivision, Ont., 35.14 miles of 85 lb.; Sprague Subdivision, Minnesota, 8.20 miles of 85 lb.; Minaki, Gladstone, Pleasant Point, Harte, Maryfield and Togo Subdivisions, Man., 211.99 miles of 85 lb.; Maryfield Subdivision, Sask., 50.50 miles, 85 lb.; Craik Subdivision, Sask., 26.6 miles, 80 lb.; Vegreville and Battle River Subdivisions, Alta., 6.5 miles, 80 lb.

Leon Revised Location.—The Board of Railway Commissioners has approved revised location plans for the Canadian Northern Ry. line between miles 72.06 and 72.74, near Leon, Man. Leon is on the line from Portage la Prairie to Brandon, etc.

Brazeau Subdivision Bridge.—We are officially advised that the Jamieson Construction Co., Edmonton, Alta., has been given a contract for the excavation of a rock cut of approximately 19,000 cubic yards adjoining the bridge at mile 157.3, Brazeau Subdivision, Alberta District, and the placing of the material excavated to form a rock dyke across the adjoining ravine.

Kamloops Interswitching Plans.—A press report states that plans prepared by the C.N.R. Engineer's Department, for interswitching facilities with the C.P.R. at Kamloops, B.C., are under consideration by the city's engineer. (Jan., pg. 11.)

Sir Henry Thornton's Western Inspection Trip.

Sir Henry Thornton, President, Canadian National Rys., left Ottawa Jan. 6 for an inspection of the Western Lines, going through to Victoria, B.C., and returning to Ottawa on Jan. 28. He was accompanied throughout the trip by Major Graham A. Bell, Deputy Minister of Railways and Canals, and Vice President, Canadian National Rys.; by the following C.N.R. officials: S. J. Hungerford, Vice President and General Manager; M. H. MacLeod, Vice President of Construction; C. A. Hayes, Vice President, Traffic; E. E. Fairweather, Assistant General Counsel; F. J. Buller, Assistant Treasurer; C. B. Brown, Engineering Assistant to Vice President, Operation and Maintenance; C. S. Gzowski, Assistant to Vice President, Construction Department; and by the following G.T.R. officers: J. E. Dalrymple, Vice President, Traffic; C. G. Bowker, Operating Manager. W. S. Thompson, Publicity Agent, G.T.R., also accompanied the party. Walter Pratt, Manager, Sleeping, Dining and Parlor Cars and Hotels, C.N.R., went west from Port Arthur. F. G. Dawson, of Prince Rupert, B.C., one of the directors, joined Sir Henry at Winnipeg, and went west with him. R. P. Ormsby, Secretary, C.N.R., met him at Vancouver, and returned part of the way with him. The following C.N.R. Eastern Lines' official went as far as Port Arthur, Ont.: W. A. Kingsland, General Manager; L. S. Brown, Assistant General Manager; W. U. Appleton, General Superintendent of Rolling Stock, and T. C. Hudson, General Master Mechanic. At Port Arthur Sir Henry was met by the following Western Lines' officials: A. E. Warren, General Manager; H. H. Brewer, Assistant General Manager; R. H. M. Temple, General Solicitor; A. H. Eager, General Superintendent of Rolling Stock; A. McCowan, Master Car Builder; W. G. Manders, Assistant Freight Traffic Manager; and R. Creelman, Assistant Passenger Traffic Manager, who accompanied him on the trip over the Western Lines. The general superintendents of the Ontario, Manitoba, Saskatchewan and Alberta Districts, and the Assistant General Manager of the British Columbia District, with their chief officials, travelled with the special train over their respective districts, and the superintendents and other divisional officials similarly went over their respective divisions. General Manager Kingsland, of the Eastern Lines, met Sir Henry at Armstrong, Ont., on the return trip, and accompanied him east. The President's special train was composed as follows, from the rear to the front: Compartment observation car, Fort William; Dominion Government official car, 101; G.T.R. business cars, Ontario and Canada; C.N.R. business cars, 51 and 53; baggage car. The general managers' business cars were attached to the train over their respective jurisdictions and the general superintendents' business cars were attached over their respective districts.

The special train, which left Ottawa on Jan. 6, at 10 p.m., was routed over the Canadian Northern Ry. for Winnipeg. Stops of only a few minutes were made at the divisional points, North Bay, Capreol, Folyet and Hornepayne, and Port Arthur was reached on Jan. 8 at 9 a.m. Throughout the whole trip, the terminals, etc., at the various points at which lengthened stops were made were thoroughly inspected, and a num-

ber of luncheons and dinners tendered by public bodies were attended by Sir Henry and his party, at most of which he spoke. The following notes of the occurrences at the various places are compiled from press reports:—

Port Arthur and Fort William, Jan. 8.—Inspection of grain elevators, terminals and industrial plants at Port Arthur in the morning. Fort William Canadian Club luncheon at noon. Inspection of Fort William terminals in afternoon. Port Arthur Chamber of Commerce dinner in evening, at which Sir Henry urged the two cities to amalgamate.

Winnipeg.—Arriving Jan. 9, about 10.30 a.m., the balance of the morning was spent going over the general offices, station building, etc., followed by luncheon at the Fort Garry Hotel, at which a member of the Western Lines' officials, not in the travelling party, were present. Afternoon, inspection of Winnipeg terminals, Fort Rouge and Transcona shops. Evening, dinner given by James Stewart, one of the C.N.R. directors, at Fort Garry Hotel, attended by a number of politicians and business men, the speakers being Mr. Stewart; Sir Henry Thornton; Premier Bracken, of Manitoba, who urged the speedy completion of the Hudson Bay Ry.; Premier Dunning, of Saskatchewan; Hon. T. A. Crerar, M.P.; and Hon. George Langley. Jan. 10.—Noon, Canadian Club luncheon; evening, dinner at Government House.

Brandon, Man.—Winnipeg was left on Jan. 11 at 9 a.m., Brandon being reached at 2 p.m. The local offices were visited. Sir Henry addressed a public meeting, and also the United Farmers' convention, leaving at 5 p.m.

Regina, Sask., was reached early on Jan. 12. A Weyburn deputation asked for an extension to be built southwest, to connect Weyburn with the Radville line, and several other delegations were received, one asking for the linking up of the C.N.R. with the C.P.R. at Northgate, and others asking for various branch lines and for the completion of the Hudson Bay Ry. Sir Henry had a conference with the Saskatchewan Government, at the Legislative Buildings, regarding the branch line programme for the province, and then met the city council at the city hall, when the Mayor referred to the unfulfilled agreement between the Grand Trunk Pacific Ry. and the city, respecting station and hotel buildings and freight terminals, Sir Henry replying that he did not think it would be possible to carry out the agreement in its entirety. After a luncheon by the Canadian club and the Regina Board of Trade, representatives of associated boards of trade were met; Regina being left at 3 p.m.

Moose Jaw, Sask., was reached on Jan. 12, at 4.30 p.m., after Sir Henry had seen a deputation from Swift Current asking for improvements in its transportation situation. The Moose Jaw terminals were inspected, the board of trade was met, and a civic dinner was attended, the party being entertained afterwards at the Prairie Club, and leaving at 9.30 p.m. for Saskatoon.

Saskatoon, Sask., was reached on Jan. 13, at 9.30 a.m., the whole day being spent there, and was left on Jan. 14 at 1 a.m., via Drumheller, where half an hour was spent, Calgary being reached at 7.30 p.m.

Calgary, Alta., Jan. 15.—Several delegations of farmers were received, asking

for construction of branch lines, Sir Henry explaining that only a certain amount of money would be available, and that the policy would be to collect all the information possible and to render assistance where relief was needed most urgently. It was not proposed to adopt a dog in the manger policy, or to try to keep out the C.P.R., if the latter was prepared to afford a measure of relief. The mayor and council urged the providing of a union station for both the C.P.R. and the C.N.R., but were told that this was too expensive a project for the present, and that there would be a consolidation of traffic between the Canadian Northern and the Grand Trunk Pacific lines. A board of trade luncheon was attended at the Palliser Hotel, over 500 being present. The question of shipping Alberta grain via Vancouver was discussed, Sir Henry stating that the C.N.R. could not undertake to build elevators at Vancouver, which must be left to private enterprise.

Edmonton, Alta., was reached on Jan. 16, at 1.30 a.m. The terminals were inspected, and a city council delegation urged the construction of subways, a new station, and other improvements, which Sir Henry stated could not be undertaken this year. A deputation headed by the Alberta Coal Commissioner asked a reduction in coal rates for train lots to eastern Canada. A deputation headed by D. M. Kennedy, M.P., for Edmonton West, asked for the building of a branch line from Brule to Grand Prairie, about 150 miles. Hon. Vernon Smith, Alberta Minister of Railways, headed a deputation asking for the reopening of work on the S line, on which some construction was done a few years ago. At a dinner at the Hotel Macdonald, Attorney General Brownlee welcomed Sir Henry, who referred to the board of trade's resolution urging the building of grain elevators at Vancouver, and confirmed what he had said at Calgary, that the work must be left to private enterprise. Edmonton was left at 10.30 p.m. for the Pacific coast, the train staying at Jasper, B.C., on Jan. 17, from 6.30 to 8 a.m., the next stop being at Kamloops, B.C., from 8 to 8.15 p.m., Vancouver being reached on Jan. 18 at 7 a.m.

Vancouver, Jan. 18.—The terminals, offices, etc., were inspected. The mayor and members of the city council were reported to have been told that the site on which the C.N.R. station stands and the ground surrounding it will be improved, and that a permanent highway will be built through the False Creek property, as a continuation of Terminal Ave. A request for construction of grain elevators was given the same answer as at Calgary and Edmonton. Strong representations were made in favor of the removal of the floating drydock from Prince Rupert to Vancouver. A dinner given by the board of trade at the Hotel Vancouver was attended by over 600. Sir Henry referred to the demand for grain freight rates from prairie province points to the coast, in proportion to east-bound rates from the same points according to distance, and said every consideration would be given to the representations. Before leaving Vancouver, he was presented with a report on Vancouver Island resources, prepared by the Victoria Chamber of Commerce, which sent a delegation across to meet him.

Victoria, B.C., was reached early Jan.

19. Starting at 6.30 a.m., Sir Henry walked about the city, including the ocean wharf; played his first game of golf in Canada with J. Wilson, Captain of the Victoria Golf Club, against Hon. T. D. Patullo, B.C. Minister of Public Works, and A. T. Goward, Local Manager, B.C. Electric Ry., afterwards attending a chamber of commerce luncheon, which was followed by conferences with the B.C. Minister of Railways, and with the chamber of commerce, the latter in regard to harbor and terminal facilities, the necessity for a grain elevator and the development of the lumber industry. An Esquimalt deputation urged the development of the area contiguous to Lyall St., by providing communication with the outer docks. The Lieutenant Governor gave a dinner, and Victoria was left at night for Vancouver.

Vancouver, Jan. 20.—Conferences were held with the harbor commissioners in regard to general plans of harbor development in conjunction with the railway system; with delegations from North Vancouver, South Vancouver, New Westminster, and Burnaby; on the grain situation, with R. H. Gale and M. A. Macdonald. The Canadian club gave a luncheon.

Vancouver was left on the eastward return journey on Jan. 21 at 9 a.m. A 15 minutes stop was made at Kamloops, and Jasper was reached on Jan. 22 at 8.30 a.m., a stop being made till 4 p.m. Sir Henry went through Jasper Park, under the Superintendent's guidance, first proceeding towards the base of Pyramid Mountain, and seeing several herds of elk. The Athabasca River was crossed to Lac Beauvert, where the extension being made to Jasper Park Lodge, and which will give a total accommodation for 125 guests, was inspected. Buffalo Park, Wainwright, was then visited. Edmonton was passed through on Jan. 23 early in the morning. A stop was made at North Battleford, from 4.30 to 5.30, and Prince Albert was reached at 11 p.m., being left again on Jan. 24

train proceeding over the National Transcontinental Ry., via Cochrane, La Tuque, Hervey Jct., Grand Mere, Shawinigan Falls, and Joliette, to Ottawa, which was reached on Jan. 28 at 8 p.m.

Sir Henry's speeches at the various luncheons and dinners, which were reported pretty fully in western papers, covered a wide range of subjects, some of the principal topics being the necessity for a vigorous immigration policy; the want of more business over the C.N.R. to wipe out the deficits; the policy

in regard to the building of branch lines; and a promise to give grain rates earnest consideration. He paid a warm tribute to his predecessor, D. B. Hanna, and the excellent staff of officials the latter had built up, and explained his reason for rescinding the no politics order with regard to employees becoming candidates for parliament or legislatures. He received an enthusiastic reception at every place visited, and undoubtedly created a most favorable impression.

Steel Pit Flat Cars and Depressed Center Flat Cars, Canadian Pacific Railway.

Canadian Railway and Marine World for April, 1922, gave some details of the 3 depressed center flat cars built for the C.P.R. by Canadian Car & Foundry Co., Montreal, together with an illustration of one of them. A side elevation is given herewith. Their chief dimensions are as follows:

Length over striking castings.....	43 ft.
Length over end sills.....	42 ft. 3 in.
Length of depressed platform portion.....	18 ft. 6 in.
Width over stake pockets.....	9 ft. 11 1/4 in.
Width over side sill web.....	9 ft.
Height, top of rail to top of floor plate at ends.....	3 ft. 5 1/2 in.
Height, top of rail to top of floor plate at center.....	2 ft. 4 in.

These cars are designed for transportation of large machinery, the depressed center permitting a taller load to be carried within clearance limits of bridges, tunnels, etc. Details of the underframing, flooring, trucks, air brake equipment, etc., were given in the article in the April number.

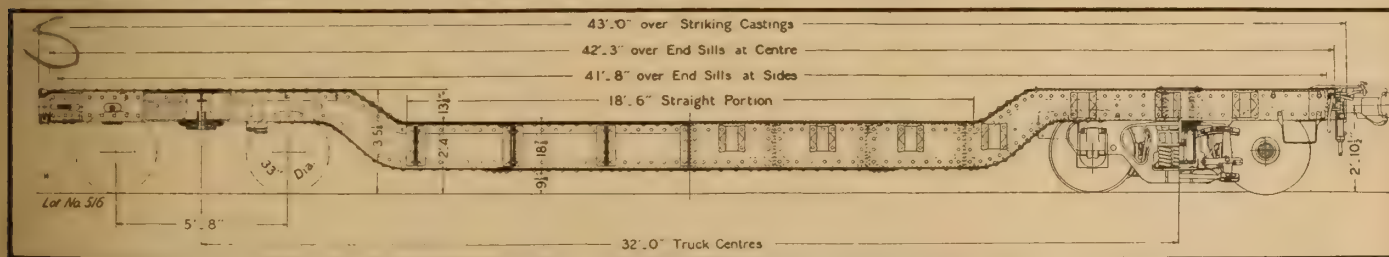
The C.P.R. also had 5 pit flat cars built by Canadian Car & Foundry Co., a side elevation of one of which is given herewith. Their chief dimensions are as follows:—

Length over striking castings.....	37 ft. 6 in.
Length over end sills.....	36 ft. 9 in.
Width over flooring.....	10 ft. 3/4 in.
Height, top rail to top of floor.....	3 ft. 11 1/2 in.

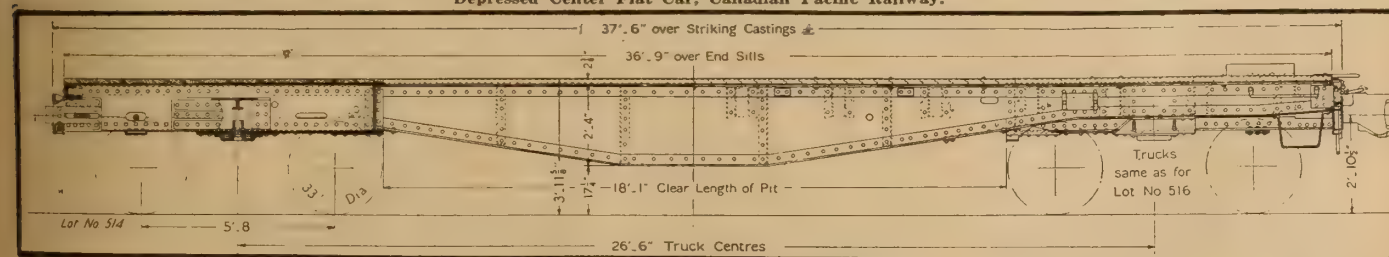
with 3/8 in. top cover plate, 5/8 in. bottom cover plate and 3/8-in. diaphragms. The end sills are 10 in. channels.

The 4-wheel trucks are equipped with A.R.A. axles, the axle capacity, in accordance with the latest A.R.A. recommendations, being 210,000 lb. The journals are 6 x 11 in. Air brakes are Westinghouse K.D. 812 double equipment and A.R.A. standard no. 3 brake beams, with Creco 4-point support, are used. The cars are equipped with cast steel center plates, A.R.A. type D couplers, XL forged steel coupler yokes, Cardwell friction draft gear class G-25-A, Ureco drop type hand brakes and Western angle cock holders. When the pit is not in use, temporary covers are placed over it, allowing the car to be used as a flat car. When the pit is in use, these covers are stored at the ends of the car. The tare weight of each of the cars is 47,800 lb., and maximum capacity 162,200 lb.

The Canadian Industrial Traffic League and the Transportation Club of Toronto, held a joint dinner on Jan. 10. The League's President, W. R. Dickie, of Imperial Oil, Ltd., presided. J. H. Beek, Executive Secretary, National Industrial Traffic League, Chicago, gave a very



Depressed Center Flat Car, Canadian Pacific Railway.



Pit Flat Car, Canadian Pacific Railway.

at 10 a.m. At the hour of Hon. W. C. Kennedy's funeral, the train was stopped for a few minutes, during which Sir Henry addressed the other members of the party, who had assembled in the observation car, and referred feelingly to the Minister's death.

Winnipeg was reached again on Jan. 25 at 6 a.m., the principal feature of the visit being a dinner given by the board of trade, at the Fort Garry Hotel. Winnipeg was left on Jan. 26 at 9 a.m., the

The underframing consists of box girder side sills, fish belly type, each consisting of 3/8 in. web plates, two 4 x 4 x 5/8 in. top angles, four 4 x 4 x 1/2 in. bottom angles, and one 3/8-in. top cover plate; built up center sills, with 3 1/2 x 3 1/2 x 5/16 in. top angles, 5 x 5 x 1/2 in. bottom angles, 1/4 in. top cover plate and 1/2 in. bottom cover plate. The center sill runs from end sill to edge of pit in the floor of the car, 4 ft. behind the body bolster. The body bolsters are built up

interesting address on traffic matters, and the relations which should exist between the shippers and the railways.

Sir Henry Thornton, President, Canadian National Rys., will address the Toronto Canadian Club on Feb. 12. He has been asked to speak before the Buffalo, N.Y., Canadian Club, the members of which want to interest him in the proposed enlargement of the G.T.R. international railway bridge between Bridgeburg and Buffalo.

Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 373, Dec. 30.—Rescinding general order 372, Nov. 24, 1922, relieving railway companies, until further order, from complying with requirements of par. 3 of general order 326, re exchange surcharge on all international shipments, other than coal and coke.

General Order 374, Jan. 16.—Amending general order 370, re rule 33 of General Train and Interlocking Rules, by striking out last sentence and substituting, "Where gates are provided, a red light must be displayed by night. In both cases such light shall be hooded so as to show along the highway only."

33,207, Dec. 11.—Ordering New York Central Rd. to continue train 25 between Valleyfield and Montreal, and to provide train service from Montreal to Valleyfield, Que.

33,208, Dec. 11.—Approving plan showing revision of north home signal on G.T.R. at interlocking plant protecting crossing of G.T.R. and Grand River Ry., at Dundas St., Galt, Ont.

33,209, Dec. 9.—Relieving Canadian National Rys. from providing fencing, gates and cattle guards, on certain mileage on its Dorion Subdivision, Ont.

33,210, Dec. 11.—Authorizing New York Central Rd. to use on its locomotives a double crimped wire netting, the mesh of which shall not be larger than 3/16 in. wide and 3/4 in. long.

33,211, Dec. 9.—Ordering Canadian National Rys. to regrade approaches up to 5% grade at crossing at Dauphin, Man.

33,212, Dec. 9.—Ordering Canadian National Rys. to provide fencing on its Swan River-Prince Albert line opposite William Edwards' farm, Bowsman River, Man.

33,213, Dec. 11.—Approving plan showing changes in interlocking plant at crossing of G.T.R. by Michigan Central Rd. at Appin, Ont.

33,214, Dec. 7.—Rescinding orders 30,886 and 31,636, Apr. 11 and Oct. 8, 1921, respectively, authorizing spur for Merchants Grain Co., Fort William, Ont.

33,215, Dec. 13.—Declaring that for the present Canadian National Rys. crossing of Chevrier Boulevard, Fort Garry rural municipality, near Portage Jct., Man., is protected to Board's satisfaction.

33,216, Dec. 13.—Authorizing G.T.R. to operate over spur and extension to Ontario Fertilizers, Ltd., siding in York Tp., Ont.

33,217, Dec. 13.—Authorizing G.T.R. to build spur for Canadian National Express Co., Toronto.

33,218, Dec. 7.—Approving erection of gates at Michigan Central Rd. crossing at Furncoal Road, Rodney, Ont.

33,219, Dec. 13.—Authorizing G.T.R. to use overhead bridge carrying John St., Paris, Ont., over its tracks.

33,220, Dec. 13.—Amending order 32,909, Sept. 27, 1922, requiring that Quebec Central Ry. gasoline cars be equipped with air brakes by Dec. 15, 1922.

33,221, Dec. 14.—Authorizing C.P.R. to build spur for Ford Motor Co. of Canada, Calgary, Alta.

33,222, Dec. 14.—Declaring that for the present Canadian National Rys. crossing near Lac aux Sables, Que., is protected to Board's satisfaction.

33,223, Dec. 14.—Declaring that for the present C.P.R. crossing near Simpson station, Sask., is protected to Board's satisfaction.

33,224, Dec. 15.—Authorizing C.P.R. to use bridge 8.6, Teeswater Subdivision, Ontario District.

33,225, Dec. 16.—Authorizing Canadian Northern Ry. to cross highway and divert creek at mile 47.9, Athabasca and Edmonton Subdivisions, between Secs. 15 and 16, Tp. 61, Range 24, West 4th Meridian, Alta.

33,226, Dec. 7.—Ordering Canadian National Rys. to erect standard shelter and platform at Carillon, Que., by May 1, 1923.

33,227 to 33,230, Dec. 15.—Approving Bell Telephone Co. agreements with Goderich Telephone Co., and Colborne Tp. Municipal Telephone System, Huron county, Ont.; Euphrasia Tp. Municipal Telephone System, Grey county, Ont., and Chapeau Rural Telephone Co., Pontiac county, Que.

33,231, Dec. 18.—Declaring that for the present, C.P.R. crossing east of Rock Forest station, Que., is protected to Board's satisfaction.

33,232, Dec. 18.—Declaring that for the present, the Canadian National Rys. crossing at Wadena station, Sask., is protected to Board's satisfaction.

33,233, Dec. 19.—Authorizing C.P.R. to open for traffic, portion of its Weyburn-Lethbridge line from mile 214.2 to 251.04.

33,234, Dec. 18.—Authorizing Niagara, St. Catharines & Toronto Ry. to divert its line slightly and extend it, on Great Western St., St. Catharines, Ont.

33,235, Dec. 19.—Ordering C.P.R. to build shallow box culvert 30 ft. long, 18 in. deep, and 3 ft. wide, at Duval, Sask.

33,236, Dec. 19.—Authorizing G.T.R. to build spur for Charcoal Fuel Co., Kearney, Ont.

33,237, Dec. 19.—Authorizing Canadian Northern Ontario Ry. to build spur for Jas. McCreary & Son, Bethnal, Ont.

33,238, Dec. 19.—Authorizing Canadian Northern Ontario Ry. to build spur for Western Stevedore Co., at mile 2.95, Dorion Subdivision, Ont.

33,239, Dec. 26.—Declaring that for the present, Canadian National Rys. crossing near Grand Mere station, Que., is protected to Board's satisfaction.

33,240, Dec. 30.—Declaring that for the present, C.P.R. crossing west of Lytton station, B.C., is protected to Board's satisfaction.

33,241, Dec. 26.—Declaring that for the present the Michigan Central Rd. crossing west of Hawtree station, Ont., is protected to Board's satisfaction.

33,242, Dec. 18.—Authorizing Michigan Central Rd., at G.T.R. expense, to change westbound home signal from lower to upper quadrant, and remove eastbound home signal to a position adjacent to main track, all on G.T.R. at Canfield Jct., Ont.

33,243, Dec. 26.—Approving revised Canadian Northern Ry. location between miles 72.06 and 72.74, near Leon, Man.

33,244, Dec. 26.—Approving agreement between Bell Telephone Co. and Humphrey Tp. Telephone System, Parry Sound District, Ont.

33,245, Dec. 26.—Rescinding orders 15,286 and 15,386, March 15, 1910, and Nov. 14, 1911, respectively, prescribing rates to be charged by G.T.R. and Michigan Central Rd. on binder twine.

33,246, Dec. 26.—Relieving Canadian National Rys. from erecting fences on Main St., inside station grounds, at Ribstone, Alta.

33,247, Dec. 26.—Authorizing Quebec Highways Department to make highway crossing over C.P.R. at Lac Sagauy.

33,248, Dec. 26.—Approving C.P.R. and Ottawa & New York Ry. timetables, effective Oct. 1, 1922, showing train service at Finch, Ont.

33,249, Dec. 26.—Approving Canadian National Rys. plan of interlocking plant to be installed at crossing of Grand Trunk Pacific Ry. in n.w. 1/4 Sec. 14, Tp. 53, Range 24, West 4th Meridian, Edmonton (East), Alta.

33,250, Dec. 28.—Approving agreement between Bell Telephone Co. and South Malahide Telephone Co., Elgin county, Ont.

33,251, Jan. 2.—Amending order 16,194, March 28, 1912, authorizing British Columbia Government to carry Park Ave. across C.P.R. in Slokan City, by adding that the cost of maintenance be paid by the city.

33,252, Dec. 30.—Authorizing Alberta Public Works Department to make highway crossing over Grand Trunk Pacific Ry. in s.w. 1/4 Sec. 3, Tp. 54, Range 16, west 5th Meridian.

33,253, Jan. 2, 1923.—Declaring that for the present the C.P.R. crossing near Florenceville, N.B., is protected to Board's satisfaction.

33,254, Dec. 29, 1922.—Approving agreement between Bell Telephone Co. and North Renfrew Telephone Co., Renfrew county, Ont.

33,255, Jan. 2, 1923.—Declaring that for the present the G.T.R. crossing near Kingston Jct., Ont., is protected to Board's satisfaction.

33,256, Dec. 20, 1922.—Approving agreement between Bell Telephone Co. and St. Angele de Laval Rural Telephone Co., Nicolet county, Que.

33,257, Jan. 2, 1923.—Declaring that for the present C.P.R. crossing near Swift Current station, Sask., is protected to Board's satisfaction.

33,258, Jan. 2.—Approving plan showing change in method of operating bell at C.P.R. and Grand River Ry. crossing over Beverly and Dundas Sts., Galt, Ont.

33,259, Jan. 3.—Authorizing C.P.R. to build spur for Automatic Sprinkler Co. of Canada, Montreal.

33,260, Jan. 3.—Authorizing C.P.R. to build revision of spur for McGillivray Creek Coal & Coke Co., Coleman, Alta.

33,261, Dec. 28.—Declaring that for the present the G.T.R. crossing near Marshville station, Ont., is protected to Board's satisfaction.

33,262, Jan. 4.—Dismissing application of United Farmers of Alberta, Juncos, Alta., for order requiring Canadian National Rys. to provide loading spur on n.e. 1/4 Sec. 26, Tp. 53, Range 10, west 5th Meridian, Alta.

33,263, Jan. 5.—Dismissing complaint of Nova Scotia Shippers' Association against rates charged by Dominion Atlantic Ry. on apples in carloads to Halifax, for export.

33,264, Jan. 3.—Authorizing C.P.R. to build spur for St. Maurice Lumber Co., St. Francois Xavier de Batiscan Parish, Que.

33,265, Jan. 8.—Amending order 33,211, Dec. 9, 1922, requiring Canadian National Rys. to regrade approaches up to 5% at crossing of highway, by showing location of crossing as between Secs. 22 and 27, Tp. 30, Range 3, Ross Jct., instead of Dauphin, Sask.

33,266, Jan. 5.—Declaring that for the present the G.T.R. crossing near Brookfield, Ont., is protected to Board's satisfaction.

33,267, Jan. 9.—Ordering Kettle Valley Ry. to fence gap on its right of way, north side, between miles 29.5 and 35, and on south side, between miles

29.5 and 34, by May 1.

33,268, Jan. 8.—Declaring that for the present, Canadian National Rys. crossing near Lyalta, Alta., is protected to Board's satisfaction.

33,269, Jan. 3.—Recommending to Governor in Council for sanction, agreement between G.T.R. and C.P.R., re joint use of Brockville passenger station, Ont.

33,270, Jan. 9.—Approving agreement between Bell Telephone Co. and Gore Mutual Telephone Co., Essex county, Ont.

33,271, Jan. 11.—Declaring that for the present, Canadian National Rys. crossing, 10 poles west of mile 663, Blackfoot Subdivision, Alta., is protected to Board's satisfaction.

33,272, Jan. 13.—Declaring that for the present, Lake Erie & Northern Ry. crossing at Waterford, Ont., is protected to Board's satisfaction.

33,273, Jan. 13.—Authorizing C.P.R. to build spur for A. MacDonald & Co., near Galloway, B.C.

33,274, Jan. 13.—Authorizing British Columbia Public Works Department to make highway crossing over Great Northern Ry. at Cawston, B.C.

33,275, Jan. 13.—Authorizing City of Stratford, Ont., to make highway crossing over G.T.R. at Delamere Ave.

33,276, Jan. 15.—Authorizing Canadian Northern Ry. to build spur for Newcast Coal Co., Drumheller, Alta.

33,277, Jan. 17.—Approving agreement between Bell Telephone Co., and South Colchester Telephone Co., Essex county, Ont.

33,278, Jan. 4.—Ordering Grand Trunk Pacific Ry. to repair fencing on right of way near Viking, Alta., between miles 715 and 716, south side, by May 1.

33,279, Jan. 3.—Approving specifications and plans of Simon Collran award drain and the Ferry award drain, Caledonia Tp., Ont., where same cross Central Ry. of Canada.

33,280, Jan. 18.—Declaring that for the present, C.P.R. crossing near St. Thomas, Ont., mile 30.3, St. Thomas Subdivision, is protected to Board's satisfaction.

33,281, Jan. 16.—Approving plan showing automatic signal protection for gauntlet track at Port Robinson, Ont., and authorizing G.T.R. to operate over said section without first stopping.

33,282, Jan. 3.—Relieving C.P.R. from maintaining speed restrictions of 15 miles an hour between miles 6.5 and 12.34, Manitoba and North Western Ry.

33,283, Jan. 16.—Approving revision of Canadian Northern Ry., miles 32.41 to 38.42, Kasha-bowie Subdivision, near Mokomon, Ont.

33,284, Jan. 8.—Ordering C.P.R. to build subway at Julien's crossing, about 1/2 mile east of station at Pont Rouge, Que.

33,285, Jan. 5.—Dismissing application of L'Enfant Jesus Parish, Beauce county, Que., for authority to make highway crossing over Quebec Central Ry., which would lead to Vallee Jct. station.

33,286, Jan. 8.—Authorizing Quebec Ry., Light, Heat & Power Co. to build across Canadian National Rys. at Beauport Road, Limoilou, Que.

33,287, Jan. 18.—Declaring that for the present, the second crossing east of Port Credit, Ont., over G.T.R., is protected to Board's satisfaction.

33,288, Jan. 13.—Declaring that for the present, the Brantford & Hamilton Electric Ry. crossing of Trinity Road, between Alberton and Summit, Ont., is protected to Board's satisfaction.

33,289, Jan. 18.—Approving Canadian National Rys' clearances at locomotive house doors and coaling plant at Longue Pointe, Que.

33,290, Jan. 15.—Approving plan of interlocking plant to be installed at crossing of C.P.R. and Canadian National Rys. at Hurdman, Ont.

33,291, Jan. 18.—Authorizing G.T.R. to divert public road between Lots 1 and 2, Con. 1, Waterloo Tp., Ont., to connect with concession road between Broken Front Con. 1 and Con. 1.

33,292, Jan. 18.—Extending to Feb. 15, time within which C.P.R. may complete station building at Superb, Sask.

33,293, Jan. 13.—Declaring that for the present, first crossing north of Essondale station, B.C., over C.P.R., is protected to Board's satisfaction.

33,294, Jan. 20.—Approving and authorizing clearances at bridges joining buildings of Durant Motors of Canada, Leaside, Ont.

33,295, Jan. 20.—Recommending to Governor in Council for sanction, agreement between B. C. Telephone Co., Ltd., and B. C. Telephone Co., providing for transfer of the former's undertaking, etc., to the latter.

33,296, Jan. 18.—Approving detail plan showing interchange track between Canadian National Rys. and C.P.R. at Kamloops, B.C.

33,297, Jan. 19.—Authorizing G.T.R. to build spur for Muskoka Wood Mfg. Co., at Huntsville, Ont.

33,298, Jan. 19.—Approving plan showing location of dyke and stop-gap on Canadian National Rys. right of way, mile 74, at Fraser River and Atcheltz Dyke crossings, Sumas Dyking District, B.C.

33,299, Jan. 19.—Ordering C.P.R. to maintain speed restriction of 10 miles an hour at crossing at St. Stephen, N.B., crossing to be protected by flagman at C.P.R. expense, during the four days of the annual exhibition.

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The Pacific Grain Route.

British Columbia people are deter-
mined to make Vancouver a port of im-
portance in handling Canadian prairie
grain on its way to Europe, and are
strongly advocating, first, enlargement
of elevator capacity at the port, and, sec-
ond, reduction of rail rates on grain
from prairie province points to the
Pacific coast for export. The need for
enlarged elevator capacity was called to
the attention of Dr. J. H. King, Dominion
Minister of Public Works, who visited
Vancouver in the latter part of Dec., 1922,
and a Winnipeg press report of Jan. 4
quoted him as having stated that the
capacity of the Government elevator at
Vancouver would be doubled this year.
A subsequent Ottawa press dispatch
characterized this statement as prema-
ture, however, stating that the facts were
that Dr. King had been impressed with
the feasibility of using Vancouver as an
export port for grain going to Europe,
that he realized the need for increased
elevator capacity there, and that he would
recommend to his colleagues that such
increased capacity be provided. An Ot-
tawa press dispatch of Jan. 11, stated
that the Government elevator in Van-
couver had been transferred by order in
council from the Trade and Commerce
Department's jurisdiction to that of the
Vancouver Harbor Commissioners for
operation, the change to be effective Aug.
31. One of the commissioners, R. E.
Beattie, is quoted by a Vancouver paper
as having said in this connection: "This
leaves us free to go ahead and make all
arrangements for increasing storage,
dockage and other grain handling facili-
ties. There is no antagonism in the east
to the development of the Pacific route.
Neither the Winnipeg Grain Exchange,
the Fort William elevator people, nor
Montreal interests are anything but sym-
pathetic toward the proposal." The de-
velopments mentioned above indicate
that every effort is to be made to have
the grain handling facilities at Vancou-
ver increased and rendered more suffi-
cient. In the 1921-22 crop year, ended
Aug. 31, 1922, 7,380,049 bush. of grain
were handled through Vancouver, and in
the first three months of the 1922-23
crop year 3,207,453 bush.

In addition to wanting enlarged ele-
vator capacity, the B.C. people are even
more insistent in demands for lower rail
rates on westbound grain for export. In
this connection, an appeal from the Board
of Railway Commissioners' decision on
freight rates, as affecting British Colum-
bia, was to be heard before the Dominion
Cabinet on Jan. 25, when Premier Oliver,
of British Columbia, was to appear in an
effort to get rates further reduced, but
the hearing has been postponed till some
time in February. The Board of Rail-
way Commissioners' decision in the
equalization of rates case was given in
Canadian Railway and Marine World for
Aug., 1922, the part of it applying to the
British Columbia situation being on pg.
398.

In support of their contention that the
route via Vancouver is the logical one for
the export of a large quantity of Cana-
da's surplus grain, Vancouver people
claim that part of Saskatchewan's and
Alberta's crop, possibly 200,000,000 bush.,
can move more economically via the
Pacific and the Panama Canal than via the
eastern route. They contend that at the
rates existing in the latter part of 1922,
a saving of about 10c a bush. would
accrue to the prairie farmers, if their

grain went by the western route rather
than by the eastern, this being arrived
at as follows: via Vancouver, the trans-
portation charge on a bushel of wheat
was 15c from Calgary, or Edmonton, to
Vancouver, and 22c from Vancouver to
Liverpool, a total of 37c; via Fort Wil-
liam, the rate from Calgary, or Edmon-
ton, to Fort William was 15½c; from
Fort William to Montreal, lake and rail,
20c, or from Fort William to St. John,
via the winter route, 21c, and from At-
lantic ports to Liverpool, 12c, making a
total charge by the eastern route of about
47c. They claim that the existing rail
rate of 15c a bush. from Edmonton, or
Calgary, to Vancouver, 640 miles, as
against 15½c from Edmonton, or Cal-
gary, to Fort William, 1,280 miles, con-
stitutes a discrimination against British
Columbia and Western Canada gener-
ally, which should be eliminated, although
the railways claim that the westbound
rates are not discriminatory on account
of operating costs being higher in the
mountain districts than on the prairies.
The B. C. people further contend that,
by using the Pacific route, the prairie
farmer would be able to sell his wheat
any time during the year, instead of be-
ing forced to dump it on a speculative
market before the close of navigation on
the lakes, and argue that this feature
alone should add easily 3c a bushel to
the price received by the grain grower,
or a total of \$6,000,000 on a 200,000,000
bush. crop.

There are men in the grain trade who
do not share the optimism about Van-
couver as a grain export port which the
people of that city display, as is shown
by a report quoting a well-known Cal-
gary grain man, to the effect that he
considered the Vancouver route imprac-
ticable, except for winter shipments. He
is reported to have stated that if a mar-
ket for Canadian cereals could be de-
veloped in the Orient, it would change
the situation, but he did not believe that
a stable market for grain would ever be
secured in the Oriental countries. He
contended that the development which
Vancouver had experienced as a grain
shipping port in the last two years was
largely due to the ocean traffic situation,
wherein freights were scarce and rates
had dropped to unprecedented levels, and
was of the opinion that plentiful offer-
ings of traffic and increasing rates would
make the route commercially impractic-
able. Despite adverse opinions, however,
there is a great body of opinion in Al-
berta and Saskatchewan in favor of the
route, and an Edmonton press dispatch
of Jan. 12, states that Premier Greenfield
and other members of the Alberta Gov-
ernment, at a conference held in Edmon-
ton on Jan. 11, and attended by Premier
Oliver, of British Columbia, approved the
plans of Vancouver and British Colum-
bia to develop the export of grain by the
western route, in every way possible.

Examination into this matter demon-
strates that with rates bearing the same
relation to each other as they have in
the immediate past, it is cheaper to ship
Canadian wheat from certain prairie
territory, via Vancouver and the Panama
Canal, than via Fort William and Atlan-
tic ports, and it further demonstrates
that just how far east this territory will
extend must depend chiefly on rate rela-
tionships and terminal handling charges,
that is, on the relationship as between
total carrying charges. As carrying
charges fluctuate in their relationships

to each other, the economically correct dividing line as between those territories which should ship east and those which should ship west will also shift in position. At all events, though, the Pacific coast people appear determined to have Canadian grain for export move westward from as far east as economic and geographical conditions will justify, and the developments which take place in this connection in the next few years will be interesting from a transportation and traffic viewpoint and well worth watching.

Party Journalism Gone Mad.

The Toronto Mail and Empire's Ottawa correspondent, in a recent two column article on "Liberalism laughs at laws to abolish party patronage," says in regard to the Canadian National Rys.:—"In the Lanark election, while Premier King was appealing to the electors for support, his workers were distributing pamphlets at the door promising national railway contracts if that appeal was answered satisfactorily. There is no doubt that the contracts would have been forthcoming, for recently \$10,000,000 worth of equipment was ordered without a dollar being voted by Parliament, and without James Stewart, the only business man of standing on the executive, being consulted. Who ordered the equipment? Not, surely, Sir Henry Thornton, because he has not yet completed his inspection. Members of the executive were not consulted. It is stated on sound authority that the new equipment would be unnecessary if the Grand Trunk and Canadian National were co-ordinated, and the joint equipment properly allocated. . . . The recent orders are patronage on a large scale."

The charge about the Lanark election is undoubtedly true, as printed matter was widely distributed urging support for the Government candidate, and promising orders to be placed at Smiths Falls. Of course, the C.N.R. management had nothing to do with that, which was probably the work of local politicians, but Hon. T. A. Low, minister without portfolio, who appeared to have charge of the general campaign, did not disavow the action, as far as Canadian Railway and Marine World is aware.

But the charge that the orders placed recently for rolling stock were patronage, is absolutely foundationless. They were no more patronage than the orders given from time to time under D. B. Hanna's Presidency, and were placed on a similar business basis. It was well known for a considerable time past that both the Canadian National and the Grand Trunk were badly in want of additional rolling stock, and the placing of orders was deferred pending the management's reorganization. It was not necessary for Sir Henry Thornton to make a trip over the lines to enable him to decide what orders should be given. Full data of the requirements were prepared, under the direction of S. J. Hungerford and W. D. Robb, Vice Presidents and General Managers of the Canadian National and Grand Trunk, respectively, and were submitted to Sir Henry, who decided to have the orders given collectively, full particulars of which appear on an earlier page of this issue. Canadian Railway and Marine World believes that the prompt placing of the orders was sound business policy. In addition to filling much needed requirements, they will provide work for a large number of men at New Glasgow, Montreal, Kingston and Hamilton at a

time when it is much needed. There is nothing in the contention that the new equipment would be unnecessary if the C.N.R. and the G.T.R. were fully co-ordinated and the joint equipment allocated properly. There has been interchange of equipment between the C.N.R. and G.T.R. for some time past.

Steam Railway Track Laid in 1922.

Revised and completed returns received by Canadian Railway and Marine World, show that the total mileage of new single track, exclusive of second track, laid in Canada in 1922 was 160.25 miles, as follows:—

Canadian National Rys.	Miles	Miles
Magnolia, Alta., connection with Grand Trunk Pacific Ry...	0.83	
Battle-Duhamel, Alta., connection with G.T.P. Ry.....	3.51	
Lampman extension.....	1.52	
Regina connection.....	3.67	
		9.53
Canadian Pacific Ry.—		
La Salle loop line, Highlands to Cote. St. Paul, Que.....	4.50	
Interprovincial & James Bay Ry., from mile 10 from Kipawa, Que., to track end.....	17.00	
Russell branch, Man., Cracknell to Inglis	5.80	
Moose Jaw s.w.	30.00	
Leader s. easterly.....	1.00	
Weyburn-Lethbridge line, Bain to Manyberries, Alta.....	17.39	
Acme-Empress line, Kirkpatrick to Knee Hill.....	1.23	
		76.92
Esquimalt & Nanaimo Ry.—		
Great Central Lake branch.....	0.30	
Kettle Valley Ry.—		
Dog Lake south to Experimental Farm, B.C.....	16.60	
Lacombe & North Western Ry.—		
Mile 36.7, near Rimbey, to mile 49.2	12.50	
Timiskaming & Northern Ont. Ry.—		
From Cochrane to Abitibi River	44.40	
		160.25
Total		

Of this new track, 93.82 miles were laid on the C.P.R. and lines owned or operated by it; 9.53 miles by the Canadian National Rys.; 44.40 miles by the Timiskaming & Northern Ontario Ry., owned by the Ontario Government, and 12.50 miles by the Lacombe & North Western Ry., owned by the Alberta Government. New track laid was distributed among the various provinces as follows: Ontario, 44.40 miles; Alberta, 40.65; Saskatchewan, 31.00; Quebec, 21.50; British Columbia, 16.90; Manitoba, 5.80.

In connection with the industrial and logging railway mileage, given in Canadian Railway and Marine World for January, the actual length of the Abitibi Transportation & Navigation Co's line from Iroquois Falls to Hughes, Ont., is 15.76 miles, instead of 16 miles, as reported.

Carriage of Intoxicating Liquor on Railways.—Towards the end of 1921, G. Rideout, a liquor inspector at Moncton, N.B., seized a car containing liquor in the Canadian National Rys. yard at Sydney, N.S., consigned to one Petrie, and billed to Glace Bay. The points upon which the case reached the higher court was as to the legality of the seizure, and who had jurisdiction. On behalf of Petrie, it was claimed that the seizure was invalid, as the consignment had not reached its destination at the time; and also that the Doherty Act, under which the seizure was made, had been superseded by the Canada Temperance Act, part 4. The Nova Scotia Supreme Court decided that seizures made under the Doherty Act are valid, and that jurisdiction lies with the magistrate at whatever point the seizure is made, and not exclusively at the point of destination. It is said that the case will be taken to the Supreme Court of Canada.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—We are advised that the betterments in 1922 included the following:—

Woodstock Division.—Relaying 17 miles of track on Edmundston and Tobique Subdivisions with 85 lb. rail; and relaying 3 miles of sidings with heavier rails; 10 miles of ballasting on Tobique and Shogomoc Subdivisions, and placing 90,000 ties and 60,000 tie plates, throughout the division. Three new sidings were built, totalling 400 ft.; and 24 new 85 lb. switches were installed releasing lighter ones. considerable amount of repair and new concrete work was done on the smaller bridges and culverts—and other miscellaneous work on buildings, banks and wharves.

Brownville Division.—Twelve miles of main line relay rails were put in for repairs throughout the division, and 17 miles of 72 lb. rails were laid on the Shore Line Subdivision, releasing 48 lb. rails. Bridge abutments at Long Point and Megantic, on the Moosehead Subdivision, were rebuilt in concrete, and a number of small concrete culverts were built on the smaller waterways, replacing timber structures. About 1,000 ft. of wooden trestle deck was renewed along the wharf sheds at West St. John.

Montreal Subway.—Montreal City Council has been authorized by the Quebec Legislature to borrow \$300,000 without a vote of the people, to rebuild the subway under the C.P.R. tracks at Ontario St., Montreal. The council's executive committee is reported to be making preparations for having the work done during the summer.

Ottawa, Northern & Western Ry.—The Dominion Parliament is being asked to extend the time for the construction of a line from the present terminus of the Waltham Branch at Waltham, Que., through Waltham, Chichester and Sheen Townships, Que., and across the Ottawa River to a junction with the C.P.R. near Chalk River, Ont.

Port Arthur Track Extension.—A press report states that it is proposed to add considerable yard trackage at Port Arthur, Ont., during the year, in connection with the enlargement of grain elevators.

Fort William Freight Sheds.—A press report states that the two freight sheds burned in 1922, will probably be rebuilt this year.

Manitoba & North Western Ry.—The Dominion Parliament is being asked to extend the time for the commencement and completion of the following lines: (1) From near Tuffnel, in Tp. 30, Range 10 or 11, west of 2nd Meridian, thence northwesterly, northerly and westerly to a crossing of the North Saskatchewan River, in Tp. 49, 50 or 51, Range 14 or 15, west 2nd Meridian, and thence westerly to Prince Albert, Sask. (2) From near Theodore Tp. 28, Range 6 or 7, west 2nd Meridian, generally westerly to between Govan and Lanigan, Sask., on the C.P.R. Pheasant Hills Branch.

Weyburn-Lethbridge Line Completion.—The Board of Railway Commissioners, on Dec. 19, 1922, authorized the opening for traffic of the recently completed section of the Weyburn-Lethbridge line, mile 314.2 to 351.04. Of the mileage authorized for operation, track was laid on 15.55 miles during 1922; the other portion having been laid in 1921. (Jan., pg. 28.)

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Car Demurrage Bureau—Canadian Freight Association, Western Lines.—F. W. THOMPSON, heretofore acting Chairman, has been appointed Chairman, with jurisdiction over freight inspection, warehouse storage, weight agreements and car demurrage on all lines west of and including Port Arthur and Armstrong, Ont. Office, Winnipeg.

Canadian Government Merchant Marine Ltd.—R. B. TEAKLE, heretofore Manager, has been appointed General Manager. Office, Montreal.

Canadian National Rys.—J. BLACKLOCK, heretofore at Mount Yard, West Fort William, Ont., has been appointed Roadmaster, Port Arthur, Ont., vice F. McInnery, assigned to other duties.

H. A. CARSON, heretofore City Freight Agent, Canadian National-Grand Trunk Rys., Montreal, has been appointed Commercial Agent, Canadian National-Grand Trunk Rys. there. Office, 230 St. James St.

W. CROWE has been appointed Night Locomotive Foreman, Wainwright, Alta. W. S. DOUGLAS has been appointed foreman welder, Transcona shops, Transcona, Man., vice D. Nelson, who has left the service.

M. C. DUNN, heretofore City Passenger Agent, Canadian National Rys., and City Freight Agent, Canadian National-Grand Trunk Rys., Kingston, Ont., has been appointed Commercial Agent, Canadian National-Grand Trunk Rys. there. Office, 217 Princess St.

H. W. FLEMING, heretofore Assistant Engineer, Ottawa Division, Ontario District, has been transferred to Hornepayne, Ont., during the absence of K. G. Polyblank, Division Engineer, Nipigon Division, Ontario District, who has been granted extended leave of absence from the Operating Department, to take charge of the construction of the Longlac-Nakina cutoff.

R. C. FAIR, heretofore City Freight Agent, Calgary, Alta., has been appointed Division Freight Agent, there, vice W. A. B. Russell, appointed Division Freight Agent, Saskatoon, Sask.

D. E. GALLOWAY, heretofore Assistant Vice President, G.T.R., has been appointed Assistant to President, Canadian National Rys. Office, Ottawa.

F. G. GOULD, heretofore City Freight Agent, Canadian National-Grand Trunk Rys., Toronto, has been appointed Commercial Agent there. Office, New Union Station.

L. S. IRVINE, heretofore Soliciting Freight Agent, Regina, Sask., has been appointed Soliciting Freight Agent, Calgary, Alta., vice R. C. Fair, City Freight Agent, appointed Division Freight Agent there.

J. LOWE, heretofore Assistant Foreman, Joliette, Que., has been appointed Locomotive Foreman there, vice W. H. Walker, resigned.

F. P. NELSON, heretofore City Freight Agent, Canadian National-Grand Trunk Rys., Hamilton, Ont., has been appointed Commercial Agent, Canadian National-Grand Trunk Rys., there. Office, 54 Federal Life Bldg.

H. J. PAGE, heretofore Superintendent of Police and Special Service, Toronto, has been appointed Chief of the Investigation Department, in charge of police

matters and investigations, reporting to, and receiving instructions from the President, but he and his department will be available to the various vice presidents, and will act under their instructions as required. Office, Ottawa, Ont.

K. G. POLYBLANK, Division Engineer, Nipigon Division, Ontario District, Hornepayne, Ont., has been granted extended leave of absence from the Operating Department, and has been appointed Division Engineer in charge of construction of the Longlac-Nakina cutoff. Office, Longlac, Ont.

G. A. ROBERTS has been appointed acting night chief dispatcher, Fort Rouge, Man., vice M. D. McDonald, assigned to other duties.

GERARD RUEL, K.C., heretofore General Counsel, Canadian National Rys., has been appointed Vice President and General Counsel for all lines, including Canadian Government, Canadian Northern, Grand Trunk and Grand Trunk Pacific. Pending a decision as to the general headquarters he will have an office at 122 Bank St., Ottawa. In the meantime the members of his staff in Toronto will remain there.

W. A. B. RUSSELL, heretofore Division Freight Agent, Calgary, Alta., has been appointed Division Freight Agent, Saskatoon, Sask., vice B. R. Marsales, resigned to enter commercial business.

P. SCHLAMP, heretofore Soliciting Freight Agent, Winnipeg, has been appointed Soliciting Freight Agent, Regina, Sask., vice L. S. Irvine, appointed Soliciting Freight Agent, Calgary, Alta.

Canadian Pacific Railway.—T. B. BALANTYNE, heretofore Division Engineer, Schreiber, Ont., has been appointed Division Engineer, Farnham Division, Quebec District, vice M. Kelly, appointed Division Engineer, Toronto Terminals. Office, Farnham, Que.

DOCTORS E. MURRAY BLAIR AND C. DE MUTH are reported to have been appointed by the C.P.R. and its employees' medical association as medical officers for Vancouver, to devote practically all their time to the work. It is also stated that Doctors A. W. Hunter, A. J. MacLachlan and F. P. Patterson, who devoted only portions of their time to the work, have retired.

G. E. COSTELLO, heretofore General Agent, Yokohama, Japan, has been appointed in charge of the Passenger Department there, under the General Agent, J. Rankin.

M. FITZGERALD, heretofore Assistant to Manager, General Traffic, Yokohama, Japan, has been appointed Special Representative there.

Miss M. C. HALL, formerly Society Editor, Winnipeg Free Press, is reported to have been appointed Chief Assistant, in the C.P.R. Western Lines Publicity Department, at Winnipeg.

F. J. JONES, heretofore Locomotive Foreman, MacTier, Ont., has been appointed Locomotive Foreman, McAdam, N.B., vice H. L. Scott, appointed General Foreman there.

M. KELLY, heretofore Division Engineer, Farnham Division, Quebec District, Farnham, has been appointed Division Engineer, Toronto Terminals Division, Ontario District, vice J. H. Barber, retired on pension. Office, Toronto.

R. A. MILLER, heretofore General Foreman, McAdam, N.B., has been appointed Locomotive Foreman, Lambton, Ont., vice E. J. Murphy.

E. J. MURPHY, heretofore Locomotive Foreman, Lambton, Ont., has been appointed Locomotive Foreman, MacTier, Ont., vice F. J. Jones, transferred to McAdam, N.B.

J. RANKIN, heretofore Assistant Agent, Yokohama, Japan, has been appointed General Agent for Japan. Office, Yokohama.

H. L. SCOTT, heretofore Locomotive Foreman, McAdam, N.B., has been appointed General Foreman there, vice R. A. Miller, appointed Locomotive Foreman, Lambton, Ont.

W. H. WINTERROWD, Chief Mechanical Engineer, Montreal, has resigned to become Assistant to President, Lima Locomotive Works, at New York, N.Y.

Edmonton, Dunvegan & British Columbia Ry.—M. W. BOUCHER, heretofore General Locomotive Foreman, who has been appointed Assistant Superintendent at McLennan, Alta., as stated in Canadian Railway and Marine World for January, has, in addition to his duties in the mechanical department, general control of locomotive men, firemen, conductors and trainmen, who report to him.

S. R. LAMB, Resident Engineer, who has had his jurisdiction extended over maintenance of way, as stated in Canadian Railway and Marine World for January, is in control of the engineering, maintenance of way, and bridge and building departments.

All matters pertaining to accounting, performed formerly by the Superintendent's accountant, have been transferred to the General Auditor, E. J. BULGIN. Dispatchers, agents and others, not specifically mentioned above, report to J. A. MACGREGOR, Manager, on all matters excepting accounting.

Grand Trunk Ry.—R. BUSBY, heretofore ticket clerk, Tunnel Terminal, Montreal, has been appointed ticket agent there, vice H. J. LeClair, appointed Passenger Agent, Montreal City Office.

H. A. CARSON, heretofore City Freight Agent, Canadian National-Grand Trunk Rys., Montreal, has been appointed Commercial Agent, Canadian National-Grand Trunk Rys., there. Office, 230 St. James St.

F. G. GOULD, heretofore City Freight Agent, Canadian National-Grand Trunk Rys., Toronto, has been appointed Commercial Agent, Canadian National-Grand Trunk Rys., there. Office, New Union Station.

W. E. HORNE, heretofore chief clerk to General Agent, has been appointed Northbound Agent, Boston, Mass. Office, 294 Washington St.

J. E. JOUBERT, heretofore Passenger Agent, Montreal City Office, has been appointed Terminal Passenger Agent, Bonaventure Station, Montreal.

H. J. LeCLAIR, heretofore ticket agent, Tunnel Terminal, Montreal, has been appointed Passenger Agent, Montreal City Office, vice J. E. Joubert, appointed Terminal Passenger Agent, Bonaventure Station, Montreal.

J. S. McADAM, heretofore Trainmaster, Districts 31 and 32, Ottawa Division, Ontario Lines, Madawaska, Ont., has been appointed Trainmaster, Ottawa Division, W. E. Weegar, heretofore Trainmaster, District 30, having been appointed acting Superintendent, Barrie Division, Allandale, Ont. Office, Ottawa.

F. P. NELSON, heretofore City Freight Agent, Canadian National-Grand Trunk Rys., Hamilton, Ont., has been

appointed Commercial Agent, Canadian National-Grand Trunk Rys., there. Office, 54 Federal Life Bldg.

G. F. TARBELL, heretofore Travelling Freight Agent, has been appointed East-bound Agent, Boston, Mass. Office, Old South Building, 294 Washington St.

W. E. WEEGAR, heretofore Train-master, District 30, Ottawa Division, Ontario Lines, Ottawa, has been appointed acting Superintendent, Barrie Division, Ontario Lines, during the absence on account of illness of P. J. Lynch, Superintendent. Office, Allandale, Ont.

Northern Pacific Ry.—W. H. JAYNES, who is stated in a press report to have been chief clerk to Assistant General Freight Agent at Portland, Ore., is said to have been appointed Assistant General Agent at Vancouver, B.C., and it is also stated that H. Swinford, General Agent there, will retire on March 31, and be succeeded by Mr. Jaynes.

Pacific Great Eastern Ry.—T. KILPATRICK, formerly Superintendent, District 1, British Columbia Division, C.P.R., Revelstoke, B.C., from which position he resigned in Nov., 1912, is reported to have been appointed General Manager, P.G.E.R., vice A. B. Buckworth, reported appointed Deputy Minister of Railways for British Columbia.

Self Propelled Cars on Steam Railways.

The Canadian National Rys. management has ordered the construction of a storage battery car at the Niagara, St. Catharines and Toronto Ry. shops at St. Catharines, Ont., and the plans are being prepared. The car will be numbered 15,804, and will be equipped with Edison batteries and 4 G.E. 261-A motors of 25 h.p. each.

Gas-electric car 15,800, which has been operating for some time between Winnipeg and Transcona, Man., has been sent to St. Catharines, Ont., to be converted into a storage battery car. It will be equipped with 250 Edison batteries and 4 G.E. 261-A motors.

When the two conversions mentioned above have been completed, the C.N.R. will have 5 storage battery cars in operation, nos. 15,800; 15,801, bought from Railway Storage Battery Car Co.; 15,802 and 15,803, bought from Cambria & Indiana Rd., and 15,804. At present car no. 15,801 is operating between Toronto and Beaverton, Ont., on the schedule given in a preceding number of Canadian Railway and Marine World, and nos. 15,802 and 15,803 are being overhauled at St. Catharines. Car 15,802 will have 266 cells and 4 Westinghouse V-65 A-3 motors of 25 h.p. each, and will be placed on the Bathurst-Campbellton run, in the Maritime District. Car 15,803 will be fitted with Exide batteries and will be placed on the Brockville-Westport run, on the Ontario District.

Gasoline car service between Cross Creek and Stanley, on the Nashwaak and Stanley Subdivisions, Edmundston Division, Maritime District, which was furnished by car 15,111, has been discontinued for the winter, service now being furnished by steam train.

Vancouver Transportation Building.—A press report states that the construction of a building, designed especially for transportation company offices, and to cost \$1,000,000, is projected in Vancouver.

Death of Hon. W. C. Kennedy.

Hon. William Costello Kennedy, Minister of Railways and Canals, died at Naples, Florida, Jan. 17, from heart failure, while recuperating from the effects of two operations in Montreal for gall stones. The first operation took place Aug. 26, and the second, Sept. 20, 1922, and for some time the worst was feared, but his partial recovery was due to his extraordinary vitality. He left the hospital in Montreal on Nov. 20, and stayed at Stratford, Ont., with his sister, until Dec. 26, when he went to his home in Windsor, Ont., leaving there on Jan. 3 with Mrs. Kennedy for Florida.

He was a son of Wm. and Julia (Costello) Kennedy, was born at Ottawa; Ont., Aug. 27, 1868, and educated at separate school, and De La Salle Institute, Toronto. He began his business career with the London & Canadian Loan & Agency Co., Toronto, in 1887, remaining in its service until 1897, when he engaged in gas and oil business at



Hon. W. C. Kennedy. M.P.

Windsor, Ont. He was President, Windsor Gas Co., 1903 to 1917, and afterwards became a gas and oil operator. He was President, Windsor Board of Trade, 1909 to 1910; trustee, Windsor Board of Education, 1913 to 1918; councillor, Ojibway, 1913 to 1918. He was elected to the House of Commons for North Essex, Ont., Dec. 1917, and again in Dec. 1921. He was a Liberal and a Roman Catholic. He married Glencora Bolton, of Detroit, Mich., May 8, 1907. He was a member of the following clubs: Detroit; Detroit Athletic; Essex County Golf; Ontario (Toronto); Rideau (Ottawa); Country (Ottawa).

The body was met at Washington, D.C., by J. W. Pugsley, Secretary, Railways and Canals Department, and transferred to the Dominion Government official car, in which Mr. Kennedy made his inspection trip over the Canadian National Rys., and also in which he made his last trip south. After arrival at Windsor, Ont., the body lay in state

at the armories, from 2 to 9 p.m., after which it was removed to his house. The funeral took place at Windsor, Jan. 24, the Governor General being represented, and the Prime Minister and other members of the cabinet acting as honorary pall bearers. Among those present were: Right. Hon. Arthur Meighen, ex-Prime Minister; Hon. F. B. Carvell and Calvin Lawrence, Board of Railway Commissioners; Alex. Johnston, Deputy Minister of Marine; G. W. Yates, Assistant Deputy Minister of Railways and Canals; Sir Joseph Flavelle, ex-Chairman, Board of Directors, G.T.R., and a number of officials of the Canadian National, Canadian Pacific and Grand Trunk Rys.

Grain in Store at Elevators.

The Dominion Bureau of Statistics, Internal Trade Branch, reports that for the week ended Jan. 5, the quantity of grain in storage increased as follows: Oats, 203,684 bush.; barley, 553,018; flax, 34,525; rye, 201,865. Wheat decreased 548,236 bush.

Western country elevators' decreases were: Wheat, 1,146,109 bush.; flax 6,780; rye, 10,460; and increases: oats, 239,157; barley, 53,064. Receipts for the previous week were 3,985,985 bush. and shipments 5,853,473.

Interior terminal elevators increases were: Wheat, 255,824 bush.; oats, 35,364; flax, 1,241; rye, 7,263. Barley decreased 1,251 bush.

At public and private terminal elevators at Fort William and Port Arthur, there were increases in all grains: Wheat, 3,127,412 bush.; oats, 317,869; barley, 194,179; flax, 40,064; rye, 210,090; a total increase of 3,889,614 bush. Total receipts at Fort William and Port Arthur, from Sept. 1, 1922 to Jan. 5, 1923, were 226,516,639 bush., and at Vancouver, B.C., 7,650,587.

Winnipeg private terminal elevators showed increases of wheat, 7,903 bush.; oats, 20,601, and barley, 553, decrease.

In eastern public elevators, the increases were: Wheat, 1,111,480 bush.; oats, 72,669; barley, 149,691. Rye decreased 36,832 bush. The total receipts of all grains were 1,033,036 bush. by ship, and 1,200,882 by rail; and shipments were, 1,075,809 by ship, and 1,251,119 by rail.

The quantity of U.S. grain in store at Canadian eastern public elevators was 3,131,383 bush., compared with 6,135,237 for the same period last year. At U.S. lake ports, Buffalo and Duluth, there were decreases: Wheat, 3,756,864 bush.; oats, 372,760; and increases: Barley 152,631, and rye 666. At U.S. Atlantic seaboard ports, there were decreases: Wheat, 147,882 bush.; oats, 109,216; and increases: Barley, 5,257 bush.; rye, 31,138.

Sir Robert D. Reid's Estate.—Miss Harriet D. Reid, daughter of the late Sir Robert D. Reid, formerly President Reid Newfoundland Co., took action some time ago to compel the trustees of the estate, Lord Shaughnessy, Sir William D. Reid, H. D. Reid and R. G. Reid, to pay to the Royal Trust Co., \$2,97,125, as a quarter of her father's holdings in the Reid Newfoundland Co. At Montreal, on Jan. 22, the trustees' application for further delay, on the ground that Sir William Reid could not be examined on account of his ill health, was refused. It is stated that action has been taken to interdict Sir William, who is also a former President of the company, and to declare him unfit to manage his own affairs.

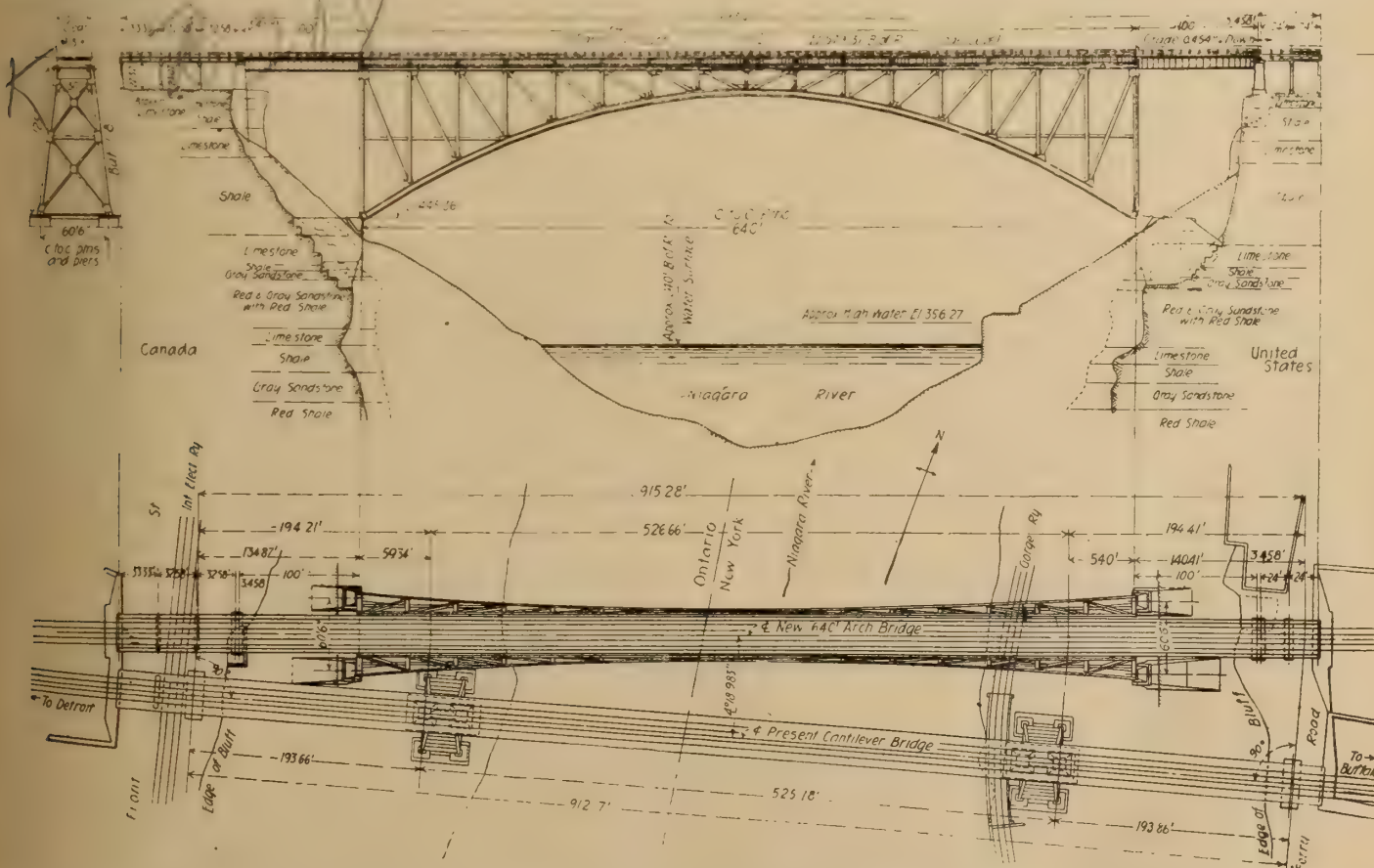
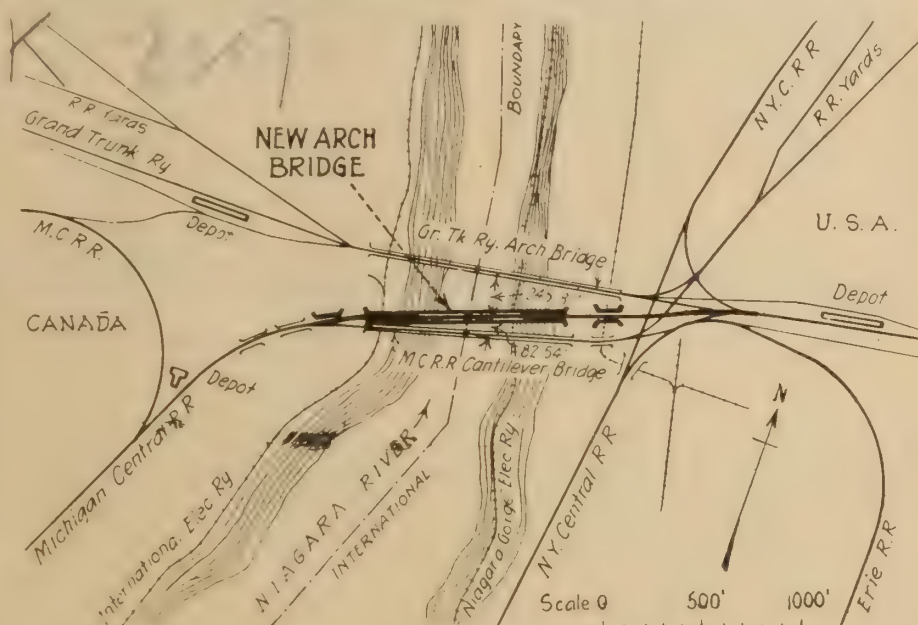
New Bridge Over Niagara River for Michigan Central Railroad.

The cantilever bridge carrying the Michigan Central Rd. tracks over the Niagara River, between Niagara Falls, Ont., and Niagara Falls, N.Y., will, within the next two years, be replaced by a new double track steel arch bridge, of the spandrel braced type, located immediately north of the present bridge, which was built in 1883 from designs by C. C. Schneider, and was a notable structure for its time. It spans a chasm 850 ft. wide and 210 ft. deep to the surface of the water. The river at that point, which is above the whirlpool rapids, is 425 ft. wide, and the velocity of the current, at the center, is $16\frac{1}{2}$ miles an hour. The total length of the bridge is 910 ft. The cantilever towers are spaced 495 ft. center to center; the river arms are 175 ft. long; the anchor arm 195 ft. long; and the suspended span is 120 ft. long. The tower piers are located very close to the river's edge. No borings were made for the examination of the foundations for these, but it was expected that solid rock would be found about at the elevation of the top of the water. The excavation proved, however, that the solid rock was not to be found at this point, but that the formation consisted of very large irregular shaped pieces of rock, closely bonded and interlocked with each other, which in earlier times had broken off from the cliffs above and rolled into the river. As it

Later core borings have shown that the solid rock is 196 ft. below the ground at this point and that the over-lying material consists of large rock, intermingled with smaller boulders and clay.

The cantilever bridge was designed to

the old trusses. This increased the live load capacity of the bridge about 50%, making it equivalent to a Cooper's E 35 loading and this was as much as it was practicable to strengthen it. The maximum loading permitted on the bridge at



was impracticable to excavate much below the level of the water, it was decided to place a heavy bed of concrete on top of this rock, as a foundation for the tower piers, which are 38 ft. high and are built of Queenston limestone backed by Black Rock stone. While more or less cracked, they are still in fair condition.

carry on each track a live load consisting of two 66-ton locomotives, followed by 2,000 lb. per lineal foot, corresponding to a Cooper's E 23 loading. The bridge was strengthened in 1900, by adding a center truss and tower post, resting on new center piers, and also by increasing the sections of some of the members of

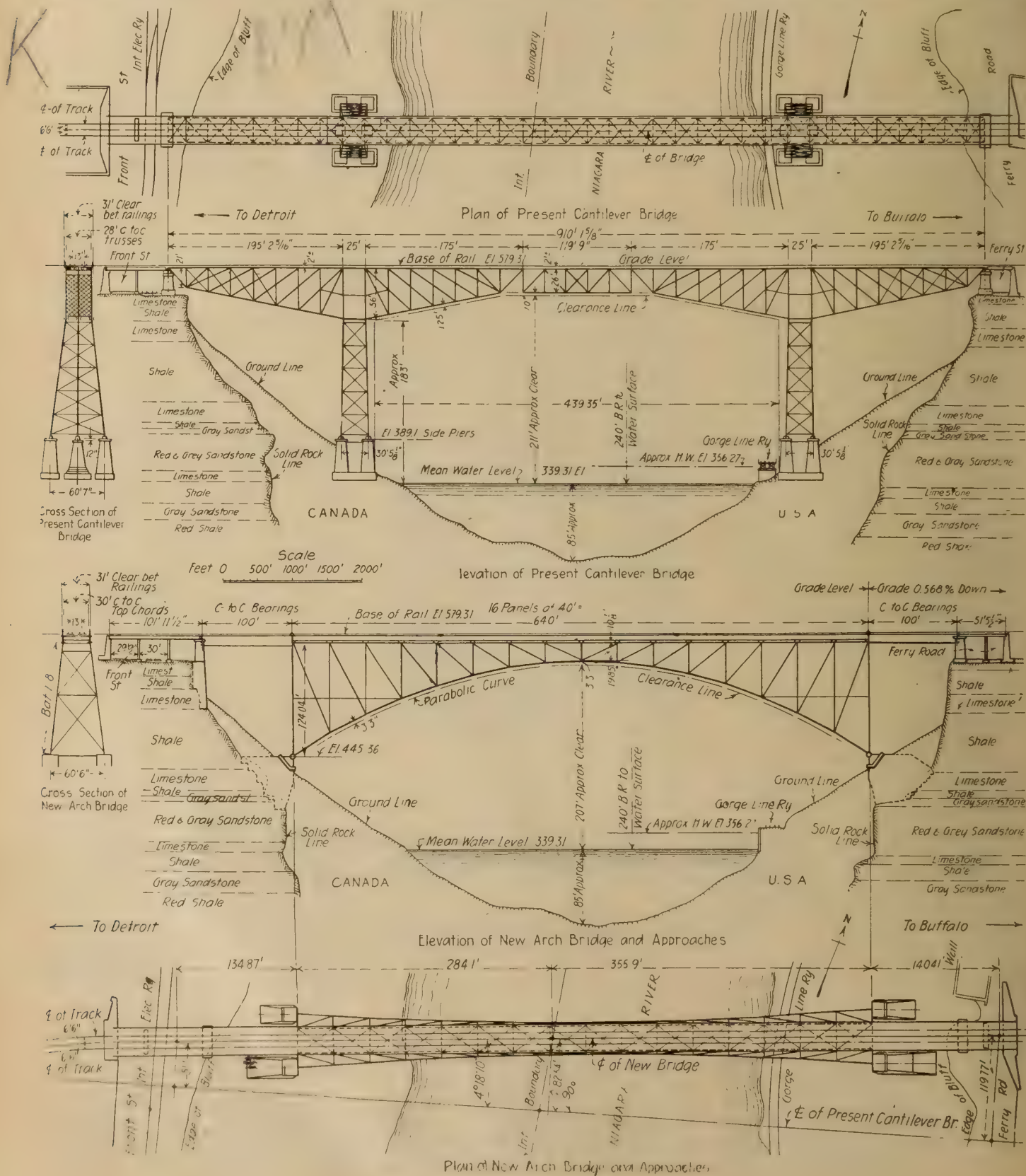
present is equivalent to a Cooper's E 45 loading, and as the bridge has for some time shown the effects of overload, which has made extensive repairs necessary from time to time, and as the necessary restrictions in loading and speed had become undesirable, it was deemed advisable to rebuild the bridge.

The first problem to solve in deciding on the character and length of the new structure was the examination of the rock formation of the gorge, in the neighborhood of the present bridge. The slope of the banks, at this point, rising from the water's edge at an inclination of about 1.3 horizontal to 1 vertical, consists of disintegrated material mixed with large and small boulders which have broken off from the rock ledges of the cliffs. Large boulders also fill the gorge below the water's level, standing

at about the same slope as the banks above the water's level, for about 100 ft. out from the water's edge, after which the slope is much flatter. The depth of the water at the center is about 80 ft. and there is at this point at least 120 ft. of loose rock overlying the solid rock. Extensive core borings made with the diamond drill, from a point just south of the present bridge to a point about 170 ft. north of the same on the United States side and 130 ft. north on the Canadian side, disclosed the profile and the

character of the solid rock formation, underlying the sloping bank of loose material. The information gained from these borings indicated that the gorge narrows up considerably north of the present bridge and that the slope of the rock surface is very steep.

The natural and the most economic structure for a location of this kind is an arch, and so as to shorten the span as much as possible, and make it possible to erect the structure without interfering with traffic on the present bridge, it was



decided to move the new structure as far north of the present bridge as it was practicable to do without making the connections with the present track arrangements, on both sides of the river, difficult. To meet these conditions, the arch span was made 640 ft. long, center to center of end hinges, and was located 51 ft. north of the center line of the present bridge at the Canadian side and 119 ft. at the U.S. side. The location is shown in fig. 1. The location selected brings the thrust of the arch fairly on the solid ledge of gray limestone known as the Clinton ledge. The strata immediately underlying this ledge is a heavy forma-

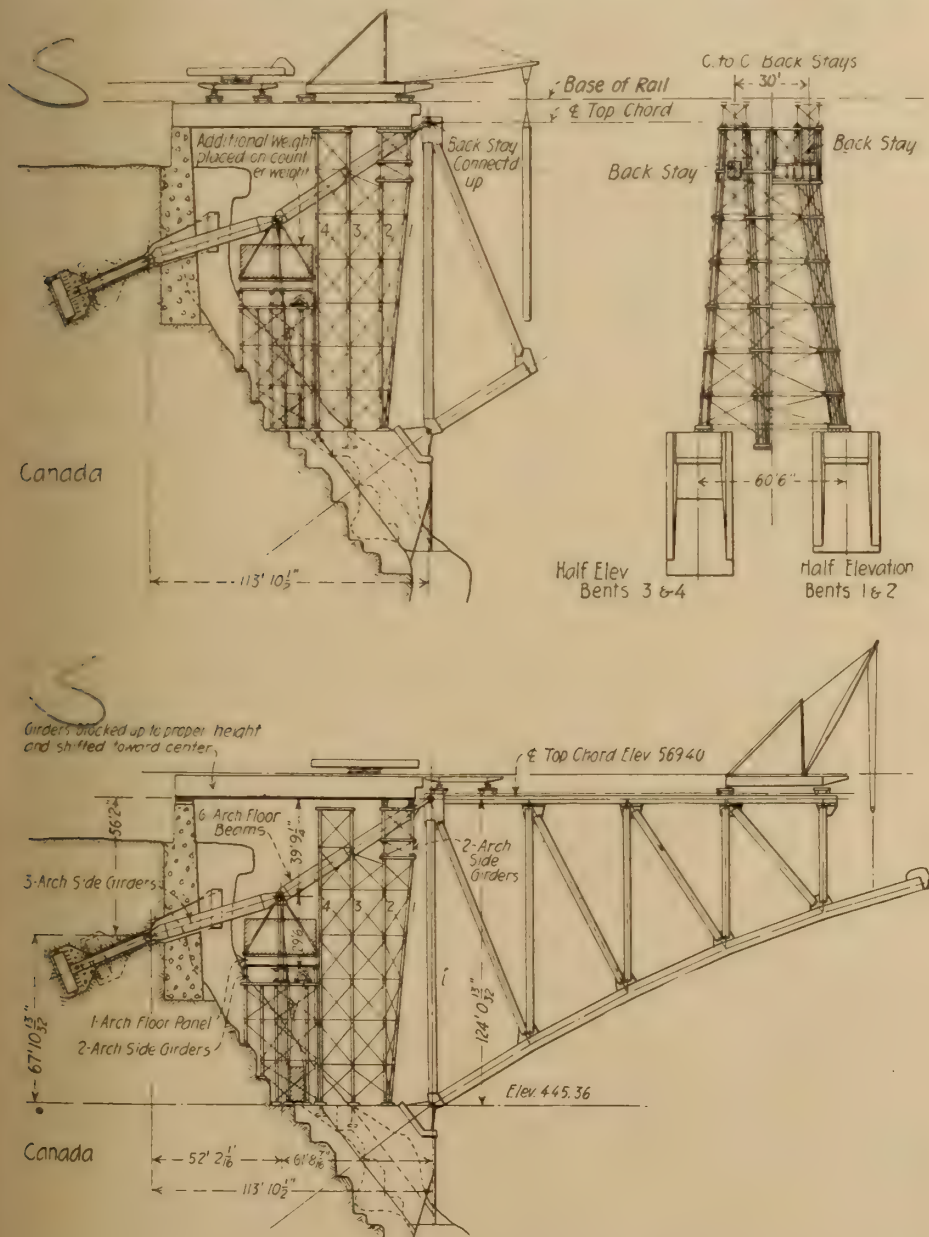
The new bridge will carry two tracks and is designed for Cooper's class E 70 loading. The arch trusses are designed to carry all the dead load, up to and including the steel work of the floor, as a 3-hinged arch. After the floor has been erected, the top chords of the center panels will be rivetted together, so that the rest of the dead load and the live load and temperature stresses will be carried by the arch in a 2-hinged condition. The arch span will be divided into 16 panels, each 40 ft. long. The rise of the arch will be 105 ft. and the depth at the crown 20 ft. The arch trusses will be 30 ft. apart, center to center of top chords,

diaphragms milled to bear against the top chord cover plates, so as to properly distribute the load from the longitudinal girders. Transverse floor beams, supporting an I-beam and solid plate, ballasted deck, will be rivetted to the longitudinal girders. Each panel length of floor will form a separate unit, and provisions for expansion and contraction are made for each panel. This floor construction, which is rather unusual, will be used, partly to prevent the floor system from partaking in the arch stresses, and causing secondary stresses in the truss members, and partly to facilitate possible future changes in track elevation.

The skew-back casting supporting the arch truss will measure 14 ft. by 14 ft. 8½ in. on the bottom, and will weigh 53 tons. The upper and lower hinge castings, which will join on a pin 19 in. in diameter and 6 ft. long, will weigh 39 tons. The bottom chord of the arch span will be a closed box girder section, 5 ft. 6¼ in. deep, back to back of angles, with the two girders spaced 3 ft. ¼ in. apart between inside of webs. Each of these girders, which will be of uniform section throughout the bottom chord, will consist of 6 angles, 8 x 8 in. by ¾ in. thick, and webs 66 in. deep by 2½ in. thick. The chord will vary in section from 557.3 sq. in. for the center panels to 714.8 for the end panels, and the variation will be made up entirely by the variation of thickness of the 60 in. wide top and bottom cover plates, which will be ¾ in. thick in the center panel and 2-1/16 in. thick in the end panel. The two side slabs of the chord will be connected together with batten plates rivetted to the center angles, and the chord will be further braced by transverse diaphragms, rivetted to all four sides of the box section. There will be manholes at each panel point, to give access to the inside of the chord.

The top chord will be of the ordinary chord type, with built-up channel side sections, with a cover plate on the top and lacing on the bottom flange. The vertical posts and diagonals will be made up of 2 channel shaped slabs, composed of plates and angles. The vertical posts will have longitudinal diaphragms connected to the webs, and will have lacing on both flanges. The diagonals will have no longitudinal diaphragms, but will be laced on both outside flanges. The top and bottom lateral bracing, the longitudinal and the sway bracings will be rigid sections throughout, and the lacing bars in both main members and the bracing will be either angle or channel sections.

Each half of the arch span will of necessity be erected as a cantilever, and will be anchored, at each corner, to the rock bluffs of the gorge, by anchors made of heavy steel plate girders, which will be placed in a chamber, 13 x 20 ft. in dimensions, tunneled out of the rock at a depth of about 50 ft. from the surface. These anchors and the parts of backstays, which will be inside the face of the bluff, will be permanently concreted in place. The parts of the backstays which come outside the face of the bluff, will be eye-bar links pinned to heavy sliding plates, so designed that hydraulic jacks placed between the plates will lengthen or shorten the backstays, and impart necessary movement to each cantilevered half of the arches, when they are to be connected at the center of the span. The maximum horizontal pull in each of the four backstays will be 3,700,000 lb. and each of the four jacks operating them will have a capacity of 3,000 tons.



tion of grey and red sandstone, intermingled with shale. This strata weathers badly when exposed to the air, but is solid where protected by overlying material, and as the place where the toe of the piers touches this layer will always be protected by a fill of about 34 ft. in depth, there will be no chance for it to disintegrate. If the new bridge was built in the same location as the present bridge the arch span would have to be lengthened to 700 ft. to obtain the same favorable foundation condition as obtained in the new location with the 640 ft. span.

and will be on a batter of 1 to 8, so that they will be 60½ ft. apart, center to center, at the springing line. The truss joints will be rivetted throughout, with the exception of the connections for the two first vertical posts each side of the center. It will be necessary to connect these posts on a pin, so as to relieve them of the very high secondary stresses to which they would be subject if the connections were rivetted.

The floor system on the arch span will consist of longitudinal girders resting on castings set on top of the top chord over each vertical post. These posts will have

Birthdays of Transportation Men in February.

The approach spans to the arch at either end will consist of 100 ft. long deck plate girders, with solid I-beam plate, and ballasted floor. One end of these girders will be seated on the heavy box girders, rivetted between the end vertical posts of the arch, and the other end will be seated on rollers supported on the concrete piers at the edge of the bluffs. These rollers will take care of the movement in the arch span, as well as the approach span, the maximum total movement in either direction being $3\frac{1}{2}$ in., or a total movement of 7 in. Included in the work there will also be two bridges over street crossings at either side of the river.

The unit stresses used for proportioning of parts of the arch span are as follows:—

Dead load tension.....	20,000 lb. per sq. in.
Dead load compression.....	18,000—80 1-r
Live load tension.....	18,000 lb. per sq. in.
Live load compression.....	16,000—70 1-r

The floor on the arch span and the approach spans have been proportioned both for live load and dead load for:—

Tension	18,000 lb. per sq. in.
Compression	16,000—70 1-r

The material used, for all the structures will be open hearth, medium structural steel. Rivet holes in material more than $\frac{3}{4}$ in. thick will be drilled from the solid; in material $\frac{3}{4}$ in. thick and under, rivet holes may be punched and reamed, except that in bracing, lacing and stay plates, less than $\frac{5}{8}$ in. thick rivet holes may be punched full size.

The heaviest member in the bridge will be the end panel bottom chord, which will weigh $70\frac{1}{2}$ tons. The total weight of the arch trusses, including bracing and castings, will be 4,800 tons; the floor on the arch span will weigh 1,250 tons and the total weight of the steel, including approach spans, street spans and backstays, will be 7,500 tons. There will be about 11,000 cubic yards of concrete masonry in foundations, piers, and approach spans, and about 28,000 yards of excavation.

The design of the bridge has been developed under the direction of H. Ibsen, Special Bridge Engineer, who has been assigned to this project, assisted by C. L. Christensen, Assistant Bridge Engineer. The project is under the general direction of J. F. Deimling, Chief Engineer, Michigan Central Rd., Detroit, Mich. Col. Geo. H. Webb, late Chief Engineer of the M.C.R., had the general direction of the project from its start, until he went to France in July, 1917, as Lieut. Col. with the Sixteenth (Railway) Engineers, and also after his return, in April, 1919, until his death on Nov. 3, 1921. Olaf Hoff, consulting engineer, New York, is acting as advisory engineer.

The contract for the steel work, and its erection, has been let to the American Bridge Co. The price for the total steel work erected, including approach spans, and spans over two streets, averages \$109 a ton, without freight, which the M.C.R. pays, and with the freight included, the price will be approximately \$116 a ton. The total estimated cost of the whole project is about \$2,000,000.

Railway Association of Canada.—Consequent on the resignations of D. B. Hanna, as President, Canadian National Rys., and H. G. Kelley, as President, G.T.R., Sir Henry Thornton, President, Canadian National Rys., and G. W. Lee, Chairman, Timiskaming & Northern Ontario Ry. Commission, have been elected to fill the vacancies caused on the Railway Association of Canada's executive committee.

Many happy returns of the day to:—

W. J. Atkinson, Superintendent, St. Maurice Division, Quebec District, Canadian National Rys., Quebec, Que., born at Levis, Que., Feb. 14, 1880.

T. Britt, General Fuel Agent, C.P.R., Montreal, born there, Feb. 3, 1871.

G. E. Bunting, General Traffic Agent, Canadian National Rys., and Australasian Manager, Canadian Government Merchant Marine, Auckland, New Zealand, born at Toronto, Feb. 8, 1873.

J. S. Byrom, General Superintendent, Sleeping, Dining and Parlor Cars and News Service, Eastern Lines, C.P.R., Montreal, born at Jersey City, N.J., Feb. 10, 1872.

B. E. Chace, City Ticket Agent, C.P.R., Nelson, B.C., born at New York, N.Y., Feb. 29, 1884.

H. R. Charlton, General Advertising Agent, G.T.R., Montreal, born at St. Johns, Que., Feb. 9, 1866.

R. Chisholm, Inspector of Agencies, Canadian National Rys. and Grand Trunk Pacific Ry., Winnipeg, born at Georgeville, N.S., Feb. 25, 1871.

R. Colclough, Superintendent, Saguenay Division, Quebec District, Canadian National Rys., Quebec, Que., born at Bic, Que., Feb. 24, 1871.

G. M. Cordingley, Chief Dispatcher, C.P.R., Saskatoon, Sask., born at Montreal, Feb. 13, 1886.

R. Crawford, Northwestern Agent, Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

V. A. G. Dey, Division Engineer, Bruce Division, Ontario District, C.P.R., Toronto, born at Aberdeen, Scotland, Feb. 4, 1883.

H. H. Disher, Purchasing Agent, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born there, Feb. 5, 1883.

E. A. Evans, consulting engineer, ex-General Manager and Chief Engineer, Quebec Ry., Light & Power Co., Quebec, born at Kensington, Eng., Feb. 26, 1855.

Goodwin Ford, General Superintendent Western Lines, Dominion Express Co., Winnipeg, born at Bordentown, N.J., Feb. 23, 1859.

U. E. Gillen, General Manager, Toronto Terminal Ry. Co., Toronto, born at Brooklyn, Mo., Feb. 27, 1867.

T. Ginnelly, Assistant Freight Claims Agent, Canadian National Rys., Western Lines, Grand Trunk Pacific Ry. and Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C., born in Ireland, Feb. 11, 1880.

L. L. Grabill, General Baggage Agent, G.T.R., Toronto, born at Walkerton, Ont., Feb. 6, 1878.

S. M. Greene, City Ticket Agent, Canadian National Rys. and Grand Trunk Pacific Ry., Regina, Sask., born at Derby, Eng., Feb. 15, 1887.

A. J. Hills, Assistant to President, Canadian National Rys., Toronto, born there, Feb. 15, 1879.

T. C. Hudson, General Master Mechanic, Eastern Lines, Canadian National Rys., Montreal, born at Brockville, Ont., Feb. 20, 1873.

H. Hulatt, ex-Manager of Telegraphs, G.T.R., born at London, Eng., Feb. 15, 1883.

A. H. Jones, Assistant Engineer, Canadian National Rys., Toronto, born at Liverpool, Eng., Feb. 16, 1884.

A. E. McAmmond, Chief Dispatcher, Kenora Division, Manitoba District, C.P.R., Kenora, Ont., born at Britannia Bay, Ont., Feb. 19, 1879.

John McCraw, Travelling Representative, G.T.R., New London, Conn., born at Craigville, Ont., Feb. 6, 1868.

J. K. McNeillie, General Manager's office, Delaware & Hudson Rd., Albany, N.Y., born at Toronto, Feb. 23, 1874.

J. D. McNutt, Assistant Superintendent, Halifax Division, Maritime District, Eastern Lines, Canadian National Rys., Halifax, N.S., born at Stewiacke, N.S., Feb. 8, 1873.

D. C. Macdonald, Assistant General Claims Agent, C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

C. S. Maharg, Superintendent, Vancouver Division, British Columbia District, C.P.R., Vancouver, born in Dufferin County, Ont., Feb. 4, 1867.

V. J. Melsted, ex-Engineer of Water Service, C.P.R., now of Milton Hersey Co., Winnipeg, born at Gardar, N.D., Feb. 20, 1887.

G. A. Montgomery, Vice President and General Manager, Algoma Central & Hudson Bay Ry., and President, Algoma Eastern Ry., Sault Ste. Marie, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, General Agent, Freight Department, Canadian National-Grand Trunk Rys., Grand Rapids, Mich., born at Appin, Ont., Feb. 14, 1862.

F. Norman, Superintendent, Canadian National Express Co., Winnipeg, born at Picton, Ont., Feb. 24, 1874.

C. T. Ridalls, Car Foreman, C.P.R., London, Ont., born at St. Heliers, Jersey, Channel Islands, Feb. 8, 1864.

A. E. Rosevear, General Freight Agent, Canadian National Rys., Western Lines, and Grand Trunk Pacific Ry., Winnipeg, born at Montreal, Feb. 20, 1863.

J. G. Scott, ex-General Manager, Quebec & Lake St. John Ry., and Great Northern Ry. of Canada, Quebec, born there, Feb. 13, 1847.

J. J. Scully, General Manager, Eastern Lines, C.P.R., Montreal, born there, Feb. 3, 1872.

E. M. Snell, General Agent, Erie Rd., Toronto, born at Wingham, Ont., Feb. 16, 1872.

J. M. Sparling, Assistant to Vice President, Traffic, G.T.R., Montreal, born at Toronto, Feb. 16, 1882.

G. Spencer, Chief Operating Officer, Board of Railway Commissioners, Ottawa, born in London, Eng., Feb. 21, 1865.

R. E. Swain, Liverpool Passenger Agent, C.P.R., Liverpool, Eng., born at Birkenhead, Eng., Feb. 23, 1882.

A. P. Villain, City Ticket Agent, C.P.R., San Francisco, Cal., born there, Feb. 6, 1891.

F. L. Wanklyn, General Executive Assistant, C.P.R., Montreal, born at Buenos Aires, Feb. 25, 1860.

J. R. Watson, Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Eastern Lines, C.P.R., Montreal, born at Morpeth, Eng., Feb. 8, 1873.

A. Williams, Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, born at Mono Road, Ont., Feb. 22, 1872.

A Mountain Pass Defined.—The Board of Regents of New York State asked a number of questions of school children recently, among them being "What is a mountain pass?" The answer given by one of the children was: "A mountain pass is a pass given by the railways to their employees, so that they can spend their holidays in the mountains."

Railway Operating Revenues, Expenses and other Statistics for October.

The following comparative table for October, 1922 and 1921, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There is a slight increase in the number of roads included under this heading, so that the data for 1922 and 1921 is not directly comparable with previous reports.

As the Canadian Government, Canadian Northern and Grand Trunk Pacific Railways are under one management, and operated as one system, the monthly operating reports for 1922 contain a consolidated report for these railways, under the heading "Canadian National Rys.," which includes the old Canadian Government Rys., viz., Intercolonial, Prince Edward Island, National Transcontinental and various local lines in

the Maritime Provinces and Quebec, which have been acquired by the Dominion Government and added to the Canadian National Rys.; the lines operated as the Canadian Northern Ry. System, prior to its acquisition by the Dominion Government; and the Grand Trunk Pacific Ry., but does not include electric lines.

The column headed "Canadian Pacific" includes also the Montreal and Atlantic and Esquimalt and Nanaimo Rys.

The column headed "Grand Trunk" includes all the G.T.R. Co. of Canada lines, including 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Provincial Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair Rivers.

Items 1 to 6 in the table include rail

lines revenues only. Previous to this year they included water lines. Operating income items have been added. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. In former years the total of mixed train miles was added to both freight and passenger train miles when computing averages. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, excess baggage, parlor cars, etc., whereas previous reports gave an average per train mile of passenger receipts only. The number of employes is also a new feature of this year's reports.

	All railways.		Canadian National		Canadian Pacific		Grand Trunk	
	1922	1921	1922	1921	1922	1921	1922	1921
Operating Revenues								
Freight	\$38,314,260	\$35,770,388	\$11,441,492	\$10,123,174	\$17,838,482	\$16,697,047	\$5,690,566	\$5,423,845
Passenger	6,746,803	6,873,546	1,611,588	1,629,585	3,061,510	3,257,262	1,114,218	1,083,636
Mail	639,953	640,409	185,253	178,655	303,104	314,319	106,500	100,183
Express	1,278,099	1,398,024	357,553	369,197	519,552	651,011	246,000	264,978
Other freight train.....	368	2,113			186	645		
Other passenger train.....	599,481	553,639	170,669	181,468	309,800	305,347	92,079	39,776
Water line	393,710	391,299			307,345	309,357		
All other	1,486,132	1,470,830	307,465	307,392	702,370	778,085	307,920	219,810
Total railway operating revenues.....	49,458,809	47,100,261	14,074,024	12,789,473	23,042,351	22,313,077	7,557,284	7,132,231
Operating expenses								
Maintenance of way and structures.....	\$7,867,814	\$8,716,979	\$3,076,655	\$3,180,715	\$2,796,234	\$3,346,595	\$1,156,718	\$1,273,034
Maintenance of equipment.....	3,529,524	3,561,365	2,423,822	2,513,242	3,292,669	3,689,709	2,085,383	1,503,767
Traffic	1,144,159	982,392	255,221	215,466	642,603	564,794	187,914	147,803
Transportation	18,862,615	17,661,888	5,777,284	5,669,149	8,106,377	7,326,534	3,103,719	3,021,854
Miscellaneous operations	396,592	462,006	140,897	149,033	193,795	222,531	20,761	29,228
General	1,029,538	977,667	352,809	258,920	298,501	357,630	216,834	235,737
Transportation for investment.....	Cr. 112,719	Cr. 231,303	109,411	230,376			655	Cr. 508
Total railway operating expenses.....	\$7,717,524	\$7,130,998	11,917,280	11,756,151	15,330,182	15,507,795	6,770,676	6,210,918
Operating income								
Net operating revenue.....	\$11,741,284	\$9,969,263	2,156,743	1,033,321	\$7,712,169	\$6,805,282	\$786,607	\$921,312
Railway tax accruals.....	642,319	702,842	147,882	153,971	355,196	312,531	80,500	171,669
Uncollectible revenues	1,010	727					981	575
Hire of equipment.....	Cr. 554,974	Cr. 79,837	Cr. 157,777	Cr. 87,042	Cr. 396,248	Cr. 217,473	Cr. 247,721	Cr. 51,920
Joint facilities rents.....	Dr. 48,562	Dr. 67,124	Dr. 14,161	Dr. 9,065	Cr. 54,781	Cr. 39,241	Cr. 39,112	Cr. 36,399
Operating income	11,604,364	9,278,405	2,152,478	957,327	7,808,002	6,749,466	991,959	837,387
Operating statistics								
Average miles of road operated.....	38,853	38,637	17,259.70	17,143.67	13,877.2	13,785.8	3,612	3,612
Tons carried (revenue freight).....	12,322	9,644	2,974	1,935	4,502	3,463	2,529	2,150
Tons carried one mile (revenue freight).....	4,332,260	3,429,734	1,500,701	1,164,017	2,126,879	1,591,949	462,865	433,895
Tons carried (all freight).....	14,228	11,245	3,566	2,466	5,373	4,172	2,896	2,420
Tons carried one mile (all freight).....	4,709,959	3,751,117	1,662,619	1,302,219	2,308,972	1,751,510	490,559	457,492
Revenue passengers carried.....	3,283	3,352	890	878	1,111	1,142	816	864
Revenue passengers carried one mile.....	247,480	238,273	61,091	59,748	115,465	114,220	41,282	38,104
*Freight train miles.....	7,395	6,316	2,573	2,351	3,341	2,626	984	872
*Passenger train miles.....	3,716	3,680	1,085	1,052	1,554	1,578	651	644
Total train miles (revenue and non-revenue).....	11,368	10,150	3,822	3,479	4,966	4,276	1,636	1,518
Freight car miles—loaded.....	166,689	138,215	56,345	46,769	75,179	60,732	22,286	18,110
Freight car miles—empty.....	85,856	68,551	32,123	24,360	39,297	31,143	9,642	8,366
Passenger train car miles.....	26,722	26,336	8,051	7,544	11,587	11,803	3,864	3,784
Total amount of pay roll.....	\$21,150,845	\$21,236,987	\$7,583,966	\$7,540,538	\$8,032,274	\$8,410,189	\$3,904,752	\$3,714,059
Number of employes.....	168,568	170,195	64,769	62,423	60,696	65,470	30,874	30,188
Averages per mile of road operated								
Operating revenue	\$1,272.97	\$1,219.05	\$815.43	\$746.02	\$1,660.45	\$1,618.56	\$2,092.27	\$1,974.59
Operating expenses	\$ 970.73	\$ 961.02	\$690.46	\$685.74	\$1,104.70	\$1,124.91	\$1,874.50	\$1,719.52
Tons moved one mile (revenue freight).....	111,504	88,613	86,948	67,898	153,264	115,477	128,147	120,126
Tons moved one mile (all freight).....	121,482	97,086	96,330	75,959	166,386	127,052	135,814	126,659
*Averages per freight train mile								
Freight revenue	\$5.18	\$5.66	\$4.45	\$4.31	\$5.34	\$6.36	\$5.78	\$6.21
Tons of freight (revenue freight).....	585.7	542.1	583.2	495.1	636.5	606.2	470.0	497.1
Tons of freight (all freight).....	636.8	593.9	646.1	553.9	691.0	667.0	498.2	524.1
Loaded freight cars.....	22.5	21.9	21.9	19.9	22.5	23.1	22.6	20.7
Empty freight cars.....	11.6	10.9	12.5	10.4	11.8	11.9	9.8	9.6
*Averages per passenger train mile								
Passenger train revenue.....	\$2.49	\$2.57	\$2.14	\$2.24	\$2.70	\$2.87	\$2.39	\$2.31
Passengers carried	66.6	64.7	56.3	56.8	74.3	72.4	63.3	59.1
Passenger cars	7.2	7.2	7.4	7.2	7.5	7.5	5.9	5.9
Average operating expenses per train mile.....	\$3.32	\$3.65	\$3.12	\$3.38	\$3.09	\$3.63	\$4.14	\$4.10
Average length of haul (revenue freight) miles.....	351.6	354.9	504.5	601.4	472.4	459.6	183.0	201.8
Average passenger journey miles.....	75.4	71.1	68.6	68.0	103.9	100.0	50.6	44.1
Average tons per loaded freight car.....	28.3	27.1	29.5	27.8	30.7	28.8	22.0	25.3
Average freight receipt per revenue ton mile.....	.884c	1.044c	.762c	.870c	.839c	1.048c	1.229c	1.250c
Average passenger receipt per passenger per mile	2.726c	2.884c	2.638c	2.727c	2.651c	2.852c	2.699c	2.844c
Ratio of pay roll to operating revenues.....	42.8%	45.1%	53.9%	59.0%	34.9%	37.7%	51.7%	52.1%
Ratio of pay roll to operating expenses.....	56.1%	57.2%	63.6%	64.1%	52.4%	54.2%	57.7%	59.8%
Ratio of operating expenses to revenues.....	76.26%	78.83%	84.68%	91.92%	66.58%	69.50%	89.59%	87.08%

*Contains a proportion of mixed train miles.

The Railways' Operating Results for October, 1922.

The results secured by Canadian railways in Oct., 1922, as shown in the table on the preceding page, are of outstanding importance, as showing that the railways as a whole carried the largest freight traffic in any month in Canadian railways' history, and the excellence of the financial results the railways are capable of obtaining with a traffic approaching the limit imposed by the capacity of the facilities for handling it, despite the magnitude of the rate reductions which have been effected.

The record freight movement handled had the effect of increasing the freight traffic revenue enjoyed by the railways as a whole by 5% over Oct., 1921, but the Oct., 1922, revenue was 7% smaller than in Oct., 1920, which was an outstanding month as regards railway freight traffic, and this traffic having been carried at the high rates which had been ordered a short time previously, exceptional freight earnings resulted. Passenger traffic revenue in Oct., 1922, slightly decreased from Oct., 1921, but the increased freight traffic revenue was more than sufficient to compensate for the loss in passenger traffic revenue and other items, so that the total revenues for the month were in excess of Oct., 1921.

An examination of the expense accounts for the railways as a whole, particularly transportation expense, shows that the wage reductions and other expense reductions were more than adequately reflected in the results obtained, when consideration is given to the much larger volume of traffic moved. The increase in operating expenses in its relation to the increase in operating revenues is reflected, as seen on reference to the tabulated results, in an increased operating income, and a lessened operating ratio, for the month. The operating ratio in Oct., 1922, of 76.26, is by far the best that Canadian railways, collectively, have been able to exhibit for some time, and marks further progress in that improvement in the industry which, as noted in a preceding number of Canadian Railway and Marine World, set in in Sept., 1922.

Analysis of the freight traffic handled in Oct., 1922, shows that it was 26.5% greater than in Oct., 1921, and 26.6% greater than in Oct., 1920. The grain crop harvested in 1922, the largest in Canadian history, with the long haul to eastern points, was of course the chief factor in the record ton-mileage handled, but a heavy movement of coal, lumber and other building materials and general merchandise, helped to increase the total to the remarkable figure of 4,332,260,487 ton miles of revenue freight for the month.

The ability of the railways to show such good net results on the reduced rates in effect arose largely from their ability to handle such an increased freight traffic with a much smaller increase, proportionately, in freight train mileage. As stated, the number of tons of revenue freight handled during the month was 26.5% greater than in Oct., 1921, but the number of freight train miles operated during Oct., 1922, was but 17.1% greater than in Oct., 1921. This fact is significant, as showing the increase in operating efficiency. It is, in a measure, a natural consequence of increased traffic that train loading should increase, so that an increase in ton mileage would not be expected to be accom-

panied by a corresponding percentage increase in freight train mileage, but a 26.5% increase in ton mileage, accompanied by but a 17.1% increase in train mileage, is more than an ordinary achievement in this respect, and suggests that the heavy power and other improved facilities now being used by the railways were utilized to the best possible advantage during the heavy traffic month under review.

The increased train loading, which the relative increases in freight traffic and train mileage indicates, had its origin not only in an increased number of cars per freight train, but also arose from the better average loading of cars. The average number of cars per freight train in Oct., 1922, was 34.1, of which 22.5 were loads and 11.6 empties, compared with an average number of cars in Oct., 1921, of 32.8, of which 21.9 were loads and 10.9 empties. The increase in the average number of tons per loaded freight car of from 27.1 to 28.3 is a substantial improvement.

Regarding briefly the results secured by the three chief railways individually, it may be seen that the Canadian National carried the largest freight traffic in a single month in its history, the revenue ton-mileage being 28.9% greater than in Oct., 1921, and 50% greater than in Oct., 1920. The average load per car having increased from 27.8 tons, and 28.2 tons, in Oct., 1921, and Sept., 1922, respectively, to 29.5 tons in Oct., 1922; and average train loading for the month being 92.2 tons heavier than in Oct., 1921, a large increase in operating efficiency was evident. The Canadian Pacific also made a record for ton miles carried in a single month, and with an increased operating efficiency, represented by the increase stated in train and car loading, secured net results reflected in the extremely low operating ratio of 66.53, and the biggest monthly net earnings secured in its history. A comprehensive review of the financial results secured by the Canadian National and Canadian Pacific Rys. in October, and the first 10 months of 1922, was given in Canadian Railway and Marine World for January, pg. 23. The Grand Trunk, not participating in the grain traffic, which furnished such opportunity to the Canadian National and Canadian Pacific to increase their car loading and train loading in substantial measure, experienced decreases in its average train and car loading, and because the increased traffic secured by it was of such a nature that the big bulk and low expense movements characteristic of the western grain traffic were not present, operating expenses could not be reduced in as great measure as on the roads enjoying that traffic. Revenues were 6% better than in Oct., 1921, but expenses were 9% greater, resulting in the operating ratio being increased from 87.08 to 89.59.

As stated above, the results secured by Canadian railways in Oct., 1922, advanced considerably the improvement which set in during the previous month, and information concerning the results secured by the three large systems in November, with preliminary information for December, as published elsewhere in this issue, show that this improvement has continued to manifest itself. Much of the improvement has been due, of course, to a continuation of the heavy traffic arising from movement of farm products, and although a large part of

this movement has been at comparatively low rates, it has been profitable, because it has been so large. The manner in which the rate reductions cut into the railways' unit revenues is evident, on noting that the average freight receipt per revenue ton mile for the railways as a whole was but 0.884c. in Oct., 1922, compared with 1.044c. in Oct., 1921. While the major part of this decrease may be ascribed to the restoration of the Crowsnest agreement rates on grain, it must be remembered that the rate reductions prescribed for other commodities were of importance. Just what result on railway earnings the present rates will have when the grain movement has been completed, has been the cause of a lot of conjecture. The results secured in the spring and summer of 1922, when traffic conditions were not extraordinarily good, were disappointing, but if the increase in general traffic which accompanied the heavy grain movement in the autumn of 1922, be sustained, there is cause to hope that railway operating results will continue to exhibit some of that improvement which was ushered in in Sept., 1922.

Freight Car Locations on Canadian Railways.

The Railway Association of Canada has issued a report on the location of freight cars on Canadian railways as of Jan. 1, 1923, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Grand Trunk; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo; Wabash, in Canada; Central Vermont, in Canada; Michigan Central, in Canada, and Pere Marquette, in Canada, as follows: Cars owned by reporting railways, 220,592; home cars on Canadian foreign lines, 18,899; home cars on U.S. lines, 57,304; home cars on home roads, 144,389; Canadian-owned foreign cars on home lines, 17,284; U.S.-owned foreign cars on home lines, 32,938; total cars on lines, 194,611; per cent. on lines to total owned, 88.2; deficiency on lines to total owned, 25,981; home cars in bad order, 10,404; foreign cars in bad order, 561; total cars in bad order, 10,965; per cent. in bad order, 5.6; privately-owned U.S. cars on lines, 1,817; privately-owned Canadian cars on lines, 966.

Canadian Exhibition in France.—The Dominion Government has appointed an executive committee, to organize and manage the proposed Canadian exhibition in France. Among the members are Senator C. B. Beaubien, one of the Canadian Car & Foundry Co.'s directors; Hon. W. C. Kennedy, Minister of Railways and Canals (since deceased); E. W. Beatty, President, C.P.R.; Sir Henry Thornton, President, Canadian National Rys., and J. H. Walsh, General Manager, Canadian Manufacturers' Association.

Manitoba's Coal Supply.—C. Murphy, General Manager, Western Lines, C.P.R., is reported as stating that Manitoba is now getting 75% of its coal supply from Alberta. A few years ago the Manitoba market was supplied almost entirely with U.S. anthracite coal.

Longlac-Nakina Cut-Off Contract, Canadian National Railways.

The Canadian National Rys. management has given a contract for clearing, grading, culverts, timber bridging, and substructures for bridges on the 29.4 miles connection between the Canadian Northern Ontario Ry., near Longlac, 480.7 miles northwest of North Bay, and the National Transcontinental Ry., near Nakina, 272.25 miles west of Cochrane, to Foley Bros. & Hervey. The members of the firm are Foley Bros., of St. Paul, Minn., and Brig.-Gen. Chilion L. Hervey, D.S.O., C.E., Montreal. There was spirited competition for the work, among the other tenderers being V. T. Bartram and A. H. Britton; Chambers, McQuigge & McCaffrey; Hugh Doheny & Co.; Dominion Construction Co.; John-

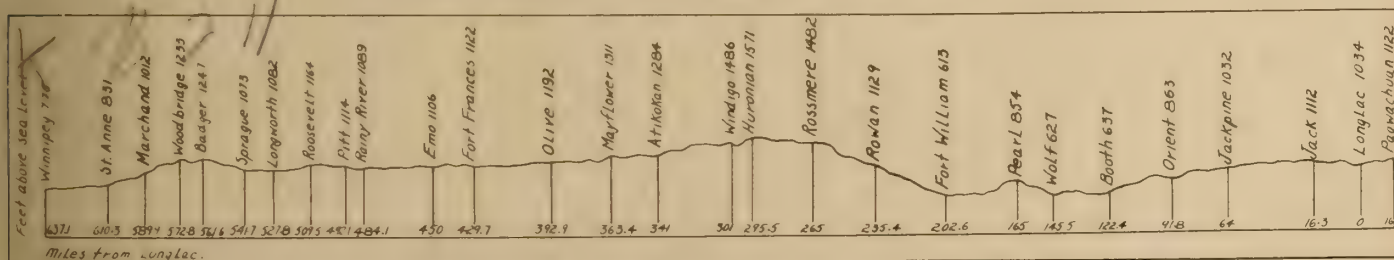
dian Northern Ontario Ry., to a point near Nakina station, 15.9 miles west of the divisional point of Grant, on the National Transcontinental Ry., authority be given to proceed immediately with the proposed work. It is observed that the proposed cutoff will shorten the route between points in eastern Canada and Winnipeg by 102.6 miles, and between Fort William and Quebec by 99.1 miles; the latter being an important factor in connection with the haulage of grain for export from the head of Lake Superior to the Atlantic seaboard; that, after the construction of the proposed cutoff, it is estimated that there will be an annual saving of \$389,200 in the movement of traffic; further, that a large increase in

of the line, with consequent loss of profit; that, providing immediate authority is given to proceed with the proposed work, a great deal of preliminary work, such as making tote roads, arranging for supplies, establishing camps, clearing right of way, and excavating rock, can be performed advantageously during the winter months, which will permit of actual construction work commencing as soon as the snow is off the ground in the spring. The Minister, therefore, on the advice of the Deputy Minister of Railways and Canals, recommends that authority be given accordingly. The committee advise that the requisite authority be granted."

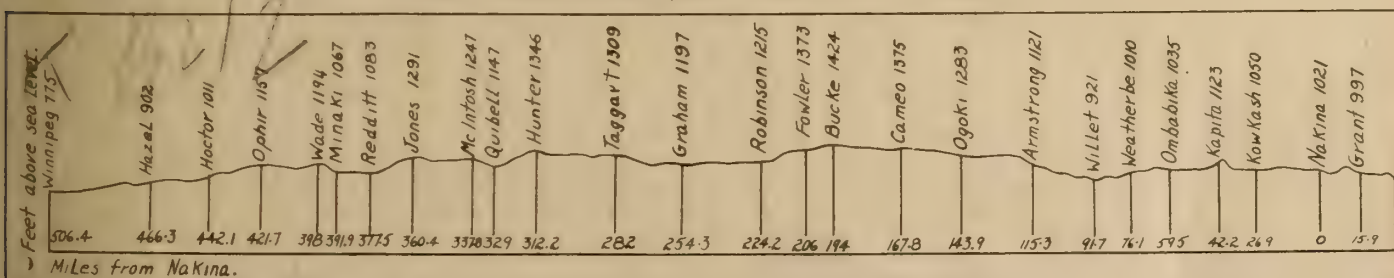
The work will be under the Canadian



Location, Longlac-Nakina Cutoff, Canadian National Railways.



Profile, Canadian Northern Railway, Longlac, Ont., to Winnipeg.



Profile, National Transcontinental Railway, Grant, Ont., to Winnipeg.

son Bros. & Tomlinson; R.A.R. & Ian R. Sinclair; Grant Smith & Co. and McDonnell, Ltd.

The authority for the construction was given by the following, which was approved by the Governor-General, on Dec. 22, 1922, and passed as an order in council:—"The committee of the Privy Council have had before them a report, dated Dec. 21, 1922, from the acting Minister of Railways and Canals, representing that the Chairman of the Boards of Directors and President of the Canadian National Rys. has submitted a report, recommending that, in connection with the Long Lake cutoff, which is a connection 29.5 miles in length, proposed to be constructed from a point near Long Lake station, at the most northerly point in Ontario, on the Cana-

passenger traffic will accrue as the result of shorter schedules, which will make possible an estimated annual increase in earnings of \$600,000, without any material increase in expenses. It is, further, observed that the total estimated cost of the work will aggregate \$1,944,006, including the removal of the terminal facilities from Grant to the new junction point, and that sufficient funds are available to provide for any expenditure up to March 31, 1923, but that, in view of the fact that the proposed work will obligate the Government to the above mentioned expenditure, \$1,944,006, it is considered that authority should be obtained before proceeding with such work. It is pointed out that if the work is not commenced immediately, a delay of one full season will result in the completion

National Rys. Construction Department, of which M. H. MacLeod, C.E., is Vice President, the engineering being under the direction of H. T. Hazen, Chief Engineer, Canadian Northern Ry. Lines East of Port Arthur, who visited its locality in the middle of January, having been preceded by H. T. Morrison, Locating Engineer, C.N.R., who was engaged on the preliminary surveys and made the final location one, and by R. A. Baldwin, District Engineer of Construction, Ontario District, C.N.R., both of whom went over the route to lay out the work for the contractors. The construction will come under Mr. Baldwin, and the Division Engineer of Construction will be Capt. K. G. Polyblank, heretofore Division Engineer, Nipigon Division, Ontario District, C.N.R., Hornepayne, who will

have four resident engineers under him. O. W. Swenson, Secretary-Treasurer of Foley Bros., also visited the locality early in January to make preliminary arrangements for the work. Both the C.N.R. and the contractors' headquarters for the work will be at Longlac.

Canadian Railway and Marine World for Dec., 1922, gave, on pg. 623, the reasons for building the connection, a description of the surveys made, a table of the savings in distances which will be effected, and particulars of the country through which it would run. The accompanying plan shows the connection's location. The curvature on the line will be very light, the maximum being 4°. The maximum grade in each direction will be 0.4%, compensated for curvature. The elevation at the point where the connection will leave the Canadian Northern Ry. is 1,032 ft. above sea level, and the point where it will join the National Transcontinental Ry. is 1,045 ft. The country to be traversed being fairly flat, the summit for the whole connection will be but 1,085 ft. above sea level. At the south end of the route there is a considerable quantity of rock, and on the balance of the line there are long stretches of spruce swamp, with clay subsoil. The north middle portion of the line is partly sand and gravel, and at the north end the country is again swampy. The principal bridges will be at the crossings of the Kenogamisis River at mile 6; the crossing of Devilfish Lake, mile 13.7, and the crossing of McDonald Creek, mile 28.8, at each of which places a plate girder span will be erected on concrete abutments. There will be 6 small pile trestles.

The article in our December issue gave details of the distances to be saved through the building of this connection, and the profiles of the Canadian Northern line between Longlac and Winnipeg, and the National Transcontinental line between Nakina and Winnipeg, given herewith, show the advantages to be derived in the matter of grades. Trains using the cutoff will not have to dip down to the Lake Superior level and climb up again; westbound trains will miss the long climb west out of Fort William, elevation 613 ft., to Huronian, elevation 1,571 ft., a difference in elevation of 958 ft., while the advantage in the way of grades for eastbound trains using the National Transcontinental Ry. and the cutoff, from Winnipeg to Longlac, compared with the Canadian Northern route from Winnipeg to the same point, is evident on comparing the two profiles.

The terminal facilities at Grant, the present divisional point, 254.2 miles west of Cochrane, and 15.9 miles east of Nakina, will be removed to Nakina next summer.

Canadian Passenger Association Committees, etc.—At the annual meeting in Montreal, Jan. 9, the following were elected to serve during 1923:—Advisory committee, G. T. Bell, H. H. Melanson and C. B. Foster; chairman, S. Lebourveau. Executive committee, W. B. Howard, chairman, R. F. MacLeod, G. D. Wadsworth and C. W. Johnston. Rules committee, Jas. Morrison, chairman, R. F. Hill, C. W. Johnston, and W. B. Howard. Baggage car traffic committee, J. O. Apps, chairman, L. L. Grabill, W. M. Skinner and R. L. Fairbairn. Publicity committee, H. R. Charlton, chairman, J. M. Gibbon and W. L. Crichton. Secretary, G. H. Webster.

A Canadian National Railways' Director Denies Being a Bootlegger.

Canadian Railway and Marine World for Dec., 1922, reproduced an article from the Renfrew, Ont., Mercury, a Liberal newspaper, referring to a charge made by Sir Henry Drayton to the effect that F. G. Dawson, of Prince Rupert, B.C., one of the Canadian National Rys. directors, was a bootlegger. Shortly afterwards, Mr. Dawson denied the charge, in an interview at Vancouver, the press report in regard to which was published in our January issue, in order to give both sides of the question. Just after our January issue had gone to press we received a letter from Mr. Dawson, as follows:—

"I am just in receipt of a copy of the December issue of your publication, and notice an article headed 'A serious charge against a C.N.R. director.' The statement purported to be made by Sir Henry Drayton was not a definite one, but, as you state, he 'intimated' that I was a 'bootlegger' on a large scale. I challenge Sir Henry Drayton, or any other man, to make this as a definite charge. I am engaged in the wholesale grocery business, under the firm name of F. G. Dawson Limited, and have always done a legitimate wholesale business and have never handled liquor, either legally or illegally, but when the B.C. Moderation Act came into force and the B.C. Government opened liquor stores at all strategic points in B.C., our firm were appointed distributing agents for Northern B.C., by a Victoria, B.C., brewery, to distribute their beer, in the territory contiguous to Prince Rupert, to the Government liquor stores and to the export liquor houses, who, by the way, are permitted by the Federal Government, and licensed by the B.C. Government, to carry stocks for sale without the province, or as the name would imply, for export purposes. All beer leaving the brewery is under the supervision of a Government inspector, the Government also have inspectors, whose duty it is to keep a check on brewery agents, so there is no chance of bootlegging even if a person were so inclined.

"This unsavory bit of publicity was started in B.C. by Hon. H. H. Stevens, M.P. for Vancouver, who, in a public speech, after my appointment was announced, made the statement that it was 'reported' that upon inspection being made, my stock was found to be some 1,600 barrels short, and that the information was 'presumably' in the hands of the Attorney General, but because I was a friend of the Attorney General, no action had been taken. This accusation was made just at the time I was leaving for the east, so I immediately demanded a complete investigation by the Liquor Control Board, who sent their Chief Inspector here, during my absence, who had full and complete access to all our books and records, and who made a report that everything was found correct, and everything fully accounted for. The matter was also investigated by the Public Accounts Committee of the B.C. Legislature, who absolutely exonerated me and my firm. The report of the Chief Inspector and the report of the public accounts committee were tabled in the Legislature. In my opinion, and in the opinion of all who know the circumstances, my exoneration could not be more complete.

"If there was the least atom of truth

in the charges, I would unhesitatingly resign from the board, as I do not in any way care to embarrass the Government who appointed me, or my co-directors. Unfortunately politics are politics, and charges, during a political campaign, are very often made by innuendo, that are not actually charges, and which cannot possibly be substantiated, but again unfortunately, some politicians go on the assumption that if enough mud is thrown some of it is bound to stick. I hope you will do me the honor of publishing my side of the story and give same as much prominence as the article on pg. 608 of your December issue."

The Prince Rupert Board of Trade's Secretary has sent Canadian Railway and Marine World a copy of a resolution passed by the Board, of the executive council of which F. G. Dawson is a member, as follows: "Whereas statements have been made, by public men from Vancouver, which carry an innuendo that F. G. Dawson, Ltd., had trafficked in beer contrary to the provision of the Government Liquor Act; and whereas the said matter has been investigated and reported upon by the Chief Inspector for the British Columbia Liquor Control Board which report shows that neither F. G. Dawson nor F. G. Dawson, Ltd., have been guilty of any conduct contrary to the provision of said act; and whereas the matter was further fully investigated by the public accounts committee of the British Columbia Legislature, and it was clearly shown that F. G. Dawson and F. G. Dawson, Ltd., had carried on their business entirely according to law, and with no blame of any sort attached to F. G. Dawson, or said firm; and whereas the first referred to statements have been widely circulated and quoted in distant parts of Canada, evidently for political advantage, while very little publicity has been given to Mr. Dawson's vindication; and whereas we know the said innuendo has no foundation in fact, and we believe the statements were made purely to satisfy sectional and political feeling in Vancouver, and with intent to injure Mr. Dawson, particularly with respect to his recent appointment to the directorship of the Canadian National Railways board; now therefore, we the Prince Rupert Board of Trade go on record as stating that we have the utmost confidence in F. G. Dawson as a law abiding citizen, a successful business man, and a man morally, intellectually, and from his wide experience well qualified to represent Canada on the said board, and as regretting the unreasonable sectional and vindictive stand taken by representative men."

The G.T.R. Time Table Folder, January issue, has two pages of skeleton or index maps, to facilitate the finding of the various time tables. These have numbers on different portions of the lines, which refer to the time table numbers in the folder. The index of stations showing the time table number for every station is continued, but the index maps will frequently render it unnecessary to consult the general index.

Canadian Railway Club.—F. O. Farey, chief chemist, Robert W. Hunt Inspection Co., read a paper on kiln drying of lumber, before the club, in Montreal, on January 9. The club's annual dinner was held on Jan. 27.

Canadian Pacific, Canadian National and Grand Trunk Railways' Earnings.

The monthly reviews of railway earnings published in Canadian Railway and Marine World have shown that in the early part of 1922, and throughout the summer, the railways were obtaining results which could not be classed as other than disappointing. While the Canadian National lines were showing some decrease in the operating deficit, it was not an extraordinarily substantial one, although as great as conditions could justify one in expecting, and the C.P.R. net earnings lagged behind those of 1921 consistently. The G.T.R. was obtaining better results than the other two roads, the shopmen's strike in the U.S. contributing in a measure to its traffic, and aiding operating economy to get returns which were much more favorable than in either 1920 or 1921. Up to the beginning of Sept., 1922, it appeared that the rate reductions which had been imposed upon the railways, combined with a flow of traffic which, while an improvement over that of 1921, was not sufficient to at all tax the railways' capacity to handle it, were going to result in a very poor year for Canadian railways. With the coming of autumn, however, conditions changed materially for the better. The great improvement which took place in September was commented upon in Canadian Railway and Marine World for Dec., 1922, and the continuation of better conditions in October, with results as noted in Canadian Railway and Marine World for January, showed that the exceptional grain traffic, in combination with the larger general traffic resulting from improved economic conditions, bid fair to save the year for the railways.

That the improvement in September and October, which must, of course, be regarded as largely seasonal, has not dropped away as rapidly as it manifested itself, is evident from the railways' earnings statements for November, and preliminary weekly statements for December. The C.P.R. November gross earnings were \$21,421,078, an increase of \$2,633,398 over Nov., 1921, this being the largest November gross the company ever had, with one exception, viz., Nov., 1920, when a large traffic was carried at rates which, reflecting in some measure the extraordinary degree of inflation then existing, were at their peak. Operating expenses for the month were \$15,695,285, an increase of \$579,407 over Nov., 1921. The larger increase in gross earnings than in operating expenses resulted in net earnings for the month, \$5,725,793, being \$2,053,991 greater than the Nov., 1921, net. While these net earnings represented a substantial decrease from the exceptional net derived in the preceding month, it is notable that they constitute the best net results the company has secured in any November but one in its history, the single exception being in Nov., 1915, when net earnings were \$6,354,413.

In immediately preceding numbers of Canadian Railway and Marine World, the opinion was expressed that the large grain and general traffic which the C.P.R. was handling would result in the company being able to overcome the deficiency in its net earnings, compared to those of 1921, and that the opinion was well founded is shown by the fact that the November results brought the total net earnings for the first 11 months of the year to \$552,927 more than the net for the first 11 months of 1921. Gross

earnings for the first 11 months of 1922, \$169,309,396, were \$7,955,534 less than those for the first 11 months of 1921, but operating expenses, \$136,472,510, being \$8,508,461 smaller than in the first 11 months of 1921, the betterment in the net result mentioned above was obtained.

While the Canadian National Rys. did not secure as great an improvement in Nov., 1922, over Nov., 1921, as did the C.P.R., some betterment was evident. The Canadian Northern, Canadian Government, and Grand Trunk Pacific Rys., steam lines only, gross revenues, in Nov., 1922, \$12,737,758, were \$24,249 more than for Nov., 1921, and operating expenses, \$11,983,938, were \$9,056 less than in Nov., 1921, resulting in the Nov., 1922, net, \$753,820, being \$33,305 more than in Nov., 1921. For the lines as a whole, including the electric ones, the gross earnings, \$12,872,740, were \$33,632 greater than Nov., 1921; and operating expenses, \$12,096,073, were \$15,686 less than in Nov., 1921, resulting in the net earnings, \$776,667, being \$49,319 more than in Nov., 1921. For the first 11 months in 1922, the Canadian National steam and electric lines' total gross earnings were \$109,400,670, a decrease of \$5,935,508 from those for the first 11 months of 1921, and the operating expenses, \$117,046,562, were \$13,394,898 smaller than in the first 11 months of 1921, decreasing the operating loss from \$15,105,283 to \$7,645,892, an improvement of \$7,459,391. A Canadian National officer has expressed the opinion that if the Crowsnest rates on grain had not been introduced on the 1922 grain traffic, the national lines would have broken even for the year, and bearing in mind the radical decrease in rates which was brought about by the reapplication of the Crowsnest agreement, it is evident that the operating deficit for 1922 would have been almost or entirely non-existent if the grain rates had been left alone.

The improvement secured by the Grand Trunk in 1922, compared with 1921, has been remarkable. For the system as a whole, the gross earnings for the first 11 months of 1922 were \$96,989,651, an increase of \$2,198,388 over the first 11 months of 1921. Accompanying this improvement in gross was a substantial decrease in operating expenses, which were \$83,031,092 for the first 11 months of 1922, or \$6,047,020 less than in the corresponding period of 1921. This resulted in net earnings for the first 11 months of 1922 of \$13,958,559, being \$8,246,308 more than in the corresponding period of 1921. In Nov., 1922, the G.T.R. system as a whole enjoyed a continuation of the heavy traffic which came to it in the early autumn, the gross earnings of \$10,084,710 being \$1,363,889 more than in Nov., 1921, while the operating expenses, \$8,861,393, were but \$609,582 greater, resulting in the net earnings for the month, \$1,223,317, being \$754,306 more than in Nov., 1921. The G.T.R. figures referred to are for the entire system. For the Canadian lines, a corresponding improvement for both November and the first 11 months of 1922, as compared with corresponding period of 1921, is evident. The results on the company's Canadian lines are given in tabular form on another page of this issue.

On combining the results secured by the G.T.R. portion of the entire national system, with those secured by the original Canadian National Rys. portion, it

is evident that the prediction made in a preceding number of Canadian Railway and Marine World, that an operating surplus would be shown by the combined system for 1922, will be correct. To the end of November, the net earnings of \$13,958,559 secured by the G.T.R. system, combined with the operating loss of \$7,645,892 sustained by the Canadian Northern, Canadian Government and Grand Trunk Pacific Rys., steam and electric lines, show an operating surplus of \$6,312,667. Preliminary earnings statements for Dec., 1922, show an increase in Canadian National earnings for the week ended Dec. 7 of 4.7%, and a decrease for the week ended Dec. 14 of 5.6%, while preliminary statements for the G.T.R. show an increase in the week ended Dec. 7 of 19.04%, and for the week ended Dec. 14 of 20.8%. On this basis, it is probable that the December results will increase in appreciable degree the net earnings secured by the national lines as a whole in the first 11 months of 1922.

Preliminary earnings statements for the C.P.R. show that in the week ended Dec. 7, 1922, its gross earnings were 22.1% greater than in the corresponding week of Dec., 1921; the increase in the week ended Dec. 14 was 7.9%; in the week ended Dec. 21, the increase was about \$130,000, and in the 10 days period ended Dec. 31, the increase was \$408,000. From these figures, and those given above, covering all the railways' earnings for the first 11 months of 1922, it is evident that the railways are now enjoying returns representing a great improvement over those of the first part of 1922, and, indeed, of the past few years. The results reviewed indicate that the grain traffic, particularly on the C.P.R., has held out remarkably well, but further than that, they indicate that the movement of general traffic is large. With the seasonal falling off in the grain traffic, it would naturally be expected that the railways' gross earnings would contract considerably, and, taking into consideration the lowered rates prevailing, it would also be expected that net earnings would undergo more than a proportionate shrinkage. With improved economic conditions originating a large volume of general traffic, however, it seems probable that the railways will continue to obtain results which may be designated as satisfactory, and it is to be hoped that conditions will retain all the improvement effected to date, and go on improving, so that the railways may continue to derive adequate earnings on the present rates, after the heavy traffic consequent on the 1922 crop has all been handled.

Beer and Wine on Dining Cars in Quebec Province.—In reference to the matter published under this heading, in Canadian Railway and Marine World for January, pg. 27, we are officially advised that it has been decided to sell beer and light wines on Canadian National Rys. dining cars operating between Montreal and Quebec.

Quiet on Sleeping Cars.—The G.T.R. is displaying in sleeping cars, between 9 p.m. and 7 a.m., notices reading: "Quiet is requested for the benefit of those who have retired." One notice is placed in the smoking room and the other two in the passages, to try and prevent loud talking by thoughtless people which disturbs other occupants.

Major Graham A. Bell's Positions.

Major Graham A. Bell, C.M.G., then Assistant to the Minister, and also Financial Comptroller of the Railways and Canals Department, was, on Nov. 5, 1917, appointed a Dominion Government representative on the Canadian Northern Ry. directorate. On June 22, 1918, he was appointed acting Deputy Minister, and continued as a C.N.R. director. On Sept. 6, 1918, Sir William Mackenzie, Sir Donald Mann, and the other directors, except D. B. Hanna and Major Bell, retired. He was appointed Deputy Minister June 1, 1919, and, on Aug. 4, 1922, was appointed by the Government as a director of the G.T.R. Co. On Oct. 4, 1922, when the new directorate for the Canadian National Rys., including the Canadian Northern, the Canadian Government, the Grand Trunk and the Grand Trunk Pacific Rys., was appointed, headed by Sir Henry Thornton, Major Bell was included, and at the first meeting of the combined boards on Oct. 10, 1922, he was elected Vice President, and Vice President of Finance, of each of the companies.

The following was approved by the Governor-General on Jan. 5, 1923, and passed as order in council 10:—The committee of the Privy Council have had before them a report, dated Jan. 4, 1923, from the acting Minister of Railways and Canals, submitting that the Chairman of the Boards of Directors and President of the Canadian National Railways has preferred a special request that the services of Mr. Graham A. Bell be placed temporarily at the disposal of the railways for a period now estimated to be about three months. The Chairman has pointed out that Mr. Bell has been in very intimate touch with railway matters in Canada for a great many years, and that, in addition to being thoroughly conversant with railway problems from a general standpoint, he is in a unique position, as being particularly well informed as to those relating to the finances of all the Government owned and controlled lines, and it is consequently essential that his experience and knowledge be directly availed of at this time. The Chairman has stated further that, during Mr. Bell's absence for the above purpose, the railways will refund to the Department the amount paid to him in the usual way as civil government salary. In view of the request of the Chairman, and for the considerations aforesaid, the Minister recommends that authority be granted accordingly. The committee submit the same for approval."

Dearborn Station, Chicago, Burned.—The Union station at Dearborn St., Chicago, Ill., owned by the Chicago & Western Indiana Rd., and used by the Grand Trunk, as well as by other railways, was destroyed by fire Dec. 21, 1922. It was announced on the following day that G.T.R. traffic would not be interrupted, as all trains would enter and depart from the Taylor St. annex, which had been untouched.

Sight Testing for Railway Employees.—The Ontario Optometrical Association passed a resolution recently urging on the Board of Railway Commissioners the advisability of passing a regulation providing for examination of steam railway employees' eyesight by competent optometrists. It was stated in the preamble that in certain parts of the country these examinations are conducted by other than qualified men.

Railway Earnings.

Canadian National Railways.

Following are total operating revenues, total operating expenses, and net operating revenues or deficits, for the Canadian Northern Ry. System (steam lines only), Grand Trunk Pacific Ry., and Canadian Government Rys., the last including the Intercolonial Ry., Prince Edward Island Ry., and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government:—

	Revenue	Expenses	Net deficits	
			1922	1921
Jan.	\$8,210,401	\$10,433,564	\$2,223,163	\$2,863,058
Feb.	7,650,743	10,026,572	2,375,829	2,986,998
March	9,418,100	10,397,547	979,447	2,532,959
April	7,804,222	9,153,738	1,349,516	2,636,639
May	9,678,965	9,726,020	47,055	2,554,540
June	8,235,603	10,199,592	1,963,989	2,595,257
July	8,877,776	10,510,778	1,633,002	1,334,569
Aug.	9,569,780	10,399,617	829,837	17,105
Sept.	11,726,459	11,123,750	*602,709	*467,685
Oct.	14,074,025	11,917,281	*2,156,744	*1,033,321
Nov.	12,737,758	11,983,938	*753,820	*720,515

\$107,983,832 \$115,872,397 \$7,888,565 \$15,299,604

Decrease \$ 5,760,459 \$ 13,171,498 \$7,411,039

*Net operating revenue.

Approximate gross earnings for Dec., 1922, \$10,685,573, and for three weeks ended Jan. 21, \$6,298,226, against \$11,666,288 for Dec., 1921, and \$5,739,353 for three weeks ended Jan. 21, 1922.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1922, compared with those for 1921. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross	Expenses	Net	Decreases
Jan.	\$11,337,975	\$10,854,498	\$483,477	\$157,948
Feb.	11,303,693	10,649,205	654,488	158,904
March	13,847,627	11,427,120	2,420,507	30,402
April	12,331,371	10,782,598	1,548,773	1,097,359
May	13,664,246	11,419,732	2,344,514	949,038
June	13,810,448	11,448,134	2,362,313	742,446
July	14,463,835	12,501,927	1,961,908	92,408
Aug.	15,918,050	12,971,613	2,946,437	*370,297
Sept.	18,149,528	13,568,595	4,580,933	*265,883
Oct.	23,061,548	15,258,803	7,802,745	*1,091,258
Nov.	21,421,078	15,695,285	5,725,793	*2,053,991

\$169,309,396 \$136,472,510 \$32,836,886 \$* 552,927

Increase \$ 552,927

Decrease \$ 7,955,534 \$ 8,508,461

*Increases.

Approximate gross earnings for Dec., 1922, \$17,159,000, and for three weeks ended Jan. 21, \$8,609,000, against \$15,567,000 for Dec., 1921, and \$7,564,000 for three weeks ended Jan. 21, 1922.

Grand Trunk Railway.

Following are the total operating revenues, total operating expenses and net operating earnings, or deficits, for 1922 and 1921, of the G.T.R. Co. of Canada lines, including the Champlain & St. Lawrence Ry., United States & Canada Ry., Vermont & Provincial Line Ry., and the Black Rock terminal, in the U.S., but not including other lines in New England, nor lines west of St. Clair and Detroit Rivers.

	Revenue	Expenses	Net revenue	
			1922	1921
Jan.	\$5,354,317	\$4,984,953	\$369,364	*\$701,166
Feb.	5,667,487	4,700,985	966,502	31,374
March	6,118,314	5,153,028	965,286	577,680
April	4,901,367	4,696,666	304,701	382,272
May	5,800,329	5,189,756	610,572	324,185
June	6,503,646	5,619,124	984,523	712,028
July	7,164,085	5,709,652	1,454,433	916,225
Aug.	7,383,340	6,130,841	1,252,499	1,361,924
Sept.	7,046,496	6,191,109	855,387	127,897
Oct.	7,557,284	6,770,677	786,607	921,313
Nov.	7,481,578	6,924,264	557,314	182,896

\$70,978,243 \$61,871,057 \$9,107,188 \$4,886,989

Increase \$4,270,199

Decrease \$ 210,794 \$ 4,480,993

*Deficit.

Approximate gross earnings for Dec., 1922, \$8,967,397, and for three weeks ended Jan. 21, \$5,622,205, against \$7,618,869 for Dec., 1921, and \$4,851,865 for three weeks ended Jan. 21, 1922.

The Bad Order Car Situation.

That Canadian railways have come through the peak traffic period with little or no let-up in the efficiency with which freight cars have been kept in good order, is evident from reports issued by the Railway Association of Canada. The report for the period ended Jan. 1, 1923, shows that at the end of the period, out of a total of 194,611 freight cars on Canadian lines, there were only 10,965 in bad order. The usual 7% allowance, which the American Railway Association prescribes as a reasonable percentage of cars to be in bad order, would allow Canadian lines to have 13,623 cars in bad order without exceeding the 7% standard, but the figures given above show that 2,658 less cars than this were unfit for service. The actual number in bad order was 5.6%. The report shows the car shortage as having been overcome, a surplus of 244 cars in good order being reported.

The great excellence of the condition in which Canadian railways kept their freight equipment throughout the period of heavy traffic in the latter part of 1922 is shown by the fact that on Oct. 1 the percentage of bad order cars on Canadian lines was but 7.03, on Nov. 1 but 6.1, on Dec. 1 but 5.2, and at the end of December, but 5.6. That such a low percentage of bad order equipment could be maintained throughout a period when every car was in continuous demand, must be looked upon as a fine achievement.

The latest report available at the time of writing, issued by the American Railway Association's Car Service Division, shows that at Dec. 15, 1922, the total number of freight cars on line on the U.S. class 1 roads was 2,265,683, of which 213,837, or 9.4%, were in bad order. Out of 1,033,769 box cars, 93,219, or 9%, were in bad order; out of 58,694 refrigerators, 5,598, or 9.5%, were in bad order; out of 954,174 gondolas, 96,252, or 10.1%, were in bad order; out of 81,220 stock cars, 7,112, or 8.8%, were in bad order, and out of 95,737 flat cars, 8,953, or 9.4%, were in bad order. The percentage of all cars in bad order, 9.4, compares with a percentage of 9.9 on Dec. 1, and 10.4% on Nov. 15, 1922. In view of the fact that but a few months ago between 13 and 14% of the U.S. class 1 roads' cars were in bad order, the improvement accomplished on the U.S. lines has been substantial, although a wide margin still remains between the Canadian and U.S. bad order percentage.

The C.P.R. and Agricultural Courses.

—E. W. Beatty, President, C.P.R., has offered to the four prize winners of the young farmers' clubs of Great Britain, full summer courses in the Alberta agricultural schools. The four young men selected will arrive in Canada in time to commence the summer course in the schools in May, and after visiting various areas in the west, and attending fairs, etc., will return to Great Britain in the autumn. They are to make reports of their visit for immigration propaganda.

Railway Mechanical Convention.—The American Railway Association, Mechanical Division, will not hold its usual annual convention, with railway supply exhibits, at Atlantic City this year, but a business meeting will be held in Chicago, opening on June 20, and lasting for two or three days.

Storms Interfere with Traffic in the Maritime Provinces.

A storm of long duration, marked by extremely heavy snowfall, high winds and low temperatures, struck Nova Scotia, New Brunswick and Prince Edward Island on the afternoon of Jan. 12, and increased in intensity on Jan. 13, continuing to rage until about noon of Jan. 14, when it was succeeded by extreme cold. Due to the heavy snowfall, and the high winds filling the railway cuts with snowdrifts which packed hard, train service on practically the entire Canadian National Rys.' Maritime District was interfered with seriously. At the beginning of the storm, snow ploughs and flangers were put to work, but with the storm increasing in violence, the tracks filled up as fast as cleared, and it was consequently decided to hold all freight trains at terminals until the storm subsided. Ploughs and flangers were kept operating, however, in an effort to keep passenger trains moving. The Ocean Limited stalled in a heavy drift about 7 miles east of Sackville, N.B., on Jan. 13, and was not released till Jan. 14. On Jan. 15 the lines in New Brunswick and Nova Scotia were nearly all cleared, and normal traffic conditions again prevailed on Jan. 16. In Prince Edward Island the storm raged with great intensity, and on Jan. 13 and 14 all tracks became snowed in completely, with the result that traffic practically came to a standstill on Jan. 14 and 15. Ploughs and flangers were kept at work, however, with the result that a few trains moved on Jan. 16, and on the evening of Jan. 17 conditions were restored to normal.

Grading and Track Laying on Canadian National Railways, Western Lines.

The C.N.R. Western Lines grading and tracklaying programme for 1922 was chiefly one of constructing connections and revisions, to enable traffic to be routed by shorter or better lines, and eliminate railway crossings and interlocking plants, thus reducing operating costs and quickening freight and passenger traffic. The following is a list of these undertaken:

Battle-Duhamel, Alta.—Connection between Canadian Northern and Grand Trunk Pacific Rys.: Leaves C.N.R. near Battle at mile 53.29, Battle River Subdivision, joining G.T.P.R. near Duhamel at mile 33.78, Bashaw Subdivision. Total length of connection 3.51 miles, which was graded and track laid during 1922. Grading contractor, F. Mannix, Calgary, Alta.

Lampman, Sask.—Connection between Grand Trunk Pacific and Canadian Northern Rys.: Leaves G.T.P.R. two miles east of Minard, at mile 117.10, Boundary Subdivision, joining C.N.R. at Lampman, at mile 67.26, Lampman Subdivision. Total length of connection 1.79 miles. Graded during 1922, 1.79 miles. Track laid 1.52 miles. Grading contractors, Gibbs Bros., Lumsden, Sask.

Magnolia, Alta.—Connection between Canadian Northern and Grand Trunk Pacific Rys.: Leaves C.N.R. near Magnolia, at mile 67.67, St. Albert Subdivision, joining G.T.P.R. about 27 miles east of Entwistle, at mile 857.19, Evansburgh Subdivision. Total length of connection 0.83 mile, which was graded and track laid during 1922. Grading contractor, J. Fitzgerald, Edmonton, Alta.

Regina, Sask.—Connection between Grand Trunk Pacific and Canadian Northern Rys.: Leaves G.T.P.R. near West Yard, Regina, at mile 3.88, Riverhurst Subdivision, joining C.N.R. near Ardmore, at mile 5.50, Craik Subdivision. Total length of connection 3.67 miles, which was graded during 1922, and track laid. Grading contractors, Roasa & Wikstrand, Saskatoon, Sask.

Where track has been laid on the connections mentioned above, ballasting will be started early in the spring.

Ansell-Bickerdike, Alta.—Line revision on Grand Trunk Pacific Ry. between Ansell, at mile 60.71, Brule Subdivision, and Bickerdike, at mile 64.46, Brule Subdivision. Total length of revision 3.90 miles, which was graded during 1922, but no track laid. Grading contractor, D. Fitzgerald, Carstairs, Alta.

Rowan, Ont.—Line revision on Canadian Northern Ry. near Rowan, between mile 35.65, Kashabowie Subdivision, and mile 38.59, Kashabowie Subdivision. Also connection from revised line to National Transcontinental Ry. about 3 miles west of Dona, at mile 30.52, Graham Subdivision. Length of revision 2.73 miles. Graded during 1922, 0.70 mile. No track laid. Length of connection, 0.66 mile. Graded during 1922, 0.22 mile. No track laid. Grading contractor, W. A. Dutton, Winnipeg, Man.

Neebing, Ont.—At Neebing, 3.2 miles west of West Fort William, work was started on a terminal yard which will be completed this year. It includes 24-stall roundhouse; 350-ton coaling plant; 150,000 gall. water tank with 8 in. pipe line, 2¼ miles long, to City of Fort William water mains; other facilities, and a yard designed to accommodate the special requirements of traffic at this point of 3,100 car capacity. Double tracking the line between Port Arthur and the new connection at Rowan was commenced during 1922, and is practically completed from Port Arthur to Neebing Yard.

Large Orders for Steel Rails.

The Canadian National Rys. have given orders recently for a very large tonnage of 85 lb. steel rails, standard C.N.R. section.

The Dominion Iron & Steel Co. has been given an order for 25,000, delivery to be taken at Sydney, N.S., or Montreal, commencing early in the spring. A further order for 15,000 tons, to be delivered at Port Arthur for Western Lines, is under negotiation.

The Algoma Steel Corporation has been given an order for 40,000 tons, principally for Western Lines, delivery to commence about March 1.

The aggregate cost of the 80,000 tons will be between \$3,500,000 and \$4,000,000.

In addition to the above, the G.T.R. has on order 34,824 tons, details of which were given in Canadian Railway and Marine World for Nov. 1922, pg. 561.

Among the Express Companies.

The Canadian National Ex. Co. has opened offices at Pellett River, N.B., and Eckville, Alta., and has closed its offices at McNeills Mills, P.E.I., Petite Riviere, Les Eboulements and Ste. Irene, Que., Mowat, Ont., and Ridpath, Sask.

The National Dairy Council appealed to the Dominion Government recently against a Board of Railway Commissioners' ruling placing ice cream in the first class. It is claimed that as ice cream is a

necessary food product, it should be in the second class. The case was heard by a sub committee of the cabinet, Jan. 12 and judgment was reserved.

The Railways and Canals Department is reported to have notified the Dominion Ex. Co. and the Canadian National Express Co., the latter as successor of the Canadian Ex. Co., that the arrangements they have for operation over the Canadian Government Rys. and subsidiary lines, will be terminated on March 31. The Dominion Ex. Co., which operates exclusively over the Canadian Pacific and several other privately owned lines, also operates jointly over the Intercolonial, the Prince Edward Island, and several small affiliated railways in the Maritime Provinces over which the Canadian National Ex. Co. also operates. The latter company operates exclusively over Canadian Northern, Grand Trunk, Grand Trunk Pacific, National Transcontinental and several other lines. The impression prevails that the giving of the notice referred to is a preliminary to giving the Canadian National Ex. Co. exclusive rights on the various lines to be comprised in the Canadian National Rys. system when co-ordination is completed.

Telegraph, Telephone and Cable Matters.

G. D. Perry, Vice President and General Manager, Canadian National Telegraphs, and Mrs. Perry, left Toronto, Jan. 11, for California, expecting to return early in February.

Canadian National Telegraphs have opened offices at St. Ulric, Riviere Blanche, Que.; Alonsa, Man., and Peesane, Ridgedale and Spruce Lake, Sask., and have closed offices at Peninsula, Que.; Cayuga, Kingscourt Jct., MacDiarmid, Ont.; Redpath, Sask., and Bonar, Alta.

A. H. Morse, whose resignation as Managing Director, Marconi Wireless Telegraph Co. of Canada, Montreal, was announced in our last issue, was born at Bournemouth, Eng., in 1880, and entered telegraph service at the Central Telegraph Office, London, Eng., in 1897. During the Boer War, 1899 to 1901, he served with the telegraph battalion, Royal Engineers, and in 1902 was engaged in telegraph line construction across the Karoo Desert. In 1904-05 he was Inspector of government telegraphs in Northern Nigeria, West Africa, and built a part of the first telegraph line to Sokoto. He came to Canada in 1905, and was for some time with Dominion De Forest Wireless Telegraph Co. as Assistant Engineer, and was later Superintendent in charge of service between Montreal, Ottawa and Quebec, which is said to have been the first commercial overland wireless telegraph service in the world. He entered Dominion Government service in 1907, and was responsible under the Marine Department for the erection of the first five government wireless telegraph stations on the Pacific coast. In 1909 he entered United Wireless Telegraph Co.'s service in New York, and went to Alaska as Superintendent of Construction and Maintenance. In 1910 he was appointed Superintendent, European Division, of that company, and entered Marconi Wireless Telegraph Co.'s service in 1912. He was appointed wireless advisor to the Indo-European Telegraph Co. in 1915, and in 1919 was appointed Managing Director, Marconi Wireless Telegraph Co. of Canada, at Montreal.

Electric Railway Department

Rehabilitation and Extension of Toronto Street Railway System.

Since the Toronto Transportation Commission took over the Toronto Railway Co. and the Toronto Civic Railway lines in Sept., 1921, for operation, it has not only done extensive repair and track renewal work, but also a comprehensive programme of track construction, so that the track mileage now being operated is considerably greater than when the Commission assumed control, with a corresponding increase in the area being furnished with electric railway service.

sumed control of the lines, was very short, a start was made at once, and rehabilitation work gone ahead with. This work done in the 1921 season was as follows: On Bathurst St., 2.261 single track miles of 122-S-G standard and 1.279 of 122-C-A standard; on Church St., 0.212 mile 122-S-G; on Dundas St., 0.161 mile 122-C-G; on Yonge St., 4.127 miles 122-C-G and 0.046 mile 122-S-G; on College St., 0.317 mile 122-C-A; on Avenue Road, 0.680 mile 122-S-G; on

girder rail, and granite block wearing surface; 122-C-G provides for concrete track foundation, 122 lb. steel, and granite block wearing surface, and 122-C-A provides for concrete foundation, 122 lb. steel, and asphalt wearing surface. The standards call for either softwood ties, 6 in. thick by 8 in. wide by 8 ft. long, with tie plates; or white oak ties of the same dimensions, without tie plates; $5\frac{1}{2}$ x $9\frac{1}{16}$ in. spikes; tie rods $5\frac{1}{4}$ ft. long by $\frac{3}{8}$ x $2\frac{1}{8}$ in. flat, with 1 in. round ter-



Map showing location of Toronto Transportation Commission's Work.

Canadian Railway and Marine World has given, from time to time, details of the progress made by the Commission in its track work, together with descriptive articles on the most important jobs, and data in connection with methods, materials and construction standards, but with the 1922 construction season now past and the major part of the Commission's entire track construction and rehabilitation programme now carried out, a review of the work done since the lines were placed under the Commission's control will be of interest. Although in practically all cases the lines are double track, all distances will be referred to in terms of single track miles. For example, if a mile of double track was laid on a certain street, it will be referred to herein as two single track miles of track.

Although the working season remain-

ing in 1921, after the Commission assumed control of the lines, was very short, a start was made at once, and rehabilitation work gone ahead with. This work done in the 1921 season was as follows: On Bathurst St., 2.261 single track miles of 122-S-G standard and 1.279 of 122-C-A standard; on Church St., 0.212 mile 122-S-G; on Dundas St., 0.161 mile 122-C-G; on Yonge St., 4.127 miles 122-C-G and 0.046 mile 122-S-G; on College St., 0.317 mile 122-C-A; on Avenue Road, 0.680 mile 122-S-G; on

Front St., 0.619 mile 122-C-G; on York St., 0.065 mile 122-S-G; on Bloor St., 0.047 mile 122-S-G; on Lansdowne Ave., 0.071 mile 122-S-G. The total rehabilitation work done in 1921 was 9.885 single track miles. By rehabilitation is meant a complete renewal of the track structure, from subgrade to top of rail; in all work classed as rehabilitation for the purposes of this article, the old track was completely removed, the track allowance excavated to 2 ft. below the finished grade of top of rail, new foundation installed and the new track structure, including new ties, rails and track fixtures, placed. The three standard types of track construction used by the Commission in both rehabilitation and new construction were shown in cross and longitudinal section in Canadian Railway and Marine World for Dec., 1922, pg. 626. The 122-S-G standard provides for

broken stone foundation, 122 lb. grooved

minals; joint plates welded top and base, and joint bolts 1 in. diam.

The track extensions in 1921 were as follows: On Coxwell Ave., between Queen St. and Danforth Ave., 1.377 miles of 100-C-G construction; on Bloor St., at the west end, between Jane St. and Runnymede Road, 0.829 mile, 122-C-A; on Bathurst St., between Davenport Road and St. Clair Ave., 0.454 mile, 122-C-A, and 0.416 mile, 122-C-G, and between Dupont St. and Davenport Road, 0.151 mile, 122-C-A, and 0.244 mile, 122-C-G; on Teraulay St. (now Bay St.), between College and Bloor Sts., 1.154 miles, 122-C-A; a loop on Albert, James and Teraulay Sts., near the city hall, 0.090 mile, 122-C-A; a line connection on Gerard St. at Greenwood Ave., 0.086 mile, 122-C-G; a siding on St. Clair Ave. at Caledonia Road, 0.029 mile of open track construction; sidings on Kingston Road, 0.072 mile open track construction. The

new construction in the short 1921 season amounted to 4.902 single track miles.

In addition to the foregoing work done in 1921, the Commission effected a large amount of major repairs to track which greatly needed it. Under this classification was the following work: Resurfacing pavement and welding joints; welding and building up joints; laying new rail; laying new paving on old foundation; relaying rail on old foundation. In 1921, the following major repairs were carried out: On Danforth Ave., 0.082 mile; on Yonge St., 0.017 mile; on St. Clair Ave., 0.150 mile; on College St., 0.050 mile; on Queen St., 0.655 mile; on Dundas St., 0.101 mile; laid between special track work and non-rehabilitation track, 0.365 mile; total, 1.420 miles.

The 1921 season also saw a good start made on the installation of main line special track work, including the various turnouts, crossings, etc., necessary for facility in car routing. The term main line special track work is used to differentiate it from that required on account of car houses and yards, material yards, etc., such special work being dealt with later. The main line special track work is further subdivided as between rehabilitation special track work, which is that installed in a location where there were special track facilities before, irrespective of the fact that the routing established by the new layout may have differed from that existing according to the original layout. Extension special track work is that placed in a location where there was no special track work before. In 1921, the Commission installed 27 pieces of rehabilitation main line special work, totalling 4.067 single track miles, and 16 pieces of extension main line special track work, totalling 1.050 single track miles, or a total for the year of 5.117 single track miles.

The main line track rehabilitation work done in 1922 was as follows: On King St., 0.719 mile 122-S-G, 0.056 mile other construction, and 1.876 miles 122-C-G; on Bloor St., 3.877 miles 122-S-G, 0.026 mile other construction, and 1.227 miles 122-C-G; on Parliament St., 0.165 mile 122-C-A and 0.287 mile 122-S-G; on Gerrard St., 1.189 miles 122-C-G, 0.003 mile other construction, and 0.051 mile 122-S-G; on Dovercourt Road, 1.974 miles 122-C-A; 0.040 mile with stone foundation and asphalt wearing surface; 0.007 mile 122-S-G, 0.021 mile other construction, and 0.022 mile 122-C-G; on Dufferin St., 0.826 mile 122-C-A, 0.084 mile 122-C-G, 0.012 mile 122-S-G, and 0.043 mile of open track work on Dufferin St. loop; on Dupont St., 1.064 mile 122-C-A and 0.011 mile 122-C-G; on Queen St., 1.438 miles 122-C-G, 1.160 miles 122-S-G, 2.447 miles 122-C-A, 0.336 mile other construction, and 0.102 mile with stone foundation and asphalt wearing surface; on Howard Park Ave., 0.780 mile 122-C-A, 0.023 mile with stone foundation and asphalt wearing surface, 0.062 mile open track construction and 0.026 mile 122-S-G; on Spadina Ave., 0.435 mile 122-S-G and 0.028 mile open track construction; on Church St., 0.276 mile 122-S-G, 1.867 miles 122-C-A, 0.003 mile 122-C-G, and 0.023 mile with stone ballast and asphalt wearing surface; on York St., 0.357 mile 122-C-A, 0.026 mile 122-C-G, and 0.119 mile 122-S-G; on Carlton St., 0.450 mile 122-S-G; on McCaul St., 0.443 mile 122-C-A, 0.006 mile with stone foundation and asphalt wearing surface, and 0.008 mile open track construction; on Dundas St., 0.152 mile 122-S-G; on Roncesvalles Ave., 1.780 miles 122-C-G, 0.039 mile 122-S-G, and

0.087 mile other construction; on Ossington Ave., 0.568 mile 122-C-A, 0.047 mile stone foundation and asphalt wearing surface, and 0.011 mile 122-S-G; on Lansdowne Ave., 0.905 mile 122-C-A and 0.067 mile 122-S-G; on Hallam St., at Dovercourt Road, 0.016 mile 122-S-G, and on Yonge St., at Woodlawn Ave., 0.056 mile 122-C-G. The total rehabilitation for the 1922 season amounted to 27.698 single track miles.

Main line track extensions in 1922 were as follows: On Kingston Road, 0.096 mile 122-S-G construction, 0.169 other construction, and 3.409 miles of 122-C-G construction; Queen St. and Kingston Road loop, 0.042 mile open track construction; Lake Shore Road extension from Roncesvalles Ave. to Humber River, 1.882 miles 122-C-G and 0.399 mile 122-S-G, with loop at west end of

The 1922 extensions totalled 16.187 single track miles.

Major repairs, including work of the class above noted under this head for 1921, were carried out in 1922 as follows: On Avenue Road, 0.847 mile; Bloor St., 1.307 miles; Dufferin St. loop, 0.007 mile; Queen St., 4.235 miles; College St., 1.788 miles; Spadina Ave., 0.389 mile; York St., 0.038 mile; Dundas St., 4.054 miles; King St., 2.941 miles; Victoria St., 0.167 mile; Church St., 0.457 mile; Bay St., 0.513 mile; Ossington Ave., 0.434 mile; Adelaide St., 0.718 mile; Lansdowne Ave., 1.021 miles; Gerrard St., 0.405 mile; Front St., 0.402 mile; Yonge St., 0.051 mile; Bloor St. viaduct, 0.066 mile. Total major repairs for 1922 were 27.534 single track miles.

Special track work installations in 1922 were as follows: Rehabilitation main line special track work, 57 pieces, totalling 7.429 single track miles of steel; extension main line special track work, 33 pieces, totalling 2.320 single track miles of steel.

In addition to the main line rehabilitation, extension and repair work, the Commission did a great deal of track laying in car yards, and installing special track work in the yards and at the turnouts from the main lines to the yards and houses. The following is the single track mileage of the steel laid in connection with car houses, the figures including not only the straight track laid in yards and approaches thereto, but also the special work and turnouts from the main lines necessitated by the existence of the yard or house. These figures are for both 1921 and 1922, as owing to the work being characterized by a good deal of continuity as between the construction seasons, it was not deemed advisable to try to classify the work done between the two seasons: Hillcrest yard, 0.500 mile; Coxwell Ave. yard, 0.065 mile; small yard on Bloor St., west of Dundas St., 0.042 mile; St. Clair Ave. car house and yard, 2.738 miles; Russell car house and yard, 3.101 miles; Danforth car house and yard, 3.208 miles; Eglinton car house and yard, 4.394 miles. The total car house and yard track work amounted to 14.048 single track miles.

The Commission's track work since the lines were taken over is summarized as follows: Rehabilitation in 1921, 9.885 miles; in 1922, 27.698 miles; total, 37.583 miles. Extensions in 1921, 4.902 miles; in 1922, 16.187 miles; total, 21.089 miles. Major repairs in 1921, 1.420 miles; in 1922, 27.534 miles, total 28.954 miles; 1921 main line rehabilitation special track work, 4.067 miles; in 1922, 7.429 miles; total 11.496 miles; 1921 main line extension special track work, 1.050 miles; 1922, 2.320 miles; total 3.370 miles. Total car house and yard track work, 14.048 miles.

The location of the works specified in this article is shown in the accompanying map of the Toronto street railway system as at the end of 1922. By constructing the line from the foot of Roncesvalles Ave. to near the Humber River, the double track on Yonge St. to the northern city limits, and the double track line on Kingston Road to the eastern city limits, the Commission has extended the street railway service to portions of the city which were previously considered outlying districts, and by the additional track construction in the more central portions of the city, ability to more adequately cope with conditions of great traffic density has been provided. The Commission's bus service, de-

Canadian Electric Railway Association.

Honorary President, E. A. Robert, President, Montreal Tramways Co., and Quebec Ry., Light, Heat & Power Co.

Honorary Vice President, Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co.

Honorary Council: Thos. Ahearn, President, Ottawa Electric Ry.; Acton Burrows, Proprietor, Canadian Railway and Marine World; Geo. Kidd, General Manager, British Columbia Electric Ry.; Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., and director, Quebec Ry., Light, Heat & Power Co.

President, Major F. D. Burpee, Manager and director, Ottawa Electric Ry.

Vice President, H. H. Couzens, General Manager, Toronto Transportation Commission.

Executive Committee: The President, the Vice President, the immediate past President (G. Gordon Gale, Vice President and General Manager, Hull Electric Co.) and D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; D. W. Houston, Superintendent, Regina Municipal Ry.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; R. Mayne-Read, Superintendent, Quebec Railway, Light & Power Co.; W. R. Robertson, General Superintendent of Railways, Hydro-Electric Power Commission of Ontario; W. L. Weston, Manager, Nova Scotia Tramways & Power Co.; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

Treasurer, W. S. Hart, Managing Director, Three Rivers Traction Co.

Auditor, Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Ry.

Secretary, D. N. Gill, Comptroller, Ottawa Electric Ry., Ottawa, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

extension, 0.045 mile of open track construction; on Main St., from Gerrard St. to Danforth Ave., 0.486 mile 122-C-G, 0.030 mile 122-S-G, and 0.051 mile open track construction; on Dovercourt Road, from Van Horne St. to Davenport Road, 0.422 mile 122-C-A and 0.180 mile 122-C-G; on Bay St., from Bloor St. to Davenport Road, 0.350 mile 122-C-A and 0.027 mile 122-S-G; on Carlaw and Pape Aves., from Gerrard St. to Danforth Ave., 1.590 miles 122-C-A, and 0.018 mile 122-S-G; on Yonge St., from Woodlawn Ave. to Deloraine Ave., 5.398 miles 122-C-G and 1.301 miles 122-S-G; loop on Yonge St. at Glenecho Drive, 0.063 mile open track construction; tail track on Pape Ave. at Gerrard St., 0.018 mile 122-S-G; track on Eglinton Ave. for car house entrance connection, 0.117 mile 122-C-G; tail track on Glencairn Ave., 0.023 mile 122-C-G; tail track on McLean Ave., 0.030 mile open track construction.

scribed in preceding issues of Canadian Railway and Marine World, has proved of great aid in finding a solution for the city's transportation problem. A serious problem still remains in the western part of the city, west of the intersection of Dundas and Keele Sts., where Dundas St. is occupied by the Toronto Suburban Ry tracks. Negotiations for the purchase of this line from the Dominion Government by the city have been under way for some time, and it is not likely that an adequate solution of West Toronto's transportation problem will be arrived at until a decision in that matter is reached.

The foregoing will give some idea of how the Transportation Commission has grappled with the problem of rehabilitating a badly run-down street railway system, and, by providing extensions, rounding it off into a transportation machine suitable for a city of Toronto's population. While figures as to costs are not available, it may be assumed that the cost of the work has been large, but, having in mind the great advantages to be gained from adequate transportation, there can be no doubt that the returns secured from this new and larger system, operated efficiently and economically with large car units, and in accordance with the most modern standards of electric railway operation, will amply justify the investment made.

Toronto Transportation Commission's 1922 Work.

H. H. Couzens, General Manager, Toronto Transportation Commission, has furnished the following report:—

Track.—During 1922 the Commission continued to carry out with vigor the extension and rehabilitation work first commenced in 1921. In 1922 nearly 28 miles of extensions were laid, of which over 18 miles were on streets and the balance in car houses and yards. In addition, 35 miles of former Toronto Ry. track have been totally rebuilt, while another 28 miles of track have been given general repairs. With the conclusion of the 1922 work, the bulk of the track rehabilitation programme has been completed, excluding the Toronto Suburban Ry. The total mileage of all tracks operated by the Commission is 199 miles, against 143 formerly operated by the Toronto Ry.

Passenger Equipment.—During the spring of 1922 the Commission received 59 large new cars, being the balance of the 250 ordered in 1921. Further orders for 200 of these cars were placed in 1922, the first of which are now being delivered. Four trackless trolleys and 3 single-deck motor busses were also added to the passenger equipment during the year.

One hundred and seventy-eight former Toronto Ry. cars have been permanently removed from service, and of these 85 were dispatched to Haileybury to be utilized as temporary dwellings by the fire sufferers.

Car Houses and Yards.—The Commission has completed extensions to two car houses and three yards, while one entire new car house and yard has been built.

Service.—The rehabilitation work as carried out on the track has added very much to the comfort of service, and with other improvements has enabled better operating speeds to be obtained. The extensions which have been made have greatly increased the usefulness of ser-

vice, and the area now served under one fare is about 35 square miles, against 17 square miles formerly served by the Toronto Ry. Unnecessary stops have been eliminated, new routes have been opened, headways on the trunk lines have been improved. The service given has been substantially improved during the year and increased accommodation offered. With more modern rolling stock and the necessary facilities for the accommodation of the same, also adequate repair shops, a still further improvement can be confidently predicted.

In view of the progress of the work of reconstruction to date, the Commission hopes to be able to anticipate the period previously estimated as necessary for the rehabilitation of the system and complete this work by the end of 1923.

During the year fares for children have been decreased from cash, 4c., to cash, 3c., and tickets which were formerly 7 for 25 cents, are now 10 for 25 cents.

The Toronto Clean Up Deal's History.

G. R. Geary, K.C., Corporation Counsel, Toronto, made the following report on Dec. 22, 1922, which gives the history of the clean-up deal:—"The city council, on Dec. 8, 1920, adopted paragraph 2 of the Hydro-Electric Power Commission of Ontario's report to the Board of Control, dated Dec. 3, 1920, which involved the purchase by the Commission of the various properties as set out therein. Of these properties, the distribution systems of the Toronto & Niagara Power Co. and the Toronto Electric Light Co., and the tracks, poles, etc., of the Toronto & York Radial Ry. Metropolitan Division, situate upon the highway within the city limits, were to be acquired for and on behalf of the city. Following this, certain legislation was passed in the spring of 1921, viz.: The Toronto Power and Railway Purchase Act, providing for the purchase of the assets above described, and the issue of bonds therefor, and for the operation of the property acquired, i.e., as to electricity by the Toronto Electric Commissioners and as to street railway by the city as it was then operating its railways. Then there was the Toronto Radial Railway Act, 1921, which set out that on the completion of the purchase, the Metropolitan Division (with the Schomberg and Aurora Ry.), the Mimico Division and Scarboro Division should be vested in the Commission on behalf of the city, subject to certain agreements set out in the act, and being largely the ordinary form of radial railway agreement under the Hydro-Radial Act. Then on Dec. 19, 1921, by bylaw 8947, the council authorized the execution of an agreement with the Hydro-Electric Power Commission for the transfer to the city of the electrical distribution system within the city, and the Metropolitan Ry. within the city. Negotiations between the Toronto Ry. Co. and the Hydro-Electric Power Commission were somewhat protracted, and it was not till the summer of 1922 that the agreement was finally consummated. On being advised that the matters were then ready to close, on July 27, 1922, bylaw 9301 was passed authorizing the entering into of the three agreements as to the Metropolitan, Mimico and Scarboro Divisions under the Toronto Radial Railway Act above referred to. The signing of the main agreement was followed by the transfer of all named assets on Nov.

1, 1922. Since then they have been operated by the Hydro-Electric Power Commission and the City of Toronto, respectively. The term of the original agreement is that all operations were to be on account of the city and the Hydro Commission from Dec. 1, 1920.

Electric Railway Track Laid in 1922.

Preliminary figures showing new electric railway track laid in Canada in 1922 were given in Canadian Railway and Marine World for January. Following are revised figures, the mileages being those of first track, that is, from point to point, exclusive of second track or sidings:

	Miles	Miles
British Columbia Electric Ry.—		
Broadway West, Vancouver.....		1.00
Kitchener & Waterloo St. Ry.—		
Albert St. to city limits, Kitchener, Ont.....		1.00
Lake Erie & Northern Ry.—		
Interchange tracks with G.T.R. at Simcoe, Ont.....		0.25
Montreal Tramways Co.—		
Church St., Drake to Wellington St.....	0.71	
Bordeaux spur.....	0.16	
Red Star refineries spur.....	0.09	
		0.96
Quebec Ry., Light & Power Co.—		
St. Valier St. and Bells Lane extension.....	0.46	
Charlebourg Road extension.....	0.42	
Marguerite-Bourgeois extension.....	0.15	
Loops and sidings.....	0.04	
		1.07
Regina Municipal Ry.—		
Edward St. line extension.....		0.10
Toronto Transportation Commission—		
Kingston Road, Queen St. to eastern city limits.....	1.799	
Lake Shore Road, Roncesvalles Ave. to Humber River.....	1.406	
Main St., Gerrard St. to Danforth Ave.....	0.270	
Dovercourt Road, Van Horne St. to Davenport Road.....	0.313	
Bay St., Bloor St. to Davenport Road.....	0.224	
Carlaw and Pape Avenues, Gerrard St. to Danforth Ave.....	0.878	
Yonge St., Woodlawn Ave. to north city limits.....	3.492	
		8.382
Winnipeg Electric Ry.—		
Ash St. to Lindsay St.....		0.50
Total.....		12.762
In 1921 the track laid was 7.757 miles.		

British Columbia Electric Ry. Services Upset.—Owing to a sudden thaw near the end of Dec., 1922, and a consequent flood on the Fraser River, about 400 ft. of the company's bridge across the north arm of the river was washed out, and other damage was done. Car service was as a consequence upset, and owing to the breaking of a high tension wire, the car service to Lulu Island was suspended, but was resumed in a couple of days.

The Montreal Public Service Corporation, in which E. A. Robert, President Montreal Tramways Co., and Quebec Railway, Light & Power Co., is interested, applied recently to the Quebec Legislature for authority to change its name to the Quebec-New England Hydro-Electric Corporation, and to do business outside the province.

Major A. B. Shearer of the Dominion Air Station at Halifax, N.S., is reported to have completed an air survey of the Nova Scotia Government hydro-electric developments at St. Margaret's Bay and Sheet Harbor, and to be making similar surveys of the New Brunswick hydro-electric development area at Musquash.

"Why are they not going to have electric cars any longer?" "Because they are long enough."

Electric Railway Operating Statistics for Year Ended Dec. 31, 1921.

Name of Railway	1st Main track mileage	Gross earnings from operation	Miscellaneous income	Operating expenses	Taxes funded debt, etc.	Net income or loss	Total car mileage	Fare passengers carried	Freight carried tons
Brandon Municipal Ry.....	9.90	\$43,931		\$58,810	\$22,026	\$-36,905	245,150	715,307	.....
Brantford & Hamilton Ry.....	23.19	288,049		199,388	101,044	-12,383	427,466	808,902	14,528
Brantford Municipal Ry.....	19.28	191,951		150,640	28,294	13,016	495,897	3,383,878	.....
British Columbia E.R.....	244.84	5,424,238	\$1,631,862	4,415,535	1,234,283	1,406,282	3,004,866	70,920,420	396,958
Calais S.R.....	7.00	57,968		52,213	6,429	-674	183,960	742,040	.....
Calgary Municipal Ry.....	66.50	940,456		653,861	129,789	156,796	2,899,036	15,629,275	3,598
Canadian Resources Develop- ment Co.....	1.75	57		938		-880	6,388	647	.....
Cape Breton Electric Co.....	30.59	375,821	121,908	321,724	137,785	38,219	742,767	4,561,824	.....
Chatham, Wallaceburg & Lake Erie Ry.....	36.73	168,178		152,821	57,770	-36,413	216,911	194,165	103,557
Cornwall S.R. Light & Power Co.	4.00	53,932	1,421	46,112	1,343	7,898	213,900	635,885	83,850
Edmonton Radial Ry.....	32.82	788,579	5,085	580,375	146,511	66,777	2,152,212	12,790,738	100
Fort William S.R.....	11.03	191,992	71,991	170,135	65,184	28,664	654,171	3,120,410	.....
Grand River Ry.....	18.63	353,315	971	300,088	96,295	-42,097	461,630	1,354,806	129,483
Guelph Radial Ry.....	8.49	77,326		76,064	11,642	-10,380	196,264	1,393,626	.....
Hamilton & Dundas S.R.....	6.98	90,536		108,498	6,773	-24,707	190,162	1,079,422	162
Hamilton, Grimsby & Beamsville E.R.....	22.60	210,565		227,544	21,819	-38,798	421,543	1,018,588	53,274
Hamilton Radial Ry.....	22.86	198,394		223,805	78,774	-104,159	443,764	1,245,444	44,203
Hamilton S.R.....	17.40	984,346		870,869	119,528	-6,050	2,838,938	23,064,924	.....
Hull Electric Co.....	16.54	328,364	36,137	250,649	87,269	26,583	892,006	4,112,523	4,576
International Transit Co.....	3.80	87,239	47,450	71,316	54,200	9,172	242,788	1,741,694	.....
Kitchener & Waterloo S.R.....	4.30	103,521	116	79,062	6,864	17,710	252,139	2,333,414	.....
Kingston, Portsmouth & Catar- aqui E.R.....	6.00	78,306	1,633	64,122	4,736	11,080	199,680	1,193,173	.....
Lake Erie & Northern Ry.....	51.00	348,777	5,602	274,802	100,631	-21,054	603,460	609,693	88,321
Lethbridge Municipal Ry.....	6.67	64,651		74,296	29,212	-38,867	245,130	1,286,722	.....
Levis County Ry.....	11.50	131,253		113,586	29,084	-11,417	294,045	1,457,555	10,600
London & Port Stanley Ry.....	24.50	623,006		475,662	107,947	39,396	1,049,338	1,046,496	424,989
London S.R.....	27.48	567,749	117	487,344	34,541	46,007	1,783,275	14,866,566	.....
Moncton Tramways E. & G. Co.	2.72	13,546	167,819	13,728	14,200	153,236	54,275	290,980	.....
Montreal Tramways Co.....	142.42	11,754,477	50,178	8,535,570	2,942,452	326,633	21,772,700	188,875,989	243,561
Montreal & Southern Counties Ry.....	52.67	489,062	210	488,566	90,830	-90,124	886,822	2,904,143	1,059
Moose Jaw E.R.....	9.00	120,962		108,427	3,705	8,829	446,414	2,005,185	.....
Nelson Municipal Ry.....	2.13	20,823		19,795	4,050	-3,017	61,450	415,625	.....
New Brunswick Power Co.....	14.30	269,336	215,589	294,098	119,422	71,405	827,673	3,719,568	.....
Niagara Falls Park & River Ry.	11.91	218,434	14,450	182,090	39,513	11,280	349,356	1,880,620	.....
Niagara, St. Catharine & Tor- onto Ry.....	61.60	1,070,353		969,763	73,140	27,450	1,637,830	8,365,483	320,867
Niagara, Welland & Lake Erie Ry.....	1.87	25,450	47	26,176	2,416	-3,094	103,828	549,572	.....
Nipissing Central Ry.....	15.37	99,589		121,647	12,342	-34,130	247,714	1,032,026	.....
Nova Scotia Tramways & Power Co.....	12.63	680,262	192,327	571,094	324,639	-23,143	1,856,515	11,062,946	.....
Oshawa Ry.....	9.00	206,129	9,375	142,704	8,213	64,586	153,938	674,740	146,203
Ottawa E.R.....	26.61	1,839,907		1,374,911	109,380	355,615	5,127,864	37,902,198	.....
Peterborough Radial Ry.....	7.64	100,141		107,263	14,754	-21,876	476,951	1,405,788	.....
Pictou County E.R.....	9.20	104,321	129,581	96,102	135,303	2,496	168,673	1,087,200	.....
Port Arthur Civic Ry.....	12.43	195,748	4,471	153,694	63,419	-16,893	624,007	3,178,840	.....
Quebec Ry., Light & Power Co.: Citadel Division.....	19.26	907,274		707,639	2,643	196,992	2,370,088	15,387,497	.....
Montmorency Division.....	28.60	335,646		284,945	7,152	43,548	482,355	2,097,548	.....
Regina Municipal Ry.....	25.59	374,221		298,342	78,663	-2,784	995,304	5,704,531	35,477
Saskatoon Municipal Ry.....	12.63	288,382		231,381	44,424	12,576	840,905	4,555,757	.....
Sandwich, Windsor & Amherst- burg Ry.....	34.76	506,349	8,550	422,893	114,108	-22,103	1,338,204	9,512,822	1,314
Sarnia S.R.....	8.25	94,495		91,982	8,437	-5,924	209,196	1,336,203	13,061
Schomberg & Aurora Ry.....	14.44	32,792		28,756	25,487	-21,451	55,883	52,594	-47,058
Shawinigan Falls Terminal Ry.	3.75	58,905		47,310	17,238	-5,642			.....
Sherbrooke Ry. & Power Co.....	9.39	97,256	91,232	105,062	81,333	2,093	494,175	1,153,716	.....
St. Thomas Municipal Ry.....	7.50	31,931		53,971	7,689	-29,729	138,720	648,251	.....
Suburban Rapid Transit Co.....	17.26	197,846	59,927	185,280	53,246	19,247	850,686	3,633,520	.....
Sudbury-Copper Cliff Suburban E.R.....	7.90	52,193		42,346	7,776	2,069	148,320	693,068	.....
Three Rivers Traction Co.....	7.10	137,273		106,442	34,204	-3,373	463,864	3,146,075	.....
Toronto S.R.....	62.04	5,130,431		4,782,490	1,306,350	-958,408	15,028,245	130,405,686	.....
Toronto Civic Ry.....	10.26	398,700		453,132	88,346	-142,779	1,818,081	23,985,339	.....
Toronto Suburban Ry.....	65.30	423,143		425,127	112,173	-114,157	863,291	4,693,476	14,729
Toronto & York Radial Ry.....	70.45	1,104,470		881,223	235,630	-12,383	1,870,734	11,689,346	41,990
Waterloo-Wellington Ry.....	3.45	10,660		8,212	4,525	-2,077	35,800	173,371	.....
Windsor, Essex & Lake Shore Rapid Ry.....	36.17	322,240		253,952	57,969	10,317	541,245	918,415	56,412
Winnipeg E.R.....	63.71	6,740,717	736,028	2,603,658	1,024,303	848,785	9,611,351	61,515,325	.....
Winnipeg, Selkirk & Lake Win- nipeg Ry.....	38.48	225,053	46,016	176,713	110,389	-6,032	539,838	1,034,043	5,965
Woodstock, Thames Valley & Ingersoll Ry.....	10.20	26,566		21,821	7,786	-3,040	99,180	86,213	.....
Yarmouth Light & Power Co.....	3.00	58,916	1,417	26,722	20,418	13,193	95,200	223,605	.....
	1687.37	\$44,536,832	\$3,651,524	\$35,945,315	\$10,112,035	\$4,037,966	106,044,531	719,305,441	2,285,886
						-1,906,960			
						\$2,131,006			

See explanatory notes on next page.

Notes to Electric Railway Statistics.

The figures in the table on the preceding page are taken from statistics prepared by the Dominion Bureau of Statistics. The following abbreviations are used in the names of railways: E., electric; E.R., electric railway; E.S.R., electric street railway; S.R., street railway. The minus (—) mark in the column for net income or deficit shows that there was a deficit in the operation of the line to the extent of the figures given.

The mileages in the first column of figures are of the first main track, in addition to which the railways reporting have 499.58 miles of second track and 238.79 miles of yard track and sidings.

The Toronto Ry. Co.'s line was acquired by the City of Toronto, Sept. 1, 1921, and, together with the Toronto Civic Ry. lines, was placed under the Toronto Transportation Commission. The figures given in the several columns showing earnings, etc., for these two lines, cover their operation for the 8 months ended Aug. 31, 1921, the figures for the remaining 4 months of 1921 had not been received by the Bureau in time to be included in the report for the year.

Hamilton & Dundas Street Railway to Cease Operation.

The Dominion Power & Transmission Co., we are officially advised, notified the Dundas, Ont., Town Council on Jan. 13, that the electric car service on the Hamilton & Dundas St. Ry. would cease at midnight on Jan. 31. The railway extends from Hamilton to Dundas, with a total length of 6.98 miles, of which 0.20 of a mile is double track; it has also 1.60 miles of turnouts and sidings. The Dominion Power & Transmission Co., which owns the line, is reported to have lost \$91,078 in its operation since 1916. The net loss from operation for the year 1921 was \$17,934.34, and the total corporate loss was \$24,707.59. During 1922, the revenue failed to meet the operating expenses by approximately \$25,000. The company's total capital is \$200,000, of which \$100,000 is common stock and the balance bonds. The reason given for closing down is the continued falling revenue, which has brought about a condition of insolvency, and there appears to be little doubt that the company will be forced to go into liquidation. At the time of writing (Jan. 20), there is no definite information obtainable as to whether bankruptcy proceedings will precede the cessation of operation, whether operation will be entirely discontinued, or whether the shutdown order will ultimately affect only the portion of the line within Hamilton city.

The company is reported to have asked the Dundas Town Council recently for permission to abolish workmen's tickets, which is said to have been refused.

The Toronto, Hamilton & Buffalo Ry. operates a freight service over a portion of the H. & D. S. Ry., from West Hamilton Jct., a short distance outside the city limits, to Dundas, and is reported to do a large business. The electric railway is operated under provincial jurisdiction, and the freight service would, in a way, we presume, come under the Board of Railway Commissioners' jurisdiction. A local report states that if the line is closed down for passenger traffic, the T. H. & B. R. will probably buy such portions of the right of way as are necessary to maintain its freight service.

Project for Hydro Electric Railway from Toronto to St. Catharines Defeated.

Under the provisions of the Ontario Hydro Electric Railways Act, 1914, a number of plans for the construction of electric railways concentrating on Toronto were promoted, the ownership to be vested in the municipalities through which they would be built, and the operation to be vested in the Hydro Electric Power Commission of Ontario. Two of the plans provided for a line to enter Toronto from the west, the junction point of the two being at Port Credit. The first of the two lines was one from Toronto to London, via Port Credit, Milton and Guelph, the majority of the bylaws for which were approved at the municipal elections in Jan., 1916, and confirmed by the Ontario Statutes of 1916, chap. 37. The second of the two lines was to extend from Port Credit via Hamilton to St. Catharines. The municipalities through which it was to pass, with one exception, voted at the annual elections in Jan., 1917, and with one exception approved of the bylaws, which were confirmed by the Ontario Statutes of 1919, chap. 45. The whole question of hydro electric railway construction was referred by the Ontario Government to a committee headed by Mr. Justice Sutherland, as a result of which the Municipal Railway Act of 1922 was passed by the Ontario Legislature. This repealed the Hydro Electric Railways Act, 1914, and the subsequent amending acts, and provided for the construction of municipally owned electric railways on a new basis. Following the recommendation of the Sutherland Commission, it was provided by sec. 29 and its subsections, that the provisions of the act of 1914 and its amendments were to continue in force in regard to the proposal to build an electric railway from Toronto to Port Credit, and from Port Credit to St. Catharines. These railways were to be built under new agreements which might be made between the municipalities and the Hydro Electric Power Commission without the ratepayers' consent, provided the councils of the municipalities interested passed resolutions reaffirming the original bylaws before Oct. 15, 1922. In the event of the municipalities not so reaffirming, or of 15% of the ratepayers petitioning for a revote, the agreements were to be resubmitted to a vote of the electorate. Following is a list of the municipalities interested, arranged in order from Toronto, with the amounts to be provided by debentures:—

Toronto City.....	\$4,240,196
Etobicoke Tp.....	401,333
Mimico Town.....	111,200
New Toronto Town.....	82,350
Port Credit Village.....	345,355
Toronto Tp.....	54,050
Toronto Tp.....	243,087
Trafalgar Tp.....	538,735
Nelson Tp.....	374,812
Oakville Town.....	203,098
Flamboro East Tp.....	266,626
Flamboro West Tp.....	66,669
Burlington Town.....	144,536
Hamilton City.....	5,868,286
Barton Tp.....	284,484
Saltfleet Tp.....	1,002,296
North Grimsby Tp.....	424,077
Grimsby Town.....	101,817
Clinton Tp.....	473,746
Beamsville Village.....	57,469
Louth Tp.....	536,595
Grantham Tp.....	128,280
St. Catharines City.....	623,750

\$16,572,847

Of these municipalities, West Flamboro Tp. did not consent to submit the bylaw in 1917, or since. Saltfleet Tp. defeated the bylaw in 1917, and again

in March, 1919. Following the passing of the act of 1922, resolutions reaffirming the original bylaw were passed by Toronto City, Etobicoke Tp., Mimico Town, New Toronto Town, Toronto Tp., Port Credit Village, Trafalgar Tp., Oakville Town and Beamsville Village, and in these places the bylaw was not resubmitted to a vote. The councils of the following municipalities passed resolutions approving of the agreement, but as 15% of the ratepayers petitioned for a vote, the bylaw was resubmitted: Flamboro East Tp., Burlington Town, North Grimsby Tp., Grimsby Town; Louth Tp., and St. Catharines City. In the case of Barton Tp., which voted in favor of the bylaw in 1917, a section of the township was subsequently annexed to the City of Hamilton, and as this was the portion through which the line is routed, the Government expressed the opinion that it was not necessary for the ratepayers of the township to vote. However 15% of them petitioned that the bylaw be resubmitted, which was done, and it was defeated by 276 votes. The following municipalities also had to vote owing to the failure of the councils to reaffirm the agreement: Nelson Tp., Hamilton City, Clinton Tp., and Grantham Tp.

The voting in the 10 municipalities affected, as well as in Barton Tp., which the Government stated need not vote, took place at the municipal elections on Jan. 1, the results being as follows:—

	For	Against
Nelson Tp.....	157	117
Flamboro East Tp.....	187	268
Burlington Town.....	481	290
Hamilton City.....	5,813	7,035
Barton Tp.....	343	619
North Grimsby Tp.....	204	227
Grimsby Town.....	155	137
Louth Tp.....	216	102
Grantham Tp.....	404	294
St. Catharines City.....	2,049	582
Clinton Tp.....	266	134

The amendments to the Hydro Electric Railway Act, 1914, passed by the Ontario Legislature in 1919, chap. 45, sec. 9, provided that where any municipal corporation named as a party to an agreement for the construction of an electric railway failed to pass a bylaw approving of the agreement, the municipalities approving the agreement could assume the cost of the line through the municipality or municipalities in question, provided the cost of the line therein did not exceed 10% of the total cost of the line. This provision was continued in the 1922 act, except that the liability of dissenting municipalities which might be assumed by assenting municipalities was raised to 15%, instead of 10%. The cost of the Port Credit-St. Catharines section of the line, which was a separate undertaking from the Toronto-Port Credit line, was estimated at \$11,360,363. Under the provisions of the act, the bylaws might be defeated in several municipalities and not endanger the plan, provided the total liability did not exceed 15%, or \$1,704,054.45, and that the other municipalities were willing to shoulder the additional cost. In the voting on Jan. 1, the municipalities defeating the bylaw represented more than 50% of the estimated cost of the line from Port Credit to St. Catharines.

The Hydro Electric Rys. Toronto & York Division is, we are advised, trying a 10-minute service on the Humber-Port Credit line.

Toronto's Voting on Hydro Electric Railways Entrance.

Toronto citizens entitled to vote on money bylaws voted, on Jan. 1, on the following question, under a bylaw passed by the city council, Dec. 4, 1922: "Are you in favor of the hydro radial agreement passed by the city council, Sept. 6, 1922?" This agreement was one of those drawn up in connection with the clean up deal under which the Toronto Ry. Co's power and radial railways interests were acquired by the Hydro Electric Power Commission of Ontario and the City of Toronto. The property passing to the Commission included the Toronto & York Radial Ry's Mimico Division, from the Humber to Port Credit on the west, and the T. & Y. R. Ry's Scarboro Division from the eastern city limits to near West Hill on the Kingston Road. The Commission was interested in the promotion of an extensive plan for the construction of an electric railway from Toronto to Hamilton and St. Catharines, as well as projects for a line east of the city, the first mentioned being the one upon which it was proposed to proceed with construction in the immediate future. The particular question involved in the final clean up negotiations was the entrance of these lines into Toronto. Under the original agreement for the construction of the Toronto-Port Credit-London line, in 1916, the city agreed to provide a right of way for such entrance from the west, and in 1921, it agreed to provide a right of way for an entrance into Toronto of a line from the east. It was generally understood that this right of way would be provided on lands at the waterfront controlled by the Toronto Harbor Commissioners. Following the passing of a resolution by the city council on July 27, 1922, requesting the Hydro Electric Power Commission of Ontario to proceed with the construction of the Toronto-Port Credit line, the negotiations as to the right of way entered the final phase, and a proposed agreement was approved by the council on Sept. 6, 1922, after lengthened negotiations between the city council, the harbor commissioners and the Hydro Electric Power Commission of Ontario. This proposed agreement as submitted to the council, was approved by the city board of control, and by the Hydro Electric Power Commission of Ontario. It provided for the leasing to the H. E. P. C. of certain lands described in detail, and marked on a plan attached, extending from the Humber River, on the west, to Morley Ave., on the east, upon conditions set out in a schedule attached, occupying 15 closely printed pages. The right of way to be granted under the agreement was for a 6-track railway, right along the waterfront, and provision was also made for a right of way for a subway from the waterfront, near Bay St., to the city hall. The proposed agreement was not approved of by the Harbor Commission, and an action was taken by certain ratepayers to enjoin the city from approving and signing it. The court held that the agreement should not be signed without being submitted to the ratepayers to vote on.

The submission of this question interjected a very important matter into the municipal elections, and the campaign, prior to the vote on Jan. 1, was a vigorous and acrimonious one. The retiring Mayor—C. A. Maguire—ran on what was called a pro-radial platform, and was opposed by R. J. Fleming, formerly General Manager, Toronto Ry., on what was termed the anti-waterfront grab plat-

form. Meetings were held all over the city, at which the agreement was discussed from every angle by the mayoral and aldermanic candidates, Sir Adam Beck and others on behalf of the Hydro Electric Power Commission of Ontario, and the other interests involved. On the day of the voting, 23,129 ratepayers qualified to vote on money bylaws answered the question in the affirmative, and 28,832 in the negative, a majority of 5,703 against. Over 80,000 votes were cast for the mayoralty candidate, the largest number ever recorded in Toronto, and Mr. Maguire was re-elected mayor by a majority of 989 over Mr. Fleming. There were a considerable number of changes among the aldermen elected as compared with the 1922 membership, for whereas in Sept. 1922, the agreement was approved by 18 to 10, one member being absent, on account of illness, the new council was claimed to stand 16 for to 13 against the agreement on Jan. 1, and may now be changed owing to a recount replacing S. Ryding, a pro-radial alderman, by W. Baird, on a recount.

At the 1923 city council's inaugural meeting Mayor Maguire, in referring to the vote on the agreement, said, "I regret this decision very much, and I believe the citizens will realize at no distant date that a mistake was made. However, the will of the people must prevail, and it will be carried out to the letter."

Electric Railway Projects, Construction, Betterments, Etc.

Edmonton Radial Ry.—The estimated cost of projected repairs to the tracks for this year is \$71,000.

Hydro-Electric Railways, Toronto & York Division.—Toronto City Board of Control, on Jan. 12, authorized the raising of \$600,000 to be paid to the Hydro-Electric Power Commission of Ontario for betterments, etc., on the Hydro-Electric Railways' Toronto & York Division, formerly the Toronto & York Radial Ry., Metropolitan Division. The betterments, etc., will include a terminal now being built at the city limits, heavier rails to be laid north from Toronto for some 10 or 12 miles; increase in equipment of power house and feeders, and from 10 to 15 additional motor cars.

Kitchener & Waterloo St. Ry.—We are officially advised that about half a mile of double track is being built from Union St. to William St., Waterloo, Ont. (Sept. 1922, pg. 479.)

Montreal Tramways Co.—The Montreal City Council's executive committee has been asked to study a request for a double track line on Iberville St., between Mason and Belanger Sts., as provided for in the contract between the city and the company. (Jan., pg. 36.)

Niagara, St. Catharines & Toronto Ry.—The Board of Railway Commissioners passed order 33,190, Dec. 1, directing the company to relocate its line on Oak and Merritt Streets, Merriton, Ont., in accordance with paragraph 4 of an agreement entered into between the company and Merriton Town Council, July 23, 1914, the work to be started by March 15 and completed by May 1. We are officially advised that the work directed to be done is part of a number of improvements by the management, provided it obtains new franchises from the municipalities. A press report states that

the various improvements contemplated would involve an expenditure of \$1,500,000. (Jan., pg. 36.)

Hamilton St. Ry.—A press report, Jan. 20, states that it is proposed to build an extension to the junction of Sterling and King Streets, in connection with the development of the McKittrick building estates. The McKittrick syndicate will, it is reported, guarantee the company against any loss on the operation of the extension, and the company desires the opinion of the city council before agreeing to build the extension.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry.—

	Nov. 1922	Nov. 1921	5 mons. to Nov. 30, 1922	5 mons. to Nov. 30, 1921
Gross ..	\$891,189	\$877,335	\$4,266,650	\$4,252,802
Expenses	602,735	634,901	3,029,860	3,165,967
Net	288,454	242,434	1,236,790	1,086,835

Calgary Municipal Ry.—A press report states that the total receipts for the calendar year, 1922, were \$880,036.59 and the total expenditure \$885,126.75, a deficit of \$5,090.16, against a deficit of \$6,216.68 for 1921. The total number of passengers carried was 14,767,567, against 15,629,275; the car mileage was 2,907,473, against 2,899,036.

Cape Breton Electric Co.—

	Nov. 1922	Nov. 1921	12 mons. to Nov. 30, 1922	12 mons. to Nov. 30, 1921
Gross	\$61,213	\$63,427	\$625,024	\$699,596
Expenses and taxes	46,496	51,107	550,594	581,834
Net	14,717	12,320	74,430	117,762
Interest ..	5,530	5,681	67,189	68,823
Balance ..	9,187	6,639	7,241	48,939

London & Port Stanley Ry.—Sir Adam Beck, Chairman of the London Railway Commission, which operates this line, is reported to have stated, at the inaugural meeting recently, that serious operating difficulties were encountered in 1923, including the coal miners' strike, and the railway strike in the United States, and weather conditions which had kept the trans-Erie car ferry from operating, the result being a falling off of \$90,000 in freight receipts.

Quebec Railway, Light, Heat & Power Co.—

	Nov. 1922	Nov. 1921	11 mons. to Nov. 30, 1922	11 mons. to Nov. 30, 1921
Gross	\$244,119	\$233,558	\$2,611,227	\$2,595,029
Expenses and fixed charges	222,018	218,991	2,326,719	2,496,014
Net	22,101	14,567	284,508	99,015

Winnipeg Electric Ry.—

	Nov. 1922	Nov. 1921	11 mons. to Nov. 30, 1922	11 mons. to Nov. 30, 1921
Gross	\$483,278	\$481,818	\$4,919,410	\$4,768,916
Expenses ..	324,851	366,823	3,567,386	3,556,087
Net	158,427	114,995	1,352,024	1,212,829
Fixed charges ..	78,007	57,182	731,108	693,920
Surplus	80,420	52,813	620,916	518,909

The Regina, Sask., City Solicitor is reported to have stated that of the 97 collision accidents in which the Regina Municipal Ry.'s cars and motor cars were involved, during the 10 months ended Oct. 30, 1922, 90% were caused by the carelessness of motor car drivers. In two cases the street car motormen were wholly to blame, and in 8 others they were partly to blame. The total damage to the street cars during the period was \$735.82, of which \$290.22 had been collected from the motor car owners.

The Toronto Transportation Commission has ordered 45,000 ties and 103,750 granite blocks recently.

Repair Shops and Stores Building for Toronto Transportation Commission.

The Toronto Transportation Commission has been considering for some time the construction of large repair shops, stores building and auxiliary buildings at Davenport Road and Bathurst St., Toronto, and, as stated in Canadian Railway and Marine World for January, an appropriation of \$1,500,000 was passed by the city council recently, to provide for this work. Tenders for the construction of the main repair shop building and stores building, boiler house and subsidiary buildings, including excavation, concrete, structural steel, masonry, plumbing, heating, ventilating, electric wiring, automatic sprinkler installation and outside fire protection provision, were received to Jan. 18; tenders for horizontal return tubular boilers, boiler settings, underfeed stokers, draft fans, and boiler feed pumps, and installation of this equipment, were received to Jan. 17; and tenders for a complete coal and ash handling plant, including 2 reinforced concrete bins, track hopper, apron feeder, coal crusher, elevator conveyor, flight conveyor, ash elevator, etc., were received to Jan. 22. We are officially advised that it is expected to start construction in the very near future.

The main repair shop building, to be 467 ft. square, will have a steel frame, and brick walls, with concrete foundations, and gypsum roof with sawtooth monitors. A transfer table will be provided across the center of the building, with the repair tracks running at right angles to it. The building will be divided to accommodate a truck and motor shop, forge shop, machine shop, armature shop, erection shop, paint shop and woodworking shop. Track connection to the transfer table will be from both Davenport Road and Bathurst St.

Adjacent to the main repair shop will be a boiler house, 86½ ft. x 44 ft. 8 in., of steel frame, brick wall and concrete foundation construction, divided into a boiler room, and a room for compressors and other machinery. Heat will be supplied from here to all buildings on the property. Near the boiler house will be a coal handling and storage plant of 1,000 tons capacity, the chief units of which will be 2 large cylindrical concrete storage bins. Machinery for handling coal and ashes with the maximum economy will be provided. At the Davenport Road side of the property a 100,000 gall. capacity hemispherical steel water tank will be erected. At the Bathurst St. side a stores building, 302 x 117 ft., of concrete construction, will be built. A basement and 3 stories will be provided at first in this building, but provision will be made to increase its height to 8 stories. This will be the central storage depot for the entire street railway system. An office building, 50 x 72 ft., will also be built, and will be of the steel frame, brick wall and concrete foundation type. All buildings will be sprinklered, and, in addition, a thorough fire protection system will be provided by hydrants, located at strategic points throughout the property.

When these buildings are built and in operation, the paint shop now operated by the Commission at the Russell car house; the body shop, at the northwest corner of Frederick and Front Sts., and the motor shop, south of Front St.,

between Frederick and Sherbourne Sts., can be abandoned. We are officially advised that the Commission hopes to have the new facilities in operation by next autumn.

Since the above was written we have been officially advised that contracts have been let as follows: For construction of repair shop building, stores building and boiler house, John V. Gray Construction Co., Toronto; for boilers, Engineering & Machine Works, St. Catharines, Ont.; for boiler settings, J. H. Wenting, Toronto; for feed pumps, J. T. Hepburn, Toronto; for fans and fan motors, Canadian Blower & Forge Co., Toronto; for stokers, Jones Underfeed Stoker Co. The time for receiving tenders for the coal and ash handling plant was extended to Jan. 31. The total amount involved in all the contracts, basing calculations on those already awarded and estimating the cost of the coal and ash handling plant, is \$1,335,000.

Mainly About Electric Railway People.

Ira P. McNab, Superintendent of Tramways, Nova Scotia Tramways & Power Company, Halifax, N.S., has resigned, and has moved to Calgary, Alta., to enter the Riverside Iron Works' service. He had been connected with the Nova Scotia Tramways & Power Co. since 1916. On leaving Halifax, he was given a chest of silver by the motormen and conductors, a travelling bag by the company's baseball team, a cigarette case by the Technical College Alumni, and cigarettes, cigars and pipes by the building committee of St. Andrews Church.

S. Nelson, track superintendent, Winnipeg Electric Ry., died at Winnipeg recently, aged 53.

J. G. Ramsden, who has been appointed by the Ontario Government as a member of the Hydro Electric Power Commission of Ontario, succeeding the late Fred R. Miller, was born at Thornhill, Ont., in 1867, of English parents, and for some years was engaged in the baking business in Toronto. He has been associated with politics from his early life, and was a Parliamentary candidate in the Liberal interest in 1917, and later Chief Inspector, Indian Affairs Department. He was a member of the Toronto Board of Control in 1920, and was, until recently, a partner in Ramsden & Roxborough, electrical contractors, Toronto. His son, Capt. J. Ramsden, M.C., is member of the Ontario Legislature for Southwest Toronto.

Canadian Electric Railway Association.—Some slight changes have been made in the composition of the committee on accounting of maintenance and depreciation of street railway assets, since information in regard to it was published in Canadian Railway and Marine World for January. The committee is now composed as follows: H. E. Weyman, Manager, Levis County Ry., chairman; W. G. Hewson, Railway Engineer, Hydro Electric Power Commission of Ontario; F. S. Livingstone, Traffic Manager, Hydro Electric Rys., Toronto & York Division; L. Tait, Secretary-Treasurer, London Street Ry., and G. E. Waller, General Superintendent, Dominion Power & Transmission Co. H. E. Smith, Comptroller, Montreal Tramways Co., found it impossible to become a member of the committee, but will give it any assistance in its work that he can.

Electric Railway Passenger Fares.

British Columbia Electric Ry.—The B.C. Legislature has passed an act to regulate passenger rates chargeable by the company. A summary of the provisions of the bill as introduced was given in Canadian Railway and Marine World for January, on pg. 36. In passing through the committee stage, some amendments in details were made. Attempts were made by North Vancouver, Point Grey, and New Westminster municipalities to have special provisions inserted, but the Attorney-General objected, stating that the measure simply provided for the appointment of a commission to investigate, when the company, any municipality or group of residents, complained that unjust rates were being charged, which would not work a hardship on any municipality, but would help matters out by providing a ready means of settling any dispute. He said the right of private bargaining was fully maintained. If the company was not put under this bill it would be under a Dominion charter, and the Dominion always maintained existing rates until there was a demand for a change.

The Burnaby Tp. Council, on Dec. 27, 1922, appointed a committee to interview the company's management respecting fares charged on the Hastings East line.

Calgary Municipal Ry.—Commissioner Graves has recommended the Calgary, Alta., City Council to reduce the fares on the railway for a sufficient period to ascertain whether they will induce increased patronage. Tickets are now sold 4 for 25c, or 18 for \$1, and the suggestion is that they be 5 tickets for 25c.

London St. Ry.—On Jan. 1, the company put on sale slips of 22 tickets for \$1, good between 6 and 8.30 a.m., and 5 and 6.30 p.m. The sale of limited or workmen's tickets was suspended June 14, 1922, when the 5c. fare was put in operation under the provisions of the Ontario Statutes, 1922, chap. 141, sec. 2.

Toronto Transportation Commission.—Mayor Maguire, of Toronto, said in his recent inaugural address to the city council:—"I still hold the opinion which I expressed last year in regard to fares. We should have a 5c. fare. I hope the receipts during the 16 months of public operation will warrant a speedy return to the old rate."

Waterloo-Wellington Ry.—The Ontario Railway and Municipal Board has authorized the company to increase the fare between Kitchener and Bridgeport, Ont., from 5c. to 7c. cash, with 4 tickets for 25c., conditional upon an improved service being put in operation during the early morning hours, so that business people may get to their work in time, and that the cars be heated better.

R. A. Brown, Superintendent Calgary, Alta., Municipal Ry., is reported to be preparing a report on methods of paying fares on the cars. At present passengers pay fares as they enter, but the pay-as-you-leave system in use in Lethbridge, and the dual systems of pay-as-you-leave on outbound cars and pay-as-you-enter on inbound cars are being investigated.

The British Columbia Electric Ry. is reported to have ordered two motor buses, to augment the street-car service in the east end of Vancouver. The cars will have a capacity of 35 passengers each, will be capable of travelling at 25 miles an hour, and are estimated to cost \$7,500 each.

Oshawa Railway Rolling Stock Orders.

The Oshawa Ry., Oshawa, Ont., has ordered 2 double truck, double end, passenger cars from Ottawa Car Manufacturing Co., for delivery in April. They will be of the latest design, 33¼ ft. long, wooden bodies, and steel underframes. It has also ordered an electric locomotive from Canadian Westinghouse Co., of 43 tons capacity, equipped with four type 552 motors, having an output of 75 h.p. each when operated at 600 volts, and of 95 h.p. each when operated at 750 volts; and HLF multiple unit, double end control. The continuous tractive effort will be 9,000 lb., or 11,200 lb. for one hour, and a maximum of 21,500 lb. The motors will be equipped with helical forged steel gears and pinions, and the air brake equipment will be type 14-EL double end control, including 2 type D-3-M compressors. Length between coupler knuckles 32 ft. 7¼ in., length between bumpers or end frames 29½ ft., height over roof 11 ft. 10½ in., total wheel base 22½ ft., wheel dia. 33 in., width over all 10 ft. A switchman's step and rigid drawbar will be fitted, instead of the usual pilot and radial drawbar. The drawbar pull will be transmitted through the cab underframing and center pins, and each driving axle will be equipped with an independently geared motor, the weight of which will be carried partly on axle bearings and partly on the truck frame. All the cab equipment will be easily removable through the doors and windows.

An underframe has also been received from Ottawa Car Manufacturing Co., for an electric locomotive, which the company is rebuilding in its own shops, and increasing its weight from 28 to 40 tons.

Answers to Questions on Electric Railway Topics.

Answers to questions in the American Electric Railway Association's question box have been sent as follows by J. M. Ahearn, Assistant Manager, Ottawa Electric Ry.:—

Life of Commutators.—Have any companies figures as to the life of commutators on their non-interpole motors? Depends on condition, tension of brushes and composition of commutators, etc. Have observed ¾ in. wear in 54,000 car miles.

Axles Cracks.—Has any member company a method of locating cracks or checks in axles other than by the hammer test? Clean well and coat with whitening. When dry, cracks will be quite discernible.

Motor Repair Work.—In connection with car repair work, how do mechanical and electrical failures divide? Our mechanical repairs, including gears, etc., were believed to be about 75% of the failures.

Split Type Motors.—With split type motors, which is preferable, to swing lower half, or to take out hinge pins and lower the bottom half on the pit jack? Our practice has always been to swing the lower half.

Tightening Bearing Shells.—What is the most satisfactory way to tighten bearing shells which have worked loose in the bearing housings? Our practice is to rebore and install oversize bushing. They can be pressed in with a shim.

Guard Rails on Bridges.—What is the practice of member companies with reference to the installation of auxiliary inside steel guard rail on bridges? (b) What weight of rail is used? (c) How

frequently is it spiked to ties? (d) What is the distance between gauge line of running rail and face of guard rail? (e) How many bolts are used at joints? (f) How are ends of rails finished and what distance do they extend beyond each end of bridge? (a) Both running rails paralleled on the inside. (b) and (c) Same as running rail. (d) About 8 in. (e) Full bolted. (f) Tapered. We believe the farther extended, the better.

Cinders as Ballast.—Are any companies using cinder material as a top ballast or a sub-ballast? If so, has its use been found detrimental to the life of the ties, rails and bonds? We use cinders as top ballast, and there has been no noticeable change.

Canadian National Railways Electrification for Toronto District.

Canadian Railway and Marine World for January, gave on pg. 27, details of the Canadian National Rys.' tentative plans for providing an electric railway service into Toronto, Ont., from the east, by utilizing a portion of the Canadian National line between Toronto and Trenton, Ont., now operated as the Orono Subdivision of the Ottawa Division, Ontario District, and the Toronto Eastern Ry. We are advised that E. W. Oliver, General Superintendent, Electric Lines, C.N.R., has made a report on the situation as concerns electric traction east of Toronto, which is now in the C.N.R. management's hands.

During the recent municipal elections in Toronto, when a bylaw to permit entrance of a radial electric railway to be built by the Hydro Electric Power Commission of Ontario, into the city was defeated, the possibility of the C.N.R. furnishing an electric railway service between Toronto and Niagara Falls was widely discussed, and a statement made by Sir Henry Thornton, President, C.N.R., concerning the situation, was published in our January number. We are officially advised that Mr. Oliver has also made a report on a proposed programme of rehabilitation and expansion for the Niagara, St. Catharines & Toronto Ry., but no official information is available as to what investigations have been made with a view to linking up Toronto with Niagara peninsula points by electric railway service to be furnished by the C.N.R. This matter will, however, doubtless occupy the management's early attention.

Toronto Ry. Arbitration.—Mayor Alfred Maguire, in his inaugural address to Toronto's new city council recently, said:—"The arbitrators have not yet given their award determining the value of the Toronto Ry. Co.'s assets taken over by the city on the expiration of the franchise on Sept. 1, 1921. The arbitration began in June, 1921, and in July was adjourned until Sept. 19, on which day the real taking of evidence began. Altogether there were 158 days of sittings, and the matter was gone into thoroughly. The taking of evidence was finally completed on Nov. 29, 1922. The great length of time required to hear the evidence was occasioned largely by the fact that the reproduction value of the property, both on prices averaging throughout three years previous to Sept. 1, 1921, and on Sept. 1, 1921, was put forward strongly by the company, and had to be met by the city. This went into the greatest detail. I hope the making of the award will not be long delayed."

Safety Cars for Ontario Hydro Electric Rys., Essex Division.

The Hydro Electric Power Commission of Ontario has ordered 4 one-man-two-man double truck safety cars for the Ontario Hydro Electric Railways, Essex Division. They will be equipped for double end operation, and will have the following dimensions:

Length over all.....	43 ft. 9 in.
Length over vestibules.....	42 ft. 6 in.
Length over bulkheads.....	28 ft. 9 in.
Width over side sills.....	8 ft. 2 13/16 in.
Width over all.....	8 ft. 5 in.
Height, rail to top of floor.....	2 ft. 7¼ in.
Height, rail to top of roof.....	10 ft. 0¾ in.
Post spacing.....	2 ft. 6 in.
Truck centers.....	20 ft.
Passenger seating capacity.....	52
Weight.....	34,000 lb.
Wheel diam.....	26 in.

As the designation of the cars indicates, they will be suitable for one or two-man operation, and it is the intention to run them as two-man cars during rush hours and as one-man cars at other times. They will be equipped with 4 double doors, one at each corner, and a unique feature will be that the door operation will not only be interlocked with the control apparatus, but also with the brakes, so that when the doors are open, movement of the car will be prevented, not only by the impossibility of getting current to the motors, but also by the brakes being applied. Two trolley poles will be applied. The cars have been ordered from St. Louis Car Co., St. Louis, Missouri. The air brake and electrical apparatus will be supplied by Canadian General Electric Co. and the trucks by Taylor Electric Truck Co., Troy, N.Y. The cars are to be used in local service in Windsor, Walkerville and Sandwich, Ont.

The London & Port Stanley Railway Co's directorate for this year is composed of the following London City Council members: Mayor Weinge, Aldermen Watt, Judd, Greer, Drake, Colbert, Patterson, Burdick and Wilson. The railway, however, is operated by the London Railway Commission, on which there were two vacancies, the term of office of P. Pocock and F. E. Harley having expired. Nine names were submitted for the position at a private preliminary meeting of the council, Jan. 6, when, after several votes, F. E. Harley was re-chosen, and D. Wright was chosen in place of P. Pocock. At the open meeting of the council, Jan. 8, an effort was made to reinstate P. Pocock, but the previous decision was confirmed by 9 votes to 3. At the inaugural meeting of the Commission, Jan. 15, Sir Adam Beck was re-elected chairman, and F. E. Harley, vice chairman. P. Pocock is a member of the London Public Utilities Commission, which has charge of the electric light and power undertaking, waterworks, etc., and at the inaugural meeting of that commission, Jan. 12, was elected chairman of the playgrounds committee.

The Montreal Electrical Commission is reported to have awarded the Montreal Tramways Co. \$27,721.39 for overhead material expropriated by the city in districts 4 and 6, in order to clear the streets of unnecessary wires and place them underground. The wires in question had not been used for a considerable time.

Montreal City Council has appointed a committee to study the tramway situation in the city. The committee was instructed to consider the advisability of allowing traffic in both directions on St. Urbain St., between Ontario and St. Catherine Streets.

The Toronto Suburban Railway's Proposed Sale.

G. R. Geary, K.C., Corporation Counsel, Toronto, made the following report, Dec. 22, 1922:—"The part of the Toronto Suburban Ry. within the city was operated under a franchise which expired Jan. 1, 1921. Under bylaw 8487, passed Aug. 5, 1920, notice was given to the railway of the city's intention to take over the part of the railway operating under the franchise within the city on Sept. 1, 1921, the date of expiry of the franchise. Certain negotiations took place by which in the end Sir Adam Beck was fully authorized to act for the city in relation to the taking over and to negotiate for the purchase of the company's lines. The city also appointed him as its arbitrator to determine the value of the property. The company did not appoint its arbitrator and it was arranged between the company, or the Canadian National Rys., the owners of the property, and Sir Adam Beck, that the arbitration should stand without prejudice to the rights of the parties. As I am given to understand, the portions of the lines in the city were taken over by the city on Sept. 1, 1921, under arrangements made by Sir Adam, and have been operated by the company since that date on behalf of the city and the Toronto Transportation Commission. In the meantime, the negotiations of Sir Adam Beck continued and by report of the Board of Control, adopted in council Dec. 8, 1921, a bylaw was submitted to the qualified electors to provide for and authorize the city to enter into an agreement for the purchase of the Toronto Suburban Ry. Following that, the bylaw was voted on Jan. 1, 1922, and carried by a majority of 2,502. It appears then that the Legislature passed the statute, Ontario, 1922, chap. 35, providing for the acquisition of the Toronto Suburban Ry., and setting out the form of agreement to be entered into. This apparently followed also certain arrangements made on behalf of the city by the Mayor and Sir Adam Beck. The next step of which I have knowledge is that the agreement set out in the statute was passed by the council Nov. 8, 1922. The matter now awaits completion of the agreement between the Hydro-Electric Power Commission and the Canadian National Rys. for the sale of the road to the Commission. When this is completed, the questions of transfer to the city, settling the bonded indebtedness, and so on, will be up for consideration."

During the last few days of Dec. 1922, J. H. Spence, a Toronto lawyer, went to Ottawa, under instructions of Sir Adam Beck, to endeavor to get Sir Henry Thornton, President, Canadian National Rys., to sign the agreement for the sale of the whole of the T.S.R. lines to the Hydro Electric Power Commission, but Sir Henry refused to sign, saying that he would not do so, at least until he had been able to consider thoroughly whether it was desirable to retain the principal portions of them as part of the C.N.R. system, and also to give him time to consider the whole question of electric railway facilities for the Toronto district. The City of Toronto can, however, buy the portions of the lines within the city. As stated above, when the franchise for the city lines expired in Sept. 1921, the city, as successor to the Town of Toronto Jct., gave notice that it intended to take them over, and a valuation of about \$200,000 was put on them.

Since then the C.N.R. has been operating them for the city, and has been rendering monthly accounts for the operating deficits, which, however, have not been paid.

Montreal Tramways Co's 1922 Operations.

Traffic on the Montreal Tramways in 1922 showed some increase over 1921. The increase was in the latter half of the year, an indication of improved business conditions in that period. During the year, approximately 190,000,000 revenue passengers were carried, an increase of about 1,000,000 over 1921. There were 70,000,000 non-revenue passengers carried, including transfers and other free passengers.

The average fare for each revenue passenger was 6.08c, which would indicate a total passenger revenue of approximately \$11,500,000. In the uniform tariff territory 4.33% of the passengers pay 7c cash; 78.70% pay 6½c; 14.85% pay 6c, and 2.13% pay 3 4/7c.

During the peak load period of each day, between 5 and 7 p.m., there are 800 cars in operation on the city streets; the cost of heating and lighting the cars is over \$120,000 a year; the cost of sweeping and washing them is over \$100,000 a year; and the removal of snow costs approximately \$250,000.

During the year the company spent about \$1,500,000 on maintenance of tracks and roadways, renewals, betterment and extensions. It is anticipated that a corresponding amount will be expended during 1923 for the same purpose. While in regard to extensions to the system tentative plans have already been made, it is too early to disclose the same, as the city's plans for street improvements have yet to be announced.

Winnipeg Electric Railway Franchise Extension Negotiations.

The question of what will be done in connection with the tentative agreement arranged between the Winnipeg City Council's public safety committee and the Winnipeg Electric Ry. Co., has not been definitely settled. The 1922 council, on Dec. 7, gave a second reading to a bylaw approving of the agreement, and left it to the new council to deal further with it. The municipal elections resulted in S. J. Farmer, independent labor candidate, being elected mayor, largely on a proposal to submit the agreement to a popular vote. He is reported to have said, in his inauguration address, that the proposed extension of the franchise was not approved and should not be proceeded with, and that the principle of municipal ownership of public utilities was approved and on no account should be jeopardised.

The matter of providing a bus service in certain districts of the city was raised at a recent council meeting, and was brought up at a meeting of the public safety committee, on Jan. 10, by a letter from A. W. McLimont, the company's vice president, in which he said the suggestion for putting on buses in the areas mentioned was involved in the negotiations which had been proceeding for some time between the city and the company, and until the course of these negotiations was known, the company could not reasonably be expected to deal with the matter piecemeal, or otherwise than as part of the negotiations.

Ottawa Electric Railway Franchise and Purchase Questions.

Ottawa ratepayers qualified to vote on money bylaws, voted on Jan. 1, on the question: "Are you in favor of the corporation purchasing all the property and assets of the Ottawa Electric Ry. Co. at \$4,500,000, plus the cost of any capital expenditure incurred on and after July 31, 1922, and any other necessary expenditures, not to exceed in all \$75,000, to be operated by an independent commission?" The result of the vote was: Against purchase, 3,569; for purchase, 3,563. Majority against, 6.

The general body of voters were asked to vote on the following question on the same day: "Are you in favor of the corporation granting the Ottawa Electric Ry. a service-at-cost franchise agreement for 20 years from May 1, 1923, on the terms and conditions set out in the draft agreement, a synopsis of which was published in the city newspapers of Dec. 11, 18 and 26, 1922?" A summary of this draft agreement was given in Canadian Railway and Marine World for January. The result of the vote was as follows: Against the agreement, 9,289; for the agreement, 4,930. Majority against, 4,359.

The city council, on Jan. 8, decided to apply for a judicial recount of the votes recorded, on the purchase question, for which County Judge Mulligan made an order on Jan. 9. He commenced the recount on Jan. 17 and completed it on Jan. 19, the result being that the adverse majority was increased from 6 to 48.

Canadian Railway and Marine World is informed that there are a great many people in the city who looked upon the matter as a vote on a money bylaw, whereas it was simply a plebiscite, restricted to property owners and denying them the right, which they possess on ordinary money bylaws, to vote in every ward in which they own property. If the recount had resulted in showing a majority in favor of the purchase, the city would have had to apply to the Ontario Legislature for authority to issue \$4,500,000 of debentures to make the purchase. Whether this authority would have been obtained is a doubtful matter, as during the 1922 session the Legislature criticised the action of the city council very severely for constantly asking permission to borrow money, instead of obtaining authority from the property owners in the form of a money bylaw.

As the city is now not in a position to accept the company's offer to sell at \$4,500,000, or to give the necessary notice to take over the property, under the terms of the franchise, by Feb. 13, it is highly probable that the franchise will be automatically renewed for 5 years from Aug. 13 next. Such a renewal will hardly allow the company to make any extensions of lines, although it is possible that some additional rolling stock will be added.

Manitoba Power Co., which is controlled by Winnipeg Electric Ry. Co., put into operation on Dec. 28, 1922, the first unit of its new power plant at the Great Falls of the Winnipeg River. The total capacity will be six units of 28,000 h.p. each, a total of 168,000 h.p. The present construction will provide 2 units of 28,000 h.p. each, of which the first is being operated. This additional power will enable the Winnipeg Electric Ry. to close its steam plant, and so reduce operating expenses.

Underground Railway Proposed for Montreal.

Montreal City Council adopted a resolution recently, without discussion, authorizing the Executive Committee to consider the question of establishing underground tramway lines and the means to be taken to bring the project to a successful issue. The matter was first considered in 1914, the estimated cost then being about \$500,000 a mile. It is stated that this was a low figure for construction even at the time, while the present cost of such lines is put at from \$750,000 to \$1,000,000 a mile. The plan which those interested in the project are considering is for the construction of such underground lines as will relieve the present crowded condition of the surface cars from the Court House, along St. James St., to Bonaventure station, thence to Windsor St., to St. Catherine St., along that street to St. Denis St., and down St. Denis St. to connect with the downtown lines. It is claimed that the present is an opportune time to begin the study of the question, as it will take several years to arrange all the preliminaries.

Toronto Terminals Hydro Electric Railways, Toronto & York Division.

As stated in Canadian Railway and Marine World for Jan., pg. 35, the Toronto & York Radial Ry. has passed under the control of the Hydro Electric Power Commission of Ontario, and the former Metropolitan Division is being operated as the Hydro Electric Railways, Toronto and York Division. As stated in a preceding number, the line now starts from Toronto's northern city limits, the route within the city limits on Yonge St., where its tracks were located formerly, now being occupied by the Toronto Transportation Commission's lines. Consequent on the moving of the Toronto and York Division terminal to the northern city limits, the necessity arose for new terminal facilities, which are being provided east of Yonge St., adjacent to the Toronto Transportation Commission's loop at Glen Echo Road, and a concrete platform 352 ft. long, and varying from 27 to 36 ft. wide, has been provided as a passenger interchange facility between the Toronto Transportation Commission's tracks and those of the Hydro Electric Rys. Toronto and York Division. An umbrella shelter roof, 18 ft. wide at the eaves, covers the platform for 150 ft. of its length. At the northwest end of the platform, a station is being built, of buff colored tapestry brick, with concrete foundations, the building being partly of one story and partly of two story construction. The first floor will contain a waiting room, ticket office, conductor's office and registration room, baggage room, and lavatories, and in the upstairs of the two story portion will be offices for the Superintendent and Dispatcher, and staffs.

To the north of the station and interchange platform, a building containing a car repair shop, freight house and auxiliary shops is being put up. It is of steel truss and brick construction, and the car repair shop portion, to be served by 3 tracks, will have a continuous pit, 4 ft. 8 in. below track level, the tracks to be supported on reinforced

concrete piers. At the north side of the car repair shop, will be a blacksmith shop, machine shop and carpenter shop, and below the carpenter shop and machine shop portion will be a basement, which will contain the boilers and coal storage facilities, and above the machine and carpenter shops will be a second story containing the armature shop. The building will be served by a travelling hoist, arranged so that heavy material may be transported direct from the car repair shop to the armature shop, and vice versa. The freight shed portion of the building will be served by trackage parallel to that leading to the repair shop.

The concrete interchange platform and umbrella shelter, being a joint facility, was provided jointly by the Hydro Electric Rys. and the Toronto Transportation Commission, actual construction of the platform being done by Toronto Transportation Commission's forces, and the umbrella shelter by the Metallic Roofing Co. The station and repair shop buildings, however, and the trackage to serve them, are purely Hydro Electric Rys.' facilities. The contract for the station and repair shop buildings, which were designed by J. C. Krumm, Designing Engineer, Hydro Electric Power Commission of Ontario, Railway Department, was secured by Sullivan & Fried, Toronto, and construction is well advanced. It is expected that the new facilities will be in use early in the spring.

Electric Railway Notes.

Montreal & Southern Counties Ry. has received 2 motor and 2 trailer cars from Ottawa Car Manufacturing Co.

London, Ont., aldermen are reported as not being satisfied with having passes over the London & Port Stanley Ry. for themselves, but as desiring them also for their wives.

The Toronto Transportation Commission, as a convenience to the public, has transferred its lost article office to its head office building, Yonge and Front Sts., from the Lansdowne car house, which was a most inconvenient location established by the Toronto Ry. Co.

Montreal Tramways Co. is reported to have been asked by the Montreal Motorists' League to cut out some of the stops made by its cars in residential and business districts, and to direct that passengers leave the cars by the front door only. It is claimed that this would enable the traffic to be speeded up.

The London Railway Commission, operating the London & Port Stanley Ry., is reported to have approved the Toronto Transportation Commission's suggestion to seek legislation compelling claimants for damages to report accidents within seven days. The L. & P. S. Ry.'s Manager is said to have mentioned one case in which the claim had not been presented until seven months had elapsed.

Canadian Railway and Marine World for Sept. 1922, gave illustrated descriptions of additional rolling stock ordered by the Toronto Transportation Commission, consisting of 50 motor cars and 100 trailers from Canadian Car & Foundry Co., Montreal, and 50 motor cars from Ottawa Car Mfg. Co., Ottawa. We are officially advised that at Jan. 22, 50 motor cars had been received from Canadian Car & Foundry Co.

The Winnipeg Electric Ry. has called attention to the fact that during the

summer, when people can motor, cycle or walk at will, the company's cars carry 130,000 passengers a day, but in the winter, the average number carried is 220,000 a day, to provide for which the company has to maintain a large quantity of rolling stock which is revenue producing only in winter, and to operate it when operating costs are at the highest.

Walkerville, Ont., Brewing Co., some months ago, was fined in the Windsor, Ont., police court, under the Liquor Carriage Act, for shipping beer over the Windsor St. Ry., one of the electric lines operated as the Hydro-Electric Rys., Essex Division. An appeal was made to the county court, and Judge J. J. Coughlin gave judgment at Sandwich, Ont., Jan. 9, that the act was ultra vires, and therefore allowed the appeal, and dismissed the police magistrate's finding.

The Fort William Utilities Committee and the Port Arthur Public Utilities Commission held a joint meeting at Port Arthur, Ont., Jan. 17, to discuss a number of matters affecting the electric railways owned by the twin cities. The Fort William committee suggested the adoption of a 10-minute schedule on the line between the two cities, instead of the present 13-minute one; that employees' wages be raised, and that the cash fare between the two cities be increased to 10c. The first and the last of these matters were to be considered further at a subsequent meeting, and the managers of the two lines were instructed to meet the men in regard to wages and report at the next joint meeting.

Hydro Electric Railways, Toronto & York Division.—Sir Adam Beck, Chairman, Hydro Electric Power Commission of Ontario, is reported to have stated, in speaking at Aurora on Jan. 20, that the following improvements were being considered in connection with the taking over of the Toronto & York Radial Ry.'s Metropolitan Division, viz.: a 100-ft. highway from Toronto to Mulocks Corners, by the addition of 3 ft. to east side, the highway to be illuminated for that distance; reservation for double track trolley lines, with safety zones for passengers and parcel freight; two-way traffic road surface to be built as soon as warranted; sidewalks for pedestrians; high level steel viaduct at York Mills; larger cars of modern type to be run on limited schedule during rush hours; commutation fares to promote travel; mail boxes on through cars.

Toronto Railway Arbitration.—The arbitration proceedings to determine the amount the City of Toronto shall pay for the Toronto Ry. Co.'s property, which it took over on Sept. 1, 1921, continued intermittently during October, the sittings being devoted to hearing counsel's arguments. The date at which the arbitrators are to issue their award has been extended to Dec. 1, and it is probable that a further extension will have to be made.

New Brunswick Power Co.'s Proposed Sale.—The St. John, N.B., City Council was advised Jan. 2, by Sanford and Harrison, solicitors for holders of the company's 1st and 2nd preferred stock, that the offer made Dec. 15, 1922, to sell the company's property on the basis of a valuation of \$3,089,000, was withdrawn.

Stratford, Ont., City Council is reported to have asked the Hydro Electric Power Commission of Ontario to send an engineer there to look over the city and advise as to the possibility of establishing a trackless trolley service there.

Marine Department

St. John, N.B., Harbor and Drydock Work.

The St. John Drydock & Shipbuilding Co. has, in response to Canadian Railway and Marine World's request, furnished a report on its work, during 1922, at Courtenay Bay, St. John, N.B., as follows:—

Breakwater—During the spring and early summer, the finishing touches were given the 2,500 ft. breakwater extension, in the shape of a final trimming of the channel slopes, and the application of the finishing layer of large cover stone that now presents a solid and immovable barrier to the southerly and easterly gales, which, prior to the building of the breakwater, made Courtenay Bay seem only part of the open Bay of Fundy. Nothing remains to be done to complete this protection except the installation of a lighthouse at the breakwater head.

Dredging of Channel and Basin—Since the early spring the two dredges, Tornado and Leconfield, operated day and night, reducing the entrance channel and turning basin to their full dimensions and final grades. At the close of the 1922 dredging operations, which was marked by the dismantling of the Tornado for the winter, the entrance channel was fully completed, from its junction with the turning basin to a point only about 2,500 ft. from the main channel to St. John harbor. This remaining 2,500 ft. of the entrance channel will be completed to the main channel during next summer, and for this purpose the ladder dredge Leconfield will be re-equipped and strengthened during the winter, to facilitate its handling this part of the remaining dredging.

The projected turning basin at the entrance to the drydock has materialized into a fully completed deep water harbor 2,000 ft. or more in length and breadth, in which ships drawing up to 32 ft. may lie with perfect safety at all stages of the tide. Less than a year ago the first oil tanker entered Courtenay Bay, and docked at the oil wharf, after waiting a specially favorable high tide for this, then generally considered, very hazardous passage. On Dec. 11, 1922, the tanker Azov steamed into the bay and came to anchor in the basin, with no thought of favorable tides or winds. This will be her harbor between trips south for fuel oil during the winter.

Only a short barrier of some 500 ft. now divides the turning basin from the drydock, and two steam shovels and a force of men are removing the most difficult portions of this divide, some 18,000 yds. of rock inside the cofferdam enclosing the drydock. As this operation is one not materially affected by frost conditions, work will proceed throughout the winter, so that with the arrival in the spring of suitable dredging weather there will only remain a few months operations with the hydraulic dredge Tornado to completely remove this portion of the uncompleted drydock entrance, and so bring the waters of the bay up to the face of the drydock.

The 1922 dredging operations in figures represent the removal of over 2,000,000 cubic yards of material from the entrance channel and turning basin, of which 900,000 cubic yards were towed out to sea in scows, and the balance pumped to the seaward side of the breakwater,

where it has formed an invaluable aid to the breakwater itself and safeguard to the Independent Oil Co's tanks and properties. The two dredges provided steady employment for about 200 men for the last nine months of the year.

Before beginning dredging operations last spring the hydraulic dredge Tornado was converted into an oil burner. The results obtained from this change, after a trial of nine months, have, in increased output and general efficiency, more than justified the expense involved. In addition, two large powerful tugs, the Margaret A. Hackett and the Florence, were added to the dredging fleet during the year, greatly increasing the overall efficiency of the dredging organization.

Dominion Marine Association.

Honorary President, A. A. Wright, President, Tidewater Shipbuilders, and Vice President and Managing Director, Davie Shipbuilding & Repairing Co., Montreal.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Montreal.

First Vice President, Hon. L. C. Webster, President, Webster Steamship Co., Montreal.

Second Vice President, G. J. Madden, George Hall Coal Co. of Canada, Ogdensburg, N.Y.

Executive Committee, The President, First and Second Vice Presidents, and W. E. Burke, Canada Steamship Lines, Montreal; Yvon Dupre, Sincennes-McNaughton Line, Montreal; M. J. Haney, Canada Steamship Lines, Toronto; A. E. Mathews, Mathews Steamship Co., Toronto; W. J. McCormack, Algoma Central Steamship Co., Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; John Waller, Keystone Transports, Montreal; Honorary members, L. L. Henderson and A. A. Wright, Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

Drydock—At the end of May, 1922, two 1-yard concrete mixers started on the construction of the concrete work of the drydock. This operation was continued without intermission throughout the summer and autumn, till, with the pouring during the first week of December of the roof of the pumping station, the outer 600 ft. division of the drydock was completed. This portion of the dock includes the dock entrance, across which will be placed the caisson, when preparing to empty the dock after a ship has been placed therein; also the pumping station, which forms an integral part of the dock wall and where will be installed in March three 48 in. centrifugal pumps electrically operated, which will be capable of emptying the whole dock in about three hours. These pumps, with their 750 h.p. motors, and smaller auxiliary pumps, are being made by Goldie & McCulloch Co., of Galt, Ont., and will be ready for shipment to St. John by the end of February. The suction rings and discharge valves are already incorporated in the concrete of the pumping station, together with the structural steel

girders for supporting the main and auxiliary motors. There are also incorporated in the entrance walls of the dock and in the foundation of the pumping station the cast iron sluice gate valves, with which the filling and emptying of the dock will be regulated. The larger of these, the emptying culvert gate valves, are 8 ft. wide and 10 ft. high and each gate weighs over 11 tons. All will be electrically operated and this equipment will be installed early this year.

In addition to the above, a tunnel has been provided throughout the length of each wall, with a series of electrical conduits alongside. This tunnel and conduit will provide the means of distributing such essentials as compressed air, water and electrical energy to all points about the dock, as well as electric current to a series of flood lights, for which recesses have been provided in the face of each wall near its top.

Similarly included in the walls now erected, is a complete and continuous sewerage system, to which a docked vessel can make direct connection, flushed by a constant flow of sea water from outside the dock, and discharging into a special well to which will be connected the auxiliary dock pumps which will discharge this sewerage into the bay. This latter feature of the dock equipment will eliminate the inconvenience and expense experienced recently at the new South Boston drydock, when the White Star liner Majestic was docked there, and it was found necessary to send a large proportion of her crew of 1,000 ashore and accommodate them at hotels in the city while the ship remained in drydock, as the ship's waste discharges had all to be closed, the drydock lacking facilities for receiving and disposing of such sewerage and waste water. Additional equipment equally as necessary as the above, such as ladders, manholes, mooring rings and caisson anchorages, have been fully provided for in the work now completed.

Across the dock entrance and in the specially granite lined stop, is now being assembled the steel floating caisson, by which the entrance of the drydock will be closed when emptying the dock. The Dominion Bridge Co., of Montreal, began the erection of this caisson early in September and already has it assembled for half its full height. Shipments of steel for this have been arriving at the rate of about a car a day since September, and now all the required steel is on the ground. It is expected that the caisson will be completed about the end of February, and this will represent the continuous work of some 30 steel workers for six months or more, and the handling of 1,600 tons of steel into place. The pumping equipment for operating the caisson, manufactured by Goldie & McCulloch Co., has been delivered.

Outside the drydock proper and forming the entrance thereto, have been built the concrete substructure of the fitting-out and lay-to berths and caisson berth. These will be ready by March to receive the wooden superstructures which will form the wharves and which will require in excess of 1,000,000 ft. of square timber. Erection of the timber work will be under way in April.

Summarizing the year's progress on the

construction of the drydock since May, 1922, 700 ft. of the 1,150 ft. drydock have been built, representing the handling of about 60,000 yards of gravel and some 300,000 bags of cement, in addition to 100 or more tons of steel; a considerable proportion of the dock equipment has been installed and the floating caisson provided for the dock entrance. An average force of about 250 men was employed throughout the summer and autumn, with employment continuing through the winter of about 100 men on the entrance excavation. The progress made during 1922 indicates that it is reasonably fair to anticipate the completion of the whole drydock by next autumn.

Shops—In addition to the major operations already mentioned, distinct progress has been made with the drydock repair shops. A composite concrete and structural steel machine shop, 80 x 140 ft., has been completed on the north side of the drydock and this building is equipped with electrically operated 15-ton crane, 2 large vertical boring mills, a horizontal boring mill, radial drill, key seating machine, slotting machine, 30-ft. planer, as well as large engine and shafting lathes. This shop will be put in operation during the winter. A second building, to form the joiner shop, store house and mould loft, 100 ft. square, is under construction and will be ready for the reception of its equipment, now on the ground, in Jan., 1923. The balance of the shop buildings will be erected next summer; winter conditions preventing further building construction now, but the bulk of the machinery and equipment for them, consisting of plate rolls, double and single ended punch and shears, angle shears, gate shears, steam hammers, coil furnaces, rivet machines, building slabs, overhead shop cranes and

boilers and turbo-generators for the dock power station, are on the work and will be installed and ready for operation with the completion of the drydock at the end of 1923.

The construction of a 2,000-ton marine drydock, as an adjunct to the main dock, for handling smaller ships, is being negotiated for, and it is anticipated that this dock will be available for use even before the large drydock.

The general direction of these operations has been under the company's Managing Director, D. S. Pratt, of Midland, Ont., with F. M. Ross, Local Manager, assisted by E. G. Cameron, Chief Engineer; V. S. Chestnut, Resident Engineer; B. Allen, Field Engineer; A. F. Foote, Mechanical Superintendent, and Capt. Sullivan, Dredging Superintendent. McGuire & Cameron have been retained by the company as concrete specialists to direct the construction of the drydock.

Most of the work accomplished in 1922 was done by the St. John Drydock and Ship Building Co., direct, except that the Bedford Construction Co. did a small quantity of rock excavation as subcontractors, and J. A. Grant & Co., of Montreal and St. John, erected the two shop buildings. As stated above, C. D. Maguire and N. K. Cameron were retained to manage the concrete operations on the drydock.

Canal Statistics for November, 1922.

The Dominion Bureau of Statistics Transportation Branch has issued the following summary for Nov., 1922:—

Sault Ste. Marie.—Traffic through the Canadian and United States locks for Nov., 1922, was almost three times as

heavy as for Nov., 1921. Wheat shipments increased 21,777,334 bush., and other grains 4,760,487 bush.; the main increase was in iron ore, which jumped from 383,302 tons in Nov., 1921, to 3,660,302; and soft coal, which was 474,441 tons in Nov., 1921, against 2,454,736 tons in Nov., 1922. Anthracite coal shipments also almost doubled.

Welland.—Total traffic increased over 44%, due almost entirely to increases in shipments of wheat, which totalled 231,362 tons, or 7,712,000 bush. Soft coal shipments decreased 28,210 tons for the month, and 471,008 tons for the season, the total to Nov. 30 being 282,979 tons, against 753,987 tons in 1921.

St. Lawrence.—Wheat shipments were more than treble what they were during Nov., 1921. The total for Nov., 1922, was 244,761 tons, or 8,158,700 bush., and for the season, to Nov. 30, 58,411,300 bush., against 2,603,900 bush. and 28,362,500 bush. for the same respective periods in 1921. Anthracite coal increased from 17,864 tons in 1921 to 77,724, and bituminous coal increased from 88,273 tons to 132,038. For the season, bituminous coal shipments aggregated 565,692 tons, against 756,899 tons for the same period in 1921. Total traffic for Nov., 1922, increased from 333,722 tons to 574,741, or 72%.

Tide Tables.—The Marine and Fisheries Tidal and Current Survey, Ottawa, has issued two books of tide tables for 1923, one including the river and gulf of St. Lawrence, the Atlantic coast, Bay of Fundy, Northumberland and Cabot Straits; the other including Fuca Strait, the Strait of Georgia and the northern Pacific coast, with data for slack water in the navigable passes and narrows. Both also contain information on currents.

Ships Registered in Canada in October and November, 1922.

In compiling the following lists of ships registered, steamboats and motorboats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, n.h.p. etc.	Owner or Managing Owner
150792	Athabasca River.....	Winnipeg	McMurray, Alta.....1922	147.5	35.6	5.9	866	546	15 Pa.	Hudson's Bay Co., London, Eng.
140270	Bayersher (1).....	Montreal	Toledo, Ohio.....1910	228.2	40.0	15.0	1,430	830	97 Sc.	Interlake Navigation Co., Montreal.
140405	Baysona (2).....	Montreal	Toledo, Ohio.....1902	211.7	40.1	13.0	1,367	795	88 Sc.	Interlake Navigation Co., Montreal.
150488	C. A. Cole.....	Kingston, Ont.	Chaumont, N.Y.....1922	61.8	15.5	6.6	57	7	13 Sc.	C. W. Cole, Picton, Ont.
150613	Coyote.....	Quebec, Que.	Sorel, Que.....1913	39.2	8.4	3.8	9	7	35 Sc.	J. L. Lachance, Quebec, Que.
150823	Edward L. Strong.....	Montreal	Three Rivers, Que.....1922	250.7	43.2	18.0	2,052	1,225	150 Sc.	Fraser Brace, Ltd., Montreal.
150820	Frank A. Augsburg.....	Montreal	Three Rivers, Que.....1922	251.2	43.1	18.1	2,051	1,221	151 Sc.	Fraser Brace, Ltd., Montreal.
146135	S.N.A. 1 (3).....	Toronto	Ecorse, Mich.....1914	250.1	43.0	17.1	1,729	1,074	179 Sc.	Port Colborne & St. Lawrence Navigation Co., Toronto.
150565	Trebla (4).....	Victoria	San Francisco, Cal.....1868	130.0	31.2	10.4	344	204	46 Sc.	A. Berquist, Victoria, B.C.
141680	Trontolite.....	Toronto	Victoria, B.C.....1922 Seattle, Wash.....1917	420.8	57.0	31.5	7,115	3,943	2,400 Sc.	Imperial Oil, Ltd., Toronto.

(1) Formerly Port de Caen, and Erwin L. Fisher. (2) Formerly Port de St. Malo, and Usona. (3) Name since changed to Benmaple. (4) Formerly Santa Cruz.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
150863	Dredge Stewart.....	Ottawa, Ont.	Dredge	Chipawa, Ont.....1922	100.0	36.0	8.9	292	292	E. O. Leahey & Co., Ottawa, Ont.
150759	F. & F. No. 1.....	Vancouver, B.C.	Scow	North Vancouver, B.C.....1922	78.3	28.1	7.2	131	131	G. H. French, Vancouver, B.C.
150564	G. Q. L. 7.....	Victoria, B.C.	Scow	Victoria, B.C.....1922	89.4	34.0	9.0	221	221	G. P. Roberts, Victoria, B.C.
150762	K. 58.....	Vancouver, B.C.	Scow	Eburne, B.C.....1922	91.2	34.1	9.2	241	241	S. S. McKee, Vancouver, B.C.
150757	K. V. Barge No. 1.....	Vancouver, B.C.	Barge	Dog Lake, B.C.....1922	145.4	36.5	5.8	263	263	Kettle Valley Ry. Co., Montreal.
150794	L.B.S. & G. Co. No.22.....	Winnipeg	Scow	Winnipeg.....1922	132.0	32.0	7.6	243	243	Lake Bar Sand & Gravel Co., Winnipeg.
150761	M. B. D. No. 4.....	Vancouver, B.C.	Scow	Vancouver, B.C.....1922	89.9	32.0	8.8	214	214	J. K. McKenzie, Vancouver, B.C.
150763	McB. No. IV.....	Vancouver, B.C.	Scow	Vancouver, B.C.....1922	92.0	34.0	8.5	223	223	T. G. McBride, Vancouver, B.C.
138659	Pictonian (1).....	Pictou, N.S.	Schr.	Hammelwarden, Germany.....1922	114.4	22.3	9.3	243	202	Thomas Cantley, New Glasgow, N.S.
150520	R. F. No. 8.....	New Westminster, B.C.	Barge	Marpole, B.C.....1922	87.8	31.2	8.8	214	214	R. Fenton, New Westminster, B.C.
150568	Sadie No. 20.....	Victoria, B.C.	Scow	Victoria, B.C.....1922	100.0	34.0	9.3	257	257	Victoria Tug Co., Victoria, B.C.
150498	Vilda A.....	Parrsboro, N.S.	Schr.	Port Greville, N.S.....1922	82.8	24.6	8.0	110	98	W. O. Allen, Port Greville, N.S.

(1) Formerly Alda.

Building of Second Drydock at Esquimalt.

Work on the construction of the new Dominion Government drydock at Esquimalt, B.C., four miles from Victoria, was commenced in March, 1921, and rushed as quickly as possible until the end of March, 1922. The principal work done during that period was the dredging of all the over-lying material on the site of the drydock, entrance channel and landing wharf; the building of a loose rock cofferdam to enclose the inner half of the drydock, the cofferdam being made water-tight by a clay mat on the outer face, protected from wash by a timber breastwork; the excavation of a large portion of the enclosed area; the excavation of site for pumping machinery and machine shops; the reclaiming with waste material of about seven acres of land adjacent to the landing wharf; and the construction of five of the timber and concrete cribs intended for the landing wharf.

As no funds were available for carrying on the work after March 31, 1922, it was suspended until July, when Parliament authorized the resumption of the work and it has been prosecuted steadily since then. The area inside the inner cofferdam has been excavated to line and grade, and a large cavity in the site, reaching to a depth of about 30 ft. below the sub-grade of the dock floor has been filled with concrete; five of the landing stage cribs have been placed in position on the rubble mound built to receive them; the connecting spur track from the Esquimalt & Nanaimo Ry. main line to the dock site has been laid; and the entrance has been built. The unwatering of the area enclosed by the outer cofferdam is now proceeding and on the completion of the pumping the dividing wall between the inner and outer areas will be removed and the grading of the outer area will be proceeded with, preparatory to the commencement of the construction of the walls and floor of the dock.

The completed dock will have a total length of 1,150 ft.; a top width of 135 ft. and a bottom width of 125 ft.; 30 ft. of water on entrance sill at l.w.o.s.t. and 40 ft. on sill at h.w. It will be provided with two intermediate caisson stops respectively 400 ft. from outer and inner ends, and one extra caisson to be used in either of the intermediate stops, as may be required. The dock will be of concrete, with granite sills, altars, copings, etc. The emptying and filling will both be done through a tunnel, on account of the arrangement of the dock into sections. All pumps and machinery will be electrically operated, there being already a line with a capacity of 60,000 volts built to the work, on which 12,000 volts are now carried, to operate the compressors. It is expected that the dock will be ready to receive ships some time in 1925. Its total cost will be between \$6,000,000 and \$7,000,000.

The Dominion Public Works Department invited tenders, for pumping and other machinery for the drydock, to be sent in by January 15, but extended the date first to January 31, and then to February 15.

A Victoria press report of Jan. 3 stated that, during heavy weather, about 200 of the 500 ft. of the outer cofferdam collapsed, and was carried away, and that it was estimated that its rebuilding would cost about \$50,000.

Salvaging the s.s. Guerrero.

The salvaging of the Mexican States Line's s.s. Guerrero, by the Pacific Salvage Co.'s s.s. Algerine, of Victoria, B.C., was mentioned in our last issue. The actual operations were made more interesting, by the fact that other salvage companies had refused to undertake the task, owing to the peculiar conditions obtaining in the neighborhood of Mazatlan, Mexico, where the ship was ashore, and that the contract was placed with a company situated some 2,200 miles from the wreck. The Algerine left Victoria, B.C., Oct. 21, and arrived at Mazatlan Oct. 30. The Guerrero then had a list to port of about 20 deg., and was lying in a bed of sand, with water washing her at both ends, and a sand spit forming at low tides, on the landward side. Gasoline pumps were installed immediately to clear the hull of water and oil, and fresh water for the boilers was obtained from Mazatlan, about 5 miles distant, at \$5 a ton. This difficulty was overcome later by tapping a swamp in the vicinity and pumping water to the ship. Lines were eventually attached to the ship, and at high tides she was gradually hauled off, the first movement being made Nov. 6, and she was floated in 6 fathoms of water Nov. 16, after innumerable difficulties had been overcome. Temporary repairs were made to the hull bottom, rudder, propeller, boilers and engine, and she proceeded to Mazatlan, where she was supplied with fuel oil, obtained by the Algerine from Manzanillo. She later proceeded to San Pedro, accompanied by the Algerine, where arrangements were made for permanent repairs to be done at San Francisco. The Algerine returned to Victoria Dec. 9. The salvage work was in charge of T. W. Allan, Superintendent, Pacific Salvage Co. The Guerrero was formerly H.M.S. Dianthus, one of the mystery ships used in connection with dealing with German submarines during the war, and was owned by the Clan Line, of Scotland, which leased her to the Mexican States Line.

Transfer of U.S. Ships to Canadian Register.—The Dominion Government has taken steps to amend the regulations regarding the transfer of U.S. ships to Canadian register, with the view of restricting the smuggling of liquor into the U.S., and has issued instructions to registrars of shipping regarding cases where an application is made to register a ship in Canada, which has been bought from a U.S. owner, that unless the application is supported by a certificate from the U.S. Shipping Board authorizing such transfer, all particulars must be forwarded to the competent department of the Dominion Government for instructions before any definite steps are taken for the transfer of the ship.

Lusitania Outrage.—A London, Eng., cable dispatch states that Germany is prepared to admit responsibility for the sinking of the Cunard Line's s.s. Lusitania, during the war, with a large loss of life, and will pay United States claims from the proceeds of the sale of confiscated property.

Welland Ship Canal.—A St. Catharines press report of Jan. 10 stated that the Dominion Government was planning for the commencement of work, early in the spring, on section 8, between Humberstone village and St. Catharines. This report has not been confirmed.

Stranding of s.s. Cairndhu.

Held at Quebec, Que., Dec. 12, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. Landry and W. Tremblay, into the stranding of the Cairn Line's s.s. Cairndhu, Nov. 21, at Confederation Point, in the St. Lawrence River, near Cap Rouge. W. I. Gear represented the Robert Reford Co., the ship's agents; A. C. M. Thomson appeared for the master and chief officer, and Major Thos. Vien, K.C., M.P., for the pilot. The court commented on the very straightforward evidence, which induced it to accept as a fact that every precaution had been taken. The master had been on the bridge, but had gone down to consult the chart when the speed of the ship was reduced to slow. By the appearance of the land, he assumed that the ship was, if anything, south of mid-channel. On being advised that a heavy snow flurry was enveloping the ship, he returned to the bridge, but before reaching it, the ship grounded. Engines were put full speed astern, and water tanks sounded, it being found that water was entering no. 2 compartment and the engine room. The astern movement was ineffective. Everything was in readiness for an emergency, and the courses had been well steered. The court considered that all those on duty had acted to the best of their ability, and therefore the master and officers were not held in default. The pilot, J. A. Garipey, in his straightforward evidence, stated that owing to the snow, Basile range upper light was not visible, and he thought he had, following his usual custom, reached a gap in the land on the south shore, by the time and distance covered, and altered the course, which would have brought him to the lights at the center of the Quebec bridge, with the idea of anchoring, if the weather continued unpropitious. A flood tide was running, but its unusual rapidity was not determined at the time, and was therefore not accounted for in framing the course. He assumed that he was south of mid-channel, but the unusual strength of the tide, when the course was changed, the ship's starboard side being offered to the strength of the tide, deflected the ship unknowingly toward the north shore. The court expressed the opinion that had it not been for the unusual strength of the tide, the ship would have cleared the point, but it appeared to be a case where the pilot was sure of being in a certain position without any attempt to verify his surmise. It therefore held that he committed an error, but owing to his excellent record of 21 years, and this being his only accident, he was cautioned to be more careful in future.

Marine Public Works Contracts Awarded.—The Public Works Department awarded marine public works contracts during Nov., 1922, as follows:—Nov. 4, improvements to wharf at Berthierville en haut, Que., to Hormisdas Gravel, St. Lambert, Que., at unit prices; Nov. 24, wharf at Ucluelet West, Comox-Alberni, B.C., to McDonald, Watson & Wither, Victoria, B.C., at unit prices.

Lake Steamship Co., Ltd. has been incorporated under the Dominion Companies Act, with \$500,000 authorized capital, and office at Port Arthur, Ont., to build, own and operate ships, and to carry on a general transportation, navigation and trading business. The nominal incorporators include N. E. Strickland, barrister, Toronto.

A. A. Wright on Shipping the Western Wheat Crop.

A. A. Wright, Toronto, Honorary President, Dominion Marine Association, has written as follows:—While the port of Montreal and Canadian ship owners would naturally like to handle all the Canadian crop, it is a commercial impossibility, and the Buffalo gateway is an absolute necessity to the western farmer, in view of the evident desire to market the entire western crop if possible before the close of lake navigation each autumn. With the exception of a small quantity of ore to Point Edward and Sault Ste. Marie, the only business on the Great Lakes for Canadian bulk freight ships is the carriage of Canadian grain to Canadian ports, and coal from U.S. ports to Canadian ports, and occasionally an odd cargo of U.S. grain to Canadian ports. On everything, except grain from one Canadian port to another Canadian port, Canadian ships have to meet U.S. vessel competition. U.S. ships, on the other hand, have ample business in ore and coal at profitable rates, with the result that they have over 500 large steel bulk freight ships, as against possibly 20 similar ships in Canada. Although anyone is at liberty to build and operate Canadian ships, no one is eager, since fool propositions like putting them under the Railway Commission or suspending the present inadequate coasting laws are continually brought forward. The result, therefore, is that, while the few large Canadian ships, with the considerable number of canal-sized ships, could more than handle the entire crop if spread over the year, they could not handle it all in two months, and lie idle the rest of the year even if there were enough of them, so the U.S. fleet, after completing the ore contracts, comes in each autumn, competes with Canadian ships, and carries from 40 to 60% of the grain to Buffalo.

Now for the reasons why so much grain goes by Buffalo, when the water rate, Fort William to Montreal, is always from 1c. to 3c. a bushel less than Fort William to New York. First, Montreal is open only from about May 1 to Nov. 25, so that after Nov. 10 at the latest Montreal ceases to be a factor in the autumn movement of grain, and it then becomes largely a question for shippers to decide between Georgian Bay elevators or Buffalo. Georgian Bay means the rail haul to St. John or Halifax, where they are restricted to foreign ports reached by the regular liners, whereas at Buffalo they have Philadelphia, Baltimore, Newport News, New York and Boston, where there are always tramp ships available to any port where they can sell the grain. It should be clear, therefore, that all intelligent shippers moving grain forward for sale and shipment during winter months will always choose Buffalo for a large proportion of it, as it is useless to fight geography.

The reason you cannot get ocean tramps as readily at St. John, Halifax and Montreal as at U.S. ports is because the ordinary tramp is compelled, when insuring, to give a warranty not to trade to B. N. A. ports north of Boston, or possibly Portland, except at an additional rate of probably 1½%, which virtually confines the business to the liners which are covered for that trade.

As I have several times pointed out, it may pay to develop the waterpowers on the St. Lawrence for the sake of the

power, but it would be simply folly to spend money with the idea that it would increase the value of grain to the western farmer or stop the movement of grain between Nov. 1 and Dec. 12 in volume to Buffalo.

C.P.R. Automobile Ferry Service to Vancouver Island.

As mentioned in Canadian Railway and Marine World for January, the C.P.R. has ordered from Yarrows, Ltd., Victoria, B.C., a high powered motor ferry ship for service between Bellingham, Wash., on the mainland, and Sidney, on Vancouver Island, thus providing additional facilities for reaching the Island by motorists using the Pacific highway. The ship will be 170 ft. long over all, 42 ft. moulded breadth, and 11 ft. moulded depth. There will be capacity for 50 motor cars, with ample height between decks to allow for limousines, California tops, and all classes of cars, with no difficulty in boarding. It will be equipped with twin screws, driven by 2 Diesel engines by McIntosh & Seymour, Auburn, N.Y., of 600 h.p. each, for a speed of about 14 knots an hour. It is intended, during the busy season, to make two round trips a day, leaving Bellingham on the first trip early in the morning, and on the second trip, about 2 p.m. The ship will have ample observation rooms and deck space for full enjoyment of the scenery between San Juan, Orcas, Lopez and other islands, and as the route is completely landlocked, no rough water will be encountered.

The company is arranging to operate

the s.s. Charmer between Vancouver and Nanaimo, to provide increased accommodation for automobiles, especially limousines and other types of closed cars, and a circuit tour will be established from Seattle, via Bellingham, and ferry to Sidney, thence to Victoria and Nanaimo, taking in the Malahat Drive, and thence by ferry to Vancouver, and over the Pacific highway to Bellingham and Seattle, or reversing the route, from Seattle to Vancouver, thence by ferry to Nanaimo, on to Victoria and Sidney, and then by ferry to Bellingham. The services will be inaugurated in May.

United States Shipments via Vancouver.—One of the U.S. Trade Commissioners is reported to have stated in a speech at Milwaukee, Wis., recently that 68% of all the commerce which passed through the port of Vancouver, B.C., during 1921, consisted of goods going from, or destined for, the U.S. This has been taken up in Vancouver, and official records examined, which show that during 1921, 418,263 tons of cargo entered Vancouver, of which 46,106 tons, or 11%, were in transit to U.S. points; and 510,848 tons, including lumber, of which total 39,718 tons, or 7.8%, were in transit from U.S. points. If lumber, of which 209,324 tons were exported, were excluded, the U.S. merchandise exported through Vancouver would have been about 15% of the total.

Great Lakes to Mexican Gulf.—A resolution was introduced in the U.S. Senate, Jan. 16, for the appointment of a committee to investigate the question of constructing a 9 ft. channel in the waterways connecting the Great Lakes with the Gulf of Mexico.

Sault Ste. Marie Canals Traffic.

Summary for 1922.

Articles	Canadian Canal	U.S. Canal	Total
Lumber	3,140	210,972	214,112
Flour	4,701,473	4,681,140	9,382,613
Wheat	12,527,135	263,088,153	275,615,288
Grain, other than wheat.....	15,704,095	103,521,303	119,225,398
Copper	20,449	37,492	57,941
Iron Ore	91,142	42,065,496	42,156,638
Pig Iron	558	21,376	21,934
Stone	9,983	18,042	28,025
General Merchandise	52,727	252,816	305,543
Passengers	18,198	11,228	29,426
Coal, Soft	61,340	8,729,231	8,790,571
Coal, Hard	2,100	668,347	670,447
Iron Ore	17,394	70,700	70,700
Manufactured Iron and Steel..	10,228	29,172	46,566
Salt	4,936	63,457	73,685
Oil	8,505	186,246	191,182
Stone	262,807	620,233	628,738
General Merchandise	312,339	575,146	575,146
Passengers	17,487	12,130	29,617
Summary			
Vessel Passages	3,507	13,876	17,383
Registered Tonnage	4,741,582	47,854,275	52,595,857
Freight—Eastbound	1,344,125	53,676,098	55,020,223
Westbound	367,310	10,679,725	11,047,035
Total Freight	1,711,435	64,355,823	66,067,258

The Canadian canal was opened Apr. 17 and closed Dec. 24, 1922; season, 252 days.

The U.S. canal was opened Apr. 17 and closed Dec. 20, 1922; season, 248 days.

COMPARATIVE STATISTICS FOR 1921 and 1922.

Items	1921	1922
Vessels: Steamers	Number 10,779	15,448
Sailing	Number 538	818
Unregistered	Number 1,530	1,117
Total	Number 12,847	17,383
Lockages	Number 9,653	12,278
Tonnage: Registered.....	Net 32,184,240	52,595,857
Freight	48,259,254	66,067,258
Passengers	Number 66,621	59,043
Lumber	M. ft. B.M. 206,306	214,112
Flour	Barrels 10,217,305	9,382,613
Wheat	Bushels 197,715,010	275,615,288
Grain	Bushels 59,694,264	119,225,398
Copper	Short tons 31,533	57,941
Iron Ore.....	Short tons 22,595,323	42,227,338
Manufactured and Pig Iron.....	Short tons 39,035	68,500
Coal: Soft	Short tons 12,507,027	8,790,571
Hard	Short tons 2,256,128	670,447
Salt	Short tons 62,313	73,685
Oil	Short tons 301,633	191,182
Stone	Short tons 493,447	575,763
General Merchandise.....	Short tons 600,163	880,689

Restrictions on United States Ships Transferred to Canadian Register.

Canadian Railway and Marine World for January gave some details of the purchase of the s.s. *Matoa*, from Boston, Mass., parties, by the Great Lakes Transportation Co., Midland, Ont., of which James Playfair is President and General Manager. In the ordinary course, application was made to the U.S. Shipping Board for the necessary permission, under the existing regulations, and a certificate was issued by the Board giving the necessary approval, and the ship was removed from the United States register, preparatory to its transfer to the Canadian register. A clearance was granted to enable the ship to clear from New York, and she proceeded to the St. Lawrence, arriving at Lachine before the close of navigation, where she now is. On application being made for Canadian registry, it transpired that certain conditions had been added to the U.S. Shipping Board's transfer permit, which had never previously been done, and Canadian registry was refused, on the ground that the conditions mentioned amounted to an assertion of continued U.S. control of ships which are no longer United States ships. The conditions mentioned are as follows:

(1) That no liens, encumbrances or other charges are due, or to become due against said vessel.

(2) That the sale and/or transfer of registry hereby authorized shall be effected within 6 months from date hereof.

(3) That the said vessel shall not be used for the importation into, or exportation from, the U.S.A., of any spirituous, vinous, malted, fermented or other intoxicating liquors of any kind, or of any articles, property, goods, wares or merchandise, in violation of the laws of the U.S.A.; that this condition shall run with the title to the said vessel for the further guaranty of the strict performance hereof; that upon any breach of this condition by the purchaser and/or transferee of the said vessel, or his, their or its successors in interest, the permission hereby granted shall be, and become, null and void and without effect, and thereupon said vessel shall be immediately subject to seizure, libel and forfeiture to the U.S.A., wherever and whenever found, without compensation to any parties therefor.

(4) That the bill of sale of said vessel on or subsequent to the date of this order, and under the provisions hereof, shall refer to and make the foregoing application and this order a part of the of the said bill of sale as fully as if copied therein in full.

(5) That the said vessel does not hereafter engage in trade with U.S. ports.

Paragraphs 3, 4 and 5 are new conditions, attached to permits issued by the U.S. Shipping Board for the transfer of U.S. ships to foreign register, and have never previously been attached to any transfer permit. The matter has been taken up with the U.S. Shipping Board, which takes the stand that the conditions must be carried out. It has also been referred to the British Embassy at Washington, D.C., and certain negotiations are proceeding on the point at issue.

The Dominion Marine Department has stated that as the conditions laid down by the U.S. Shipping Board practically

amount to an assertion of control over ships which are no longer U.S. ships, it is not prepared to concede to the U.S. Government the right to in any way exercise jurisdiction over ships that may have come upon the register books of British ships in Canada, beyond such as may, from time to time, be applicable to all ships of foreign registry which use U.S. waters. It has also issued the following instructions to registrars of shipping in Canada, viz.:—"If, on application to register at your port, a vessel purchased from a United States citizen, the order of the U.S. Shipping Board authorizing the sale and transfer of flag, and/or the bill of sale under which title from the American owner was acquired, contains any provisions restricting the use of the vessel: (1) The vessel must not be registered. (2) All papers must be forwarded to this office. Below are given some provisions which have appeared in recent orders. There may be others, and it is important that the Department should know of them." (Then follow paragraphs 3, 4 and 5 of the U.S. Shipping Board conditions quoted above.)

A reading of paragraph 3 indicates clearly that it is the U.S. Shipping Board's aim to prevent the use of any U.S. ship, which may be transferred to a foreign register, for the purpose of carrying intoxicating liquors into, and out of, U.S. ports, and if the matter halted there, there would be little to complain of, as, the importation of intoxicating liquors into the U.S. having been prohibited, any ship engaged in such traffic would be liable to seizure anyway, and could be dealt with under the Customs laws. The crux of the whole matter, however, is in paragraph 5, which prohibits the ship from engaging in trade with U.S. ports. This, on the face of it, is clearly in conflict with paragraph 3, which merely prohibits the importation into, and exportation out of, U.S. ports, of intoxicating liquors, and goods in violation of U.S. laws. As in Canada, the trading of Canadian and U.S. ships between ports of either country is a matter of statutory privilege, therefore, in addition to being in conflict with paragraph 3, paragraph 5 is also in conflict with statutory law.

The Secretary of the U.S. Shipping Board, in expressing his opinion on this point, has stated that paragraph 5 is not in conflict with paragraph 3; that paragraph 3 binds both the purchaser and seller to an agreement that if the ship is used contrary to U.S. laws, it shall be subject to seizure by the U.S., and paragraph 5 stipulates that the ship shall not be used in trade with U.S. ports, which means that the ship after its transfer to Canadian registry may neither be used in trade between two U.S. ports, nor between a Canadian, or other foreign, port and a U.S. port.

Another U.S. opinion on paragraph 5 mentions that the provision as to a foreign ship trading between two U.S. ports is already covered by statutory law, but as to a Canadian ship trading between a Canadian port and a U.S. port, the paragraph is clearly in conflict with the law as it exists, and that this will at once be seen to be an effort on the U.S. Shipping Board's part to further restrict the use to be made of ships transferred from the U.S. flag.

Canadian Government Merchant Marine Operation, Etc.

Grand Trunk Pacific Coast Steamship Service.—The coast steamship service formerly operated by the Grand Trunk Pacific Coast Steamship Co. Ltd., and latterly by the Canadian National Rys. for the G.T.P.R. receiver, with the steamships *Prince Albert*, *Prince George*, *Prince John* and *Prince Rupert*, under the management of C. H. Nicholson, has been brought under the Canadian Government Merchant Marine Ltd., and is in charge of B. C. Keeley, Pacific Coast Manager, who reports to R. B. Teakle, General Manager, C.G.M.M., Montreal.

Officers of Steamships.—The following masters have been appointed or transferred in addition to those mentioned in previous issues: s.s. *Canadian Leader*, Capt. M. Robertson, returned from leave of absence; s.s. *Canadian Observer*, Capt. J. P. Tait, vice Capt. A. O. Cooper, who died of heart disease, Jan. 9; s.s. *Canadian Volunteer*, Capt. E. Randall; s.s. *Canadian Voyager*, Capt. D. M. Dickson. W. Samples has been appointed chief engineer, s.s. *Canadian Forester*.

The s.s. *Canadian Prospector* had her boilers under repair at Kobe, Japan, during December, and sailed from there, Dec. 30.

The s.s. *Canadian Sapper*, which arrived at Halifax, N.S., Jan. 11, went into the Halifax Shipyards' drydock for her annual overhaul.

The s.s. *Canadian Seigneur*, which suffered considerable damage during the recent heavy storms on the Atlantic, and which was towed into St. John's by the s.s. *Canadian Sapper*, as mentioned in our last issue, has had repairs completed by Newfoundland Dockyards Ltd., and was expected to be again in service by the end of January. A new stern frame and rudder were supplied by Canadian Vickers Ltd., Montreal, the builders of the ship.

Advantage Taken of Suspension of Coasting Regulations.

Under the illegal permission given by the Customs Department, on Nov. 24, 1922, as detailed in Canadian Railway and Marine World for January, on pg. 43, the following United States ships loaded grain at the head of the lakes for eastern Canadian ports:—

At Port Arthur, Ont., barge Geo. E. Hartnell, 200,214.40 bush. no. 1 northern wheat, for Midland, Ont.; Dec. 4, steamship John McCartney Kennedy, 193,579.10 bush. no. 1 northern wheat, for Port McNicoll, Ont.; Dec. 6, steamship John W. Ailes, 182,932.40 bush. no. 1 northern wheat, for Port McNicoll, Ont.

At Fort William, Dec. 5, steamship P. W. Sherman, 220,000 bush. no. 1 northern wheat, for Goderich, Ont.

Vancouver Terminal Elevator.—An Ottawa press dispatch of Jan. 19, stated that an order in council had been passed transferring the Vancouver elevator from the Trade and Commerce Department to the Vancouver Harbor Commissioners, for \$550,000. The valuation was originally set at \$900,000. It is stated that the elevator will be operated as a terminal elevator with Board of Grain Commissioners' inspectors and weighers in control, but that the transfer will not take place until Aug. 31, the close of the current grain season.

Important Additions to the Great Lakes Steamship Fleets.

The condition of the shipbuilding trades in Great Britain, which has been considerably subnormal for some time, as in other parts of the world, and the decision of the shipbuilding companies to keep their plants in operation, with the view of providing all possible means of employment, and to keep their organizations intact to be able to do repair work, has resulted in the booking of a number of orders for ships of the lake-canal type for operation on the lake and St. Lawrence route. According to dispatches from Great Britain, builders are taking orders practically at cost, or even less, looking rather to the provision of employment throughout the winter, and the advantages of keeping plants running, than to profits. The tremendous increase in the grain traffic from the Great Lakes to Montreal, during the 1922 season, and the increasing popularity of that route, with the consequent necessity of developing it to its fullest extent, is proving attractive to shipowners, with the result that they are making considerable increases in their fleets, and new ventures are taking shape, which will add largely to the shipping operating on the Great Lakes and St. Lawrence route. A feeling exists that these orders for ships should have been placed with Canadian shipbuilding yards, but from the fact that, for the time being, British shipbuilders are willing to take orders for prompt delivery at practically the cost of material and labor, without regard for overhead expense, it can easily be seen that no Canadian shipbuilding company could possibly compete, and that it would be folly on the part of shipowners to neglect the opportunity.

Eastern Steamship Co.—Canadian Railway and Marine World for January contained preliminary details of the placing of orders in Great Britain by A. B. Mackay, formerly of Hamilton, Ont., for 10 full canal size, bulk grain steamships of 2,500 d.w. tons capacity each, at an approximate total cost of £300,000. We have since been advised that 2 steamships each were ordered from Samuel White & Co., Cowes, Isle of Wight; Earle's Shipbuilding & Engineering Co., Hull; Furness Shipbuilding Co., Haverton Hill-on-Tees; Cammell, Laird & Co., Birkenhead, and Napier & Miller, Glasgow. These ships are required to be ready for delivery by the beginning of May, for the reopening of St. Lawrence navigation. Each ship is to be capable of carrying 90,000 bush. of wheat, and the approximate general dimensions are to be: length 253 ft., breadth 43 ft., depth 20 ft., or full Welland canal size.

Eastern Steamships Co. Ltd. has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Port Colborne, Ont., to own and operate these ships. The officers of the company are: President, Nisbet Grammer, President, Eastern Grain, Mill & Elevator Corporation, Buffalo, N.Y.; Vice President and Treasurer, J. J. Rammacher; Vice President, E. T. Douglass; Secretary, N. B. Macpherson; other directors, G. J. Grammer and J. J. Boland. Boland & Cornelius, Buffalo, N.Y., have been appointed Managers, and H. H. Goode, of the Canadian Furnace Co., will represent the company at Port Colborne. It is anticipated that several Canadians will be associated.

The company's President, Nisbett Grammer, has furnished the following

information: "The ships will carry grain and coal eastbound from Buffalo and Port Colborne to Montreal, and also coal from Lake Erie ports to St. Lawrence ports; also grain and coal on the upper lakes. They may also carry through cargoes from the upper lakes to Europe, but they are intended primarily for use through the Welland and Lachine Canals during the lake season. I consider the construction of this fleet will materially assist in the movement of grain to Montreal and in relieving the congestion that exists at lower lake ports during the season of harvest movement. I am very much in favor of utilizing the facilities that now exist, such as the Welland Canal, rather than wait a great many years in the future for our western agitators to cause what they call the St. Lawrence Canal to be constructed, which I think is entirely impractical. I believe the entire actual effect (outside of giving some agitators a job) of agitation, that has been so general for a St. Lawrence ship canal, has been to retard the use and development of the facilities that are now available to be used. I think the agitation has been a harm to the western farmers, because it has interfered with the full utilization of the facilities that are available, or could be immediately created. I am also confident that Montreal will continue to be an export grain port for an indefinite time in the future, as I think the large volume handled, via Montreal, during the last two years, both via rail and water, has demonstrated that Montreal will be one of the premier export ports of North America for grain, in spite of its short season. I am very much interested in the export movement of grain and control the movement of a large amount of it, and I am very confident that the ships which we are having built will be provided with cargoes so as to make their operation a success."

Great Lakes Transportation Co.—Canadian Railway and Marine World for January mentioned that Swan, Hunter & Wigham Richardson, Newcastle-upon-Tyne, Eng., were building a number of lake bulk freight steamships, 10 of which were being negotiated for by one of the largest Canadian shipowning companies on the Great Lakes. We are advised that these 10 ships are expected to arrive on the Great Lakes. We are advised that these 10 ships are expected to arrive on the Great Lakes early in May, and that a company will be organized to own them, in which the Great Lakes Transportation Co., of which James Playfair, Midland, Ont., is President, will hold a considerable interest, and will operate them. They will have the following dimensions: length over all 259 ft., beam 43 ft., depth 20½ ft. They will be arranged for the carriage of 90,000 bush. of wheat on a 14 ft. draft. The engines will be of the triple expansion type, with cylinders 17, 29, and 47 in. diam. by 36 in. stroke, supplied with steam by 2 boilers, each 12½ ft. diam. by 11 ft. long, at 185 lb. working pressure. They will be of a similar type to the Great Lakes Transportation Co.'s s.s. Glenmavis, but with all latest improvements, and will trade principally from Port Colborne to Montreal, and also to lower St. Lawrence ports for pulpwood, and in fact will take any business that offers.

Keystone Transports, Ltd.—The two steel screw cargo steamships which Key-

stone Transports, Ltd., has ordered in England, as mentioned in our last issue, will be built by Smiths Docks, Ltd., Middlesbrough, to Keystone Transports' own specifications and plan, to Lloyd's highest class for service on the Great Lakes and St. Lawrence River and Gulf. The dimensions will be: length overall 256¾ ft., breadth 42½ ft., depth moulded 19¼ ft., with a d.w. carrying capacity of about 2,330 tons on 14¼ ft. draft. Large hatches will be provided for the company's special trade, with full cargo gear booms and deck winches, should the ship be required at any time to load general cargo. Engines will be of the triple expansion type, with cylinders 16, 22 and 44 in. diam., by 33 in. stroke, and will be supplied with steam by 2 Scotch boilers, 12½ ft. diam. by 10½ ft. long, natural draft, 180 lb. working pressure; heating surface 2,850 sq. ft., patent withdrawable furnaces, patent atmospheric ash hoist, contraflow condenser, steam and hydraulic reversing gear, etc. The circulating and ballast pumps will be so fitted that both, or either, may be used for similar purposes, and will be of extra large proportions. The steering gear will be direct connected to the quadrant. Three watertight bulkheads will be fitted, and the screen bulkheads between holds will be partly watertight, 6 ft. up from the tank tops. Water ballast of about 1,000 tons will be carried in the double bottom and peaks. Wrecking wells will be fitted, to allow entry to double bottom, when ship is loaded with cargo. Accommodation will be provided for the master and deck crew, forward, and for engine room crew and stewards, aft. Refrigerating plant will be provided in the engine room, connected to cooling chamber next the steward's pantry, equal to evaporation of a ton of ice a day. The ship will have three holds and will carry about 85,000 bush. of wheat, or 2,500 tons of coal. The cubic capacity will be 123,000 ft., and bunker capacity 140 tons. Delivery of the first ship is required by April 1, and of the second, by April 15. Their construction is under John Reid & Co.'s supervision.

Ogilvie Flour Mills Co.—We are advised by the Anderson Co. of Canada, Montreal, that the Anderson Overseas Corporation (France) has sold to a Montreal financial group 10 collier steamships owned by the French Government, after they had been inspected for the buyers by Captain H. N. McMaster, of Montreal. Since the sale they have been withdrawn from operation, to undergo slight repairs and alterations before crossing the Atlantic, and will be brought out in the spring, for operation in the grain trade between Port Colborne and Montreal. The ships are said to be about 1,400 tons d.w. and to be capable of carrying about 60,000 bush. of wheat each. The financial group referred to is said to be allied with the Ogilvie Flour Mills Co.

Mathews Steamship Co.—Press dispatches from Great Britain state that other orders for similar ships, in addition to those mentioned in this column, have been given other ship building companies at various points in the country, each builder handling two ships, and it is said that the Mathews Steamship Co., Toronto, has placed some orders there, but no details are available.

J. F. M. Stewart, Toronto, is negotiating with English builders for a full Welland Canal size freight steamship.

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

The Davie Shipbuilding & Repairing Co., Lauzon, Que., is repairing the Cairn Line's s.s. Cairndhu, which went aground in the St. Lawrence River, near Cap Rouge, recently. Tenders for the work were received shortly after the accident, and it was the intention to take her out to the seaboard and send her to Brooklyn, N.Y., to have the repairs done, but owing to the early freeze-up of the St. Lawrence, it was impossible to do so.

Halifax Shipyards, Ltd., Halifax, N.S.—Certain repair work on H.M.C.S. Patriot was not completed at the time she was undocked Dec. 1, as mentioned in our last issue, as such work could be done more conveniently while the ship was afloat. This was completed Dec. 5. The Nova Scotia Steel & Coal Co.'s barges Twin Sisters and J. B. Renes were overhauled and painted, and completed Dec. 6. Canadian Government Merchant Marine s.s. Canadian Volunteer was docked Dec. 8, for repairs to hull, rudder, general overhaul and scraping and painting, which was completed Dec. 13; the s.s. Canadian Constructor was docked Dec. 27 for scraping and painting, overhauling sea valves, etc., and was undocked Jan. 2; the s.s. Canadian Gunner, which suffered considerable damage at St. John's, Nfld., from fire in the cargo in holds 1 and 2, arrived at Halifax Dec. 20 for general survey, but before this could be done, it was necessary to clean the ship and open up certain of the damaged work; this was completed Dec. 23, and survey was commenced Dec. 27; it was reported that the damage is extensive. The Royal Mail Steam Packet Co.'s s.s. Chignecto was docked Dec. 13 for general repairs, scraping and painting, and undocked Dec. 16. The Marine Department's steamships Aberdeen and Aranmore were docked Dec. 19 for drawing tail shafts, overhauling sea valves, scraping and painting, and in the case of the Aberdeen, also miscellaneous hull repairs and straightening propeller blades.

Midland Shipbuilding Co., Midland, Ont.—The barge George E. Hartnell, which has been bought from the Valley Camp Coal Co., Cleveland, Ohio, and which is being converted into a bulk freight steamship, by the Midland Shipbuilding Co., as mentioned in our last issue, for the Great Lakes Transportation Co., has the following dimensions: length 352 ft., breadth 42 ft., depth 27 ft. The forecastle is to be altered, the present quarters removed, and the regular lake type of master's quarters, observation room and wheel house fitted. The hatches will all be widened 2 ft., to suit the unloading devices at the various docks. The inner stringer on the spar deck will be removed and a thicker plate put on, one extra keelson will be fitted between main and spar decks, the hold stanchion and main deck beams and shifting boards will be removed, and the hold will be reconstructed on the arch system, all in accordance with Great Lakes Classification requirements. The engine will be built at Hamilton, Ohio, and will be of the triple expansion type, with cylinders 19, 32 and 56 in. diam. by 36 in. stroke, 1,400 h.p., and will be supplied with steam by boilers, each 14 ft. 7 in. diam. by 10 ft. 8 in. long, at 185 lb. working pressure, built at St. Catharines, Ont. The after deck house will be removed and one will be built with

crew's accommodation according to the best lakes practice. Some of the larger work, such as new stern post, tail shaft, stern tube, sea cocks, propeller wheel and all work below water, is being done by Port Arthur Shipbuilding Co., Port Arthur, Ont., and the balance by Midland Shipbuilding Co. The work is to be completed and the ship ready for the reopening of navigation, the cost of the conversion being approximately \$175,000.

Newfoundland Dockyards Ltd., St. John's, Nfld., has repaired the Norwegian s.s. Skaraas, which arrived at St. John's, Jan. 9, with her steering gear out of order and some minor deck damage, due to rough weather.

Prince Rupert Drydock and Shipyard, Prince Rupert, B.C., did the following repair work during Dec., 1922: U.S. light-house tender Fern, docked and fitted with new rudder and false keel; and 27 fishing ships were overhauled generally. The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert was docked for her annual overhaul.

Yarrows, Ltd., Victoria, B.C., did the following repair work during December: British Canadian Steamships' s.s. City of Victoria, 5,698 tons, rivetting bilge keel, drydocked, scaled, cleaned and painted; C.P.R. s.s. Princess Adelaide, 3,061 tons, drydocked, cleaned and painted, and later hauled out on marine railway and propeller blades changed; Consolidated Whaling Corporation's s.s. Gray, 707 tons, replacing propeller, drawing tail shaft and rewooding; P. Kleppes Rederi s.s. Hallgyn, 6,672 tons, engine room, deck and tank repairs, drydocked, cleaned and painted; Producers Rock & Gravel Co. steam tug Mystery, hauled out on marine railway, cleaned and painted, drew tail shaft, repairs to rudder, engine room and hull. In addition, miscellaneous repairs were done to several scows.

Mainly About Marine People.

H. A. Butt, who has been appointed to supervise the construction of the new floating dock at Southampton, Eng., for which Sir W. G. Armstrong Whitworth & Co., Newcastle-upon-Tyne, have the contract, was for some years assistant to the shipyard manager, Cammel Laird & Co., Birkenhead. After leaving there he was for some time an assistant director of the British Government Shipyards at Chepstow, Monmouthshire, Eng., and later acted for the Imperial Munitions Board as inspector of ships building at various yards in Western Canada for the British Government.

Thomas Conlon, a former canal and waterways contractor, and shipowner, died at Thorold, Ont., Jan. 16, aged 78.

G. J. Desbarats, C.M.G., Deputy Minister of the Naval Service, will continue to act in that capacity until Feb. 28. Under the National Defence Act, which went into effect on Jan. 1, the Militia Department, the Naval Service Department, and the Air Board, have been amalgamated as the National Defence Department, of which Mr. Desbarats will be Comptroller. He has also been appointed acting Deputy Minister of the Department, the Deputy Minister, Major-Gen. Sir Eugene Fiset, being on a year's leave of absence.

Capt. E. English, who died at St. John's, Nfld., Jan. 10, aged 76, was one of the best known mariners of the colony. He commenced his sea life at 17, became a master at 23, and studied for his extra master's certificate at Glasgow, Scotland. He retired from active seafaring life about 30 years ago, and subsequently held positions as Assistant Examiner of Masters and Mates, Examiner in Chief of Masters and Mates, and Harbor Master, at St. John's, retiring from the last position in 1919, when he was succeeded by his son, Capt. E. English, Jr. He was honorary agent for the British Mercantile Marine Service Association, and Secretary of the Pilot Commissioners' Board.

J. H. G. Hagarty, formerly director and Secretary-Treasurer, St. Lawrence & Chicago Steam Navigation Co., who died at Toronto, July 26, 1922, left an estate valued at \$184,800, a life interest in which is given to his widow, and on her death, one-seventh is to be paid to each of six children, and the income from the remaining seventh paid to a son, with remainder to his children.

John Hulbert, who has been appointed Representative, Royal Mail Steam Packet Co., Halifax, N.S., was born in London, Eng., April 2, 1879, and entered transportation service in 1895, since when he has been, to 1906, in various positions as clerk, Houlder Line, London, Eng.; 1906 to March, 1919, senior clerk, specializing in audit and foreign agencies, and statistical work, Royal Mail Steam Packet Co., London, Eng.; March, 1919, to May, 1922, accountant and general assistant, same company, Halifax, N.S.; May to December, 1922, acting Representative, same company, Halifax.

J. S. Leitch, Managing Director, Collingwood Ship Building Co., Collingwood, Ont., will be married, early in February, to Mrs. Porter, widow of the late Major J. H. Porter, Toronto. They will spend their honeymoon in Scotland and France.

Capt. J. D. Mackenzie, who has been appointed Commissioner of Pilots for Sydney, N.S., has been a master mariner for about 30 years, and was, for a time, in the Prince Line's service, between Newcastle-upon-Tyne, England, the West Indies and South America. He was subsequently in Nova Scotia Steel & Coal Co.'s service, and in 1919 joined the Canadian Government Merchant Marine, and served at different times on the steamships Canadian Recruit, Canadian Voyageur, Canadian Trapper, Canadian Ranger, Canadian Commander, and Canadian Cruiser.

James Playfair, President, Great Lakes Transportation Co., Midland, Ont., and Mrs. Playfair, left on Jan. 18 for South America, expecting to be away about two months.

Robert B. Teakle, who has been appointed General Manager, Canadian Government Merchant Marine Ltd., Montreal, was born at Quebec, Que., May 19, 1877, and entered transportation service in May, 1893, since when he has been to April, 1904, in various positions, Allan Line Steamship Co., at Quebec, Halifax and Portland, Me.; April, 1904, to Oct., 1914, in various positions at Montreal, and the latter portion of that time, as Manager, same company, St. John, N.B.; Oct., 1914, to Mar., 1918, Manager, same company, Boston, Mass.; Mar., 1918, to April 16, 1919, Northeastern Manager, France and Canada Steamship Corporation, Boston; April 16, 1919, to Jan., 1923, Manager, Canadian Government Merchant Marine Ltd., Montreal.

Enquiry Into Alleged Combine Among Great Lakes Steamship Owners.

The Dominion Government has appointed a royal commission, consisting of S. J. McLean, LL.B., Assistant Chairman, Board of Railway Commissioners, Ottawa; Brig.-Gen. T. L. Tremblay, member and Chief Engineer, Quebec Harbor Commission, and Levi Thomson, barrister, Qu'Appelle, Sask., and formerly an M.P., to investigate the following representations which have been made to the Government on behalf of responsible grain production and trading interests:

That a steamship combine exists composed of Canadian companies having Lakes Superior, Huron and Erie as a base of operations. That grain shipments which emanate from western provinces pass through the main outlet of Fort William and Port Arthur to eastern ports, and are involved in the freight rates controlled by the alleged combine. That the alleged combine is largely effective, through an amalgamation of interests of shipping companies and ship owners trading upon the said Great Lakes. That the alleged combine, or controlling interest, by its management and operation of the bulk of tonnage of Canadian ships plying on the lakes, exercises a dominating influence upon the transportation of grain between the western and eastern ports, and by the further exercise of this authority, creates high and unjustifiable freight rates upon grain. That the alleged combine or amalgamation of shipping interests has absolute authority to charter and allocate cargoes of grain in the great bulk of tonnage traversing the said lakes between Canadian ports, and the alleged combine refuses to charter or allocate space to grain brokers, dealers or traders, with minor exceptions, unless the said brokers, dealers or traders agree to place insurance upon their cargoes effected through and by the said alleged combine or combination of shipping interests. That the premium rates of insurance thus demanded and charged by the alleged combine are in excess of premiums otherwise available to the said brokers, dealers and traders. That the alleged combine, by insisting upon higher rates being paid for transportation of grain to Canadian ports than the combine charges for carrying grain upon identical dates from Fort William and Port Arthur to Buffalo, is discriminating against Canadian ports and harbors on Georgian Bay and Lake Erie in favor of the port of Buffalo, N.Y. That the alleged combine, by the control it exercises upon Canadian tonnage on the Great Lakes, at times demands higher freight charges to eastern lake ports from Fort William and Port Arthur than are charged by U.S. grain from Chicago and Duluth to Buffalo and other U.S. eastern lake ports. That the operations of the combine in controlling freight rates and further demanding that shippers, brokers and dealers in grain should effect insurance upon the excessive premium rates named by the combine, has unfairly and considerably increased the cost of transportation and handling of the natural products of the western provinces. That the aforesaid situation in respect to the transportation of the products of the western provinces adversely affects the great grain producing population of the said provinces by preventing the grain growers from securing rea-

sonable and untrammelled access to the world's markets for their products; and also prevents them receiving fair, just and reasonable prices which would otherwise be available for their products.

The commissioners are directed to investigate fully representations that have been made to the Government, to enquire into the relations and arrangements between the steamship companies and interests amalgamated or combining for the purpose of operating or arranging for the transportation and insurance of grain upon vessels traversing the Great Lakes; to enquire into the alleged combine of shipping interests in its efforts to dominate and control the freight rates and terms under which grain has been carried from Fort William and Port Arthur; and to enquire into the comparative freight rates on grain by ships traversing the Great Lakes between Duluth, Milwaukee and Chicago to eastern lake ports, as compared with prevailing freight rates on grain to eastern lake ports in ships controlled or dominated or fixed by the alleged combination of interests controlling Canadian lake shipping sailing from Port Arthur and Fort William to eastern ports and to make such further inquiry as the Commission may see necessary in the premises.

The order in council states that the existence of a combine or monopoly such as alleged, would be contrary to the public interests, would levy a special burden upon the agricultural life of the western provinces, constitute a menace to their settlement and expansion, and also restrict general trade, with serious consequences to the entire commercial, industrial and financial life of the Dominion.

It appears that some months ago the Dominion Government employed W. T. R. Preston, of Port Hope, Ont., to look into the charges referred to, and that he made a report which led to the passing of the order in council referred to.

Winter Moorings of Canadian Steamships.

Following is a list of Canadian steamships, with the ports at which they are berthed for the winter, of which Canadian Railway and Marine World has been officially advised, in addition to those published in the January number:—

Alberta & Arctic Transportation Co., Edmonton, Alta.—Canadusa, Rallim, Slave River, at Waterways, Alta.; Distributor, Lady Mackworth, at Fort Smith, Northwest Territory.

Algoma Central Steamship Line, Sault Ste. Marie, Ont.—Agawa, J. Frater Taylor, W. C. Franz, at Midland, Ont.; Home Smith, at Goderich, Ont.

Canada Steamship Lines Ltd., Montreal.—Glenellah, Martian, at Collingwood, Ont.; A. E. McKinistry, Beaverton, at Fort William, Ont.; Canadian, Sarnian, Valcartier, at Goderich, Ont.; Atikokan, Kamarima, Manoa, Mapledene, at Halifax, N.S.; White Star, at Hamilton, Ont.; Advance, Belleville, Cataract, City of Ottawa, Cobourg, D. G. Thomson, Edmonton, George T. Davie, Hamilton, Hilda, John C. Mann, Maplebranch, Mapleglen, Maplegorge, Maplegreen, Mapleheath, Maplehill, Melvin S.

Bacon, Nadine, Oatland, R. G. A. Weaver, Ramona, Simla, Vinmount, at Kingston, Ont.; Narragansett (to be renamed Richelieu), at Levis, Que.; Emperor, Glenmount, at Midland, Ont.; Longueuil, at Montreal; Collingwood, E. B. Osler, Kenora, Maplecourt, Mapleton, Midland King, W. D. Matthews, Westmount, Winona, at Port Colborne, Ont.; Arabian, City of Hamilton, H. F. Bronson, J. R. Edwards, Jeremiah Godfrey, Mapleboro, Maplebrook, Maplegrange, Minnie E. Orton, at Port Dalhousie, Ont.; J. H. G. Hagarty, Midland Prince, W. Grant Morden, at Port McNicoll, Ont.; Brighton, at Prescott, Ont.; Cape Diamond, Cape St. Francis, Montreal, Quebec, Saguenay, Susie, Tadousac, Turbinia, at Sorel, Que.; Cape Eternity, Cape Trinity, Rapids King, Rapids Prince, Rapids Queen, Three Rivers, at Three Rivers, Que.; Cayuga, Chippawa, Corona, Kingston, Macassa, Modjeska, Toronto, at Toronto, Ont.; Thunder Bay, at Buffalo, N.Y.; Ivor Heath, at New York, N.Y.

Canadian Towing & Wrecking Co., Port Arthur, Ont.—A. F. Bowman, Coteau, Empire, Gogebic, James Whalen, at Port Arthur, Ont.

Crystal Stream Steamship Co., St. John, N.B.—D. J. Purdy, Majestic, at St. John, N.B., for general overhauling.

Memphremagog Navigation Co., Georgeville, Que.—Anthemis, at Georgeville, Que.

Ontario Transportation & Pulp Co., Thorold, Ont.—Chicago Tribune, Linden, New York News, at Montreal.

Quebec Salvage & Wrecking Co., Levis, Que.—Gopher, at Louise Basin, Quebec, Que.; Lord Strathcona, at drydock, Lauzon, Que.

Sincennes-McNaughton Line, Ltd., Montreal.—Conqueror, Macsineo, Virginia, John Pratt, Rosalie L., Augustus, Lapwing, at Montreal; Hudson, Ethel, Fredmac, Mathilda, Sinnmaco, Myra, Sinnmac, Gerald Morgan, Emma L., C. W. Chamberlain, Melrose, Selkirk, Winnipeg, Henry Witbeck, Isaac Stephenson, Woodlands, at Sorel, Que.; Jeannette R., at St. Ours, Que.; Andree Dupre, Macsin, Muscallonge, Ashland, Nellie Redington, J. I. Case, Dunmore, Menominee, Kingston, Arthur Morgan, at Cardinal, Ont.; Hector, Kildonan, at Cornwall, Ont.; Burma, at Oswego, N.Y.

Transportation & Shipping Co., Montreal.—Earl Bess, Ethel Q., at Montreal; Gedeon L. and barges Andreon L., Bernon L., Jeannon L., at Quebec; Napoleon L. and barges Fredon L., Laureon L., at Hamilton, Ont.

Canada Steamship Lines Ltd.—At a directors' meeting at Montreal, Jan. 10, Sir Walter R. Lawrence, director, Peninsular & Oriental Steam Navigation Co.; Sir Reginald MacLeod, Chairman, Gresham Fire & Accident Insurance Society, and R. B. Phillpotts, were elected members of the London Advisory Committee, in addition to the existing members, Sir A. Trevor Dawson, Viscount Long of Wraxall, and Sir Vincent Caillard. It was announced that the operating results for 1922 were in course of preparation, and that for the period to Nov. 30, the operating profit was \$1,785,453, with interest charges of \$656,439. It was also stated that the s.s. Narragansett, which is being rebuilt and refitted at Levis, Que., and which will be renamed Richelieu, will be ready for operation between Montreal and the Saguenay, about May 10. She will have accommodation for 440 passengers.

Atlantic and Pacific Oceans.

The White Star-Dominion Line's s.s. Doric, sister ship of the s.s. Regina, is rapidly approaching completion at Belfast, Ireland, and it is expected that she will be ready for the St. Lawrence service in May. The only difference between her and the Regina, is that the Doric is equipped for oil fuel, and the Regina burns coal.

The White Star-Dominion Line's Canadian service will be maintained during next season by the steamships Canada, Doric, Megantic and Regina. The first sailing on the new service is scheduled for Apr. 21, from Liverpool, for Montreal, by the s.s. Canada, and the last sailing, by the s.s. Regina, from Montreal, for Liverpool, Nov. 24. Calls will be made at Belfast, Ireland, westbound.

The Union Steamship Co. of New Zealand, which operates the Canadian-Australian Royal Mail Line, is reported to be considering ordering another large motorship from John Brown & Co., Glasgow, Scotland, in addition to the one ordered recently from Fairfield Shipbuilding & Engineering Co., Glasgow. The report is believed in Victoria, B.C., to be a misrepresentation of a talk about the first ship, and it is stated that the company has no plans to extend the passenger service on the Canadian-Australian run, beyond what is at present under construction.

The Anchor-Donaldson Line's s.s. Athenia, which is rapidly approaching completion at Glasgow, for the Glasgow-Montreal service, is considerably overdue, her construction having been delayed by labor troubles. She is scheduled to sail from Glasgow, April 19, on her maiden trip, and to arrive at Montreal, May 4. Her dimensions are, length 520 ft., breadth 66 ft., depth 42 ft., tonnage, 14,000 gross. She is equipped for oil burning, and has accommodation for 516 cabin, and 1,000 third class passengers. Cabin accommodation for 162 passengers is arranged on the shelter deck, which runs almost the full length of the ship. The public rooms and cabins are all heated by steam radiators.

The Royal Mail Steam Packet Co.'s motorship Loch Gail, which has been built at Govan, Scotland, for the Pacific service, underwent her trials on the Clyde, during December, and was handed over to her owners. Her dimensions are: length 502 ft., breadth 62 ft., depth 38½ ft. She is built with poop, bridge and forecastle, 8 watertight bulkheads, 6 cargo holds, one of which can be used as a deep water ballast tank, and with double bottom compartments, with the space between the tunnels arranged for

carrying oil fuel. The steering gear, windlass and 15 cargo winches are all electrically driven, and there are 36 cargo derricks for weights varying from 3 to 7 tons, and two additional derricks for weights up to 40 tons. The propelling machinery consists of two 8-cylinder, 4-cycle Diesel engines, developing 6,000 i.h.p. at 115 r.p.m., for a sea speed under full load of 12½ knots. She will be operated in conjunction with her sister ship, Loch Katrine, and similar ships of the Holland American Line, in the general trade to North American Pacific coast, making regular calls at Vancouver.

Maritime Provinces and Newfoundland.

Grain exported from St. John, N.B., during 1922, was 15,373,048 bush., compared with 10,428,105 bush. in 1921.

The port of Halifax shipping report for Oct., 1922, shows gross shipping tonnage of 207,738, against 171,105 for Oct., 1921. Exports were valued at \$1,473,609, and imports at \$1,111,609, compared with \$1,007,960 and \$971,512, respectively, for Oct., 1921.

John Blue has been appointed by the Dominion Government as harbor master, Belle River, P.E.I., in place of M. F. Riley, whose services have been dispensed with on account of neglect of duty. The remuneration is the amount collected as harbor dues, up to \$200 annually.

The Newfoundland Government s.s. Sebastapol, which replaced the s.s. Portia on the Newfoundland west coast route recently, grounded on a rock at Channel, Dec. 30, and refloated the following day without apparent damage. This was stated to be the second time she had grounded within a week.

The s.s. Bretonia, which sailed from St. Pierre, Miquelon, about Nov. 29, 1922, for Boston, Mass., and New York, which was reported to have sailed from New York, Dec. 10, and which has not since been heard of, has been given up as lost with her crew, in the recent heavy storms.

The tern schooner Gertrude Parsons, owned in Windsor, N.S., was blown ashore at Digby, N.S., early in January, during a heavy northeast storm. She had been moored at the government pier, with two anchors, which she dragged for about half a mile, and went ashore practically in the center of the town, parallel with and only a few feet from one of the streets.

The s.s. Hampton, owned by Capt. P. B. Belyea and J. S. Gregory, St. John, N.B., is reported to have been sold to Capt.

Taylor, for \$7,000. She was built at Hampton, N.B., in 1905, and is paddle wheel driven by engine of 34 h.p. Her dimensions are: length 100.1 ft., breadth 21.3 ft., depth 5.3 ft.; tonnage 183 gross, 115 net. She was operated formerly between St. John and Belle Isle.

The Newfoundland Government has presented Capt. W. Rollerson, master of the White Star-Dominion Line s.s. Welshman, with a pair of binoculars, the chief officer, G. W. Petheram, being recommended for a Lloyd's shipwreck medal, and the lifeboat crew of five seamen, with £3 each, for saving the crew of the schooner Stanley Joseph, which was abandoned off Cape Race a few months ago.

The U.S. Shipping Board's s.s. West Hardaway was towed into Halifax, N.S., at the end of December by the U.S. Shipping Board's s.s. West Haven. She was bound from Grangemouth, Eng., to Norfolk, Va., and encountered heavy storms in crossing the Atlantic. When picked up by the s.s. West Haven, she was about 500 miles off Halifax, and helpless through having exhausted her oil fuel. During the tow, the line broke twice. Both ships took on oil at Imperial, and proceeded on their voyages.

The Newfoundland Government's s.s. Prospero, which ran aground at Small Island, Green Pond, on the east coast of Newfoundland, Dec. 16, was refloated under her own steam, after a quantity of her cargo was jettisoned, and returned to St. John's at the end of December, accompanied by the s.s. Daisy. A large hole had been made in her hull forward, and tank 1, hold 1 and the forepeak were filled with water. All the cargo in the forward hold was damaged. The hole was temporarily covered by a sail patch, and the pumps worked to full capacity, which kept the water in check to some extent while returning to port, when arrangements were made for her to be drydocked.

Province of Quebec.

The Memphremagog Navigation Co.'s s.s. Georgeville has been hauled out at Georgeville, and extensive repairs, including the rebuilding of the hull, are being done at a cost of approximately \$10,000.

The Grain Clearance Board's statistics show that 154,550,000 bush. of grain were handled at Montreal during the past season, compared with 138,453,980 bush. during the 1921 season. During the same period in 1922, 111,071,093 bush. were handled through the port of New York. There were 1,194 ocean steamship arrivals at Montreal during the 1922 season, with a tonnage of 3,931,901, compared with 964 arrivals, with a tonnage of 2,891,956, during the 1921 season. In addition to these, there were 1,374 arrivals at Montreal during 1922, from the Great Lakes.

Ships Added to and Deducted from the Canadian Register During October and November, 1922.

Added.	Steam.—Tonnage—			Sailing.—Tonnage—		
	No.	Gross	Net	No.	Gross	Net
Built in Canada.....	26	5,497	3,363	17	2,686	2,614
Transferred from United Kingdom.....	1	1,729	1,074	.....	.....	.....
Purchased from foreigners.....	8	10,442	5,888	.....	.....	.....
Registered anew.....	8	116	92	1	116	90
Others .....	.....	.....	.....	1	243	202
Totals.....	43	17,784	10,417	19	3,045	2,906
Deducted.						
Wrecked or otherwise lost.....	4	3,514	2,248	7	572	530
Broken up or unfit for use.....	6	3,047	1,943	6	356	356
Sold to foreigners.....	3	3,939	2,556	1	806	806
Transferred to British Possessions.....	1	272	156	3	374	335
Registered anew.....	2	27	22	6	67	67
Totals.....	16	10,799	6,924	23	2,175	2,094

St. John Drydock & Shipbuilding Co. sold an issue of \$836,000 35-year serial 5½% gold bonds recently, to Aemilius Jarvis & Co., Toronto. The company is subsidized by the Dominion, under the Drydock Subsidy Act, 1910, and the Drydock Amendment Act, 1917, under which the Government provides an irrevocable semi-annual payment for the redemption of interest and principal. The bonds are a first and only mortgage on the drydock and shipbuilding yards which are being built at St. John, N.B.

Ontario and the Great Lakes.

The Detroit & Windsor Ferry Co. has increased its fares across the river, and is now selling 6, instead of 7, tickets for 25c. An additional 5c. is charged for automobiles.

The Northern Navigation Co. has libelled the s.s. Robert L. Fryer, owned by Henderson Freighting & Transfer Co., Fort William, on a claim for \$6,000 to cover damage sustained by the s.s. Hamonic in a collision between the two ships, Sept. 10, 1922.

The James Stewart Grain Co. has given a contract to the Thunder Bay Harbor Improvement Co. for a pile foundation for the elevator which it is building at Port Arthur. The contract price for the foundation work is reported to be approximately \$150,000.

The Port Arthur Chamber of Commerce has requested the Dominion Public Works Minister to consider the inclusion in the estimates of an appropriation to provide for the extension of the breakwater, to protect the north end elevators, etc., at Port Arthur.

The N. Bawlf Grain Co. has given a contract to Barnett-McQueen Co., Fort William, for the construction of trestle work and foundations for a grain elevator to be built on the south end water front at Port Arthur, at a reported approximate cost of \$850,000. The amount of the contract now let, on which work is to be commenced at once, is reported as about \$150,000.

The United States Lake Survey reports the mean stages of the Great Lakes in feet above mean sea level for Dec. 1922 as follows: Superior, 602.08; Michigan and Huron, 579.15; St. Clair, 574.12; Erie, 571.13; Ontario, 244.64. Compared with the average December mean stages for the past 10 years, Superior was 0.34 ft. below; Michigan and Huron, 1.02 ft. below; Erie, 0.70 ft. below; Ontario, 0.89 ft. below.

The Saskatchewan Co-operative Elevator Co. is reported to have decided to build a storage annex of 2,000,000 bush. capacity to its elevator at Fort William, which will make it the third largest at the head of the Great Lakes. It is stated that several contracts in this connection

have been placed, and that work on the whole will be well under way by the spring. The reported estimated expenditure is \$1,500,000.

During the Minister of Public Works recent visit to Toronto, he received a deputation which urged that provision be made in the forthcoming estimates for the completion of the breakwater in the harbor, so that the work already carried out will be adequately protected. It was pointed out that there is an agreement between the Dominion Government and the Toronto Harbor Commissioners for the construction of a breakwater extending for 16,000 ft. along the waterfront, and about 4,000 ft. remains to be built along the waterfront of the Canadian National Exhibition grounds. The estimated cost of building the 4,000 ft. is \$800,000.

British Columbia and Pacific Coast.

The North Vancouver City Council has decided not to order a new ferry steamship, for which it was proposed to enter into a contract with Napier & Miller, Glasgow, Scotland, for £43,000, delivered at Vancouver.

A record loading is claimed at Vancouver, when the s.s. York City recently took aboard and trimmed 8,200 long tons (2,240 lb.) of bulk wheat in 23 hours, and completed the cargo with 800 tons of sacked grain between decks.

The C.P.R. British Columbia Coast Service s.s. Princess Victoria, completed 20 years service in Pacific coast waters recently. During that time, she travelled over 1,500,000 miles, and made 5,197 trips between Vancouver, Victoria and Seattle.

J. W. Troup, Manager, British Columbia Coast Service, C.P.R., Victoria, was given a 40 ft. war canoe by Alert Bay Indians, recently, as an appreciation of the Alert Bay tribes of the important part played by the C.P.R. in the development of Canada.

Evidence of relatives of those who lost their lives in the wreck of the C.P.R. s.s. Princess Sophia, on the Vanderbilt Reef, Portland Canal, in Oct., 1918, was taken at Victoria, Jan. 19, with a view to the assessment of damages. The question of

the company's liability is still before U.S. courts.

The s.s. Alaskan, owned by Capt. J. A. Baillies, Victoria, while bound from Victoria to Barkley Sound, Jan. 4, was wrecked at Pachena Point, the crew of 8 losing their lives. She was built at Onetta, Ore., in 1886, and was screw driven by engine of 13 h.p. Her dimensions were: length 96.5 ft., breadth 19 ft., depth 9.1 ft.; tonnage, 150 gross, 102 net.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert, on arrival at Prince Rupert, towards the end of December, was docked for her annual overhaul. The s.s. Prince George commenced her winter service Dec. 31, between Victoria, Seattle, Vancouver and northern ports, including Powell River, Ocean Falls, Swanson Bay, Prince Rupert, Stewart, Anyox, returning to Prince Rupert and thence to Vancouver and Victoria, on a weekly schedule. The s.s. Prince John is maintaining the Vancouver, Prince Rupert service, calling at Queen Charlotte Islands on a fortnightly schedule.

Quarantine Examinations on St. Lawrence River.—On the reopening of St. Lawrence navigation, the routine quarantine examination of passengers and ships' crews, will take place off Father Point, the medical officer boarding the ship with the pilot. Whenever quarantinable cases of sickness are found on board, the sick person and all persons who have been in contact, will be landed at Grosse Isle as heretofore, the medical officer in charge there being notified by wireless that such cases are to be landed. Ships found free from quarantinable diseases will receive their pratique at Father Point, and will thus be saved from calling at Grosse Isle.

Trans-Pacific Traffic Rates.—It is reported from Vancouver, B.C., that the trans-Pacific Conference Lines, at a meeting there, Jan. 8, unanimously adopted and signed the new trans-Pacific Conference agreement drawn along similar lines to that recently adopted by the North Atlantic Conference, under which lines running from the Atlantic coast to the far east are operating, and which provides principally for the maintenance of certain rates. This action places the far east trade on a satisfactory basis from a conference standpoint.

The Belchers Steamship Co. Ltd. has been incorporated under the Dominion Companies Act, with authorized capital stock of 2,000 shares of no nominal or par value, provided that it shall carry on business with not less than \$10,000 capital, with head office at Montreal, to own and operate ships and carry on a general transportation business on the high seas and inland waters. The incorporators are: L. Macfarlane, K.C., G. Barclay, W. B. Scott, A. Knatchbull-Hugessen and J. G. Cartwright, Montreal.

Vancouver Grain Shipments.—The amount of grain shipped from Vancouver during 1922, is reported as 11,512,698 bush., of which 7,252,700 were for the United Kingdom, and the balance for Oriental ports. The largest amount shipped in any one month was in December, 3,900,000 bush. It is stated that a larger amount could have been shipped, but for the inadequacy of the elevator facilities. The matter of increasing elevator accommodation is under consideration locally.

Grain Shipped from Fort William and Port Arthur.

The following table, prepared by the Board of Grain Commissioners, shows the quantity of each kind of grain shipped

	Wheat bush.	Oats bush.	Barley bush.	Flaxseed bush.	Rye bush.
To Canadian Ports—					
Collingwood	351,942				
Depot Harbor	221,048				
Goderich	15,110,669	2,870,843	478,230	401,908	70,031
Kingston		73,832			
Midland	10,757,940	2,867,609	884,605		542,474
Montreal	2,309,272	1,327,789	1,003,858	518,946	189,977
Port Colborne	38,724,564	5,559,589	3,076,943		
Port McNicoll	20,347,633	4,366,038	1,324,023		
Port Stanley	194,786				
Quebec		463,002			
Tiffin	8,711,952	510,340	489,102		121,597
Total to Canadian ports.....	96,729,810	18,039,045	7,256,763	920,855	924,080
To U.S. Ports—					
Buffalo	106,609,874	7,122,205	5,469,696	1,104,266	6,172,358
Chicago	1,012,087			34,233	
Detroit	106,989				
Duluth-Superior	105,000			512,765	
Erie	10,314,268				
Fairport	3,344,180				85,416
Milwaukee				90,000	
Port Huron	3,050,683		141,608		
Sandusky	80,972				
Toledo	4,027,591	587,166		174,687	80,000
Total to U.S. ports.....	128,651,648	7,709,372	5,611,304	1,915,951	6,337,769
Grand totals	225,381,458	25,748,418	12,868,068	2,836,806	7,261,849

In addition to the above, 28,897 lb. of sample mixed grain, and 16,673 tons of elevator screenings were shipped to

Canadian ports, and 270,624 lb. of sample mixed grain and 91,513 tons of elevator screenings to U.S. ports.

Canadian Pacific Railway Ocean Steamship Services.

A Liverpool report states that the company intends placing the s.s. *Montreal* in service again, after having been laid up for some time at Glasgow, Scotland. It is stated to be the intention to have her reconditioned and placed on the route between Glasgow and Montreal.

It is announced that the s.s. *Methven* will be transferred shortly to the West Indies service, and operated in conjunction with the *Mattawa* and *Montezuma*, providing a regular fortnightly service. Each of these ships has accommodation for a limited number of passengers.

Notwithstanding unsupported claims that the blue ribbon of the trans-Pacific steamship service has passed from the C.P.R. steamships to those of the U.S. Shipping Board, the fact rests that the superiority remains with the former. On the run from Victoria to Yokohama in December, the C.P.R. s.s. *Empress of Asia* left Victoria 21 hours after the U.S. Shipping Board's s.s. *President Jefferson*, and arrived at Yokohama 7½ hours ahead of her.

The first of the West Indies cruises from New York, commenced Jan. 20, with the sailing of the s.s. *Empress of Britain*; and a second cruise over the same route is scheduled for Feb. 20. The s.s. *Empress of France* sailed from New York, Jan. 22, under charter for a round the world cruise of about 120 days, the itinerary being: Havana, Panama Canal, San Francisco, Hilo, Honolulu, Japan, China, Manila, Java, Burma, India, Ceylon, Egypt, Naples, Havre, Southampton, Quebec, and rail to Montreal and New York. The s.s. *Empress of Scotland* will sail from New York, Feb. 3, under charter, for a Mediterranean cruise of about 65 days. After this winter, the company will manage its own cruises, instead of chartering any of its ships to other parties for such purposes, and arrangements are being made for one of the Pacific Ocean Empresses to sail from Vancouver, B.C., in Jan., 1924, on a cruise to New York, via the Panama Canal, calling at various ports en route. During the same month another of the Empresses will sail from New York on a Mediterranean cruise of about 10 weeks.

The Canadian Merchant Service Guild, British Columbia section's annual meeting was held at Vancouver recently, when reports were received on the work done in 1922. The officers for this year are: President, W. J. Boyce; Vice Presidents, B.C. Lakes, J. A. Macdonald; Northwest Territories, G. G. Brown; Vancouver, W. W. Best; Victoria, P. H. Brown; Yukon, J. O. Williams; Secretary, A. Goodlad; Treasurer, O. G. Kinnie. The representatives for the different classes of ships are: Ocean going, L. R. W. Beavis; local passenger, John Muir; local freight, C. E. Prince; towboats, J. L. Whyte; government, lighthouse, Public Works Department, G. Evans; fisheries boats, J. Iverson; pilot, H. Shatford; trustees, W. S. Moorehouse, K. E. Lawrey and R. Marshall.

The White Star Line Steamship Co., Ltd., has been organized at Berlin, Germany, to handle the White Star Line's business in that country, in connection with its recently inaugurated steamship service between Bremen and New York. The steamships *Canopic* and *Pittsburgh* are on that route, carrying cabin and third class passengers.

Interlake Navigation Co's Lake Steamships.

The Interlake Navigation Co., Montreal, bought the steamships *Bayersher* and *Bayusona*, from the Bay Steamship Co., London, Eng., recently, and transferred them to the Canadian register, subsequently changing their names to *Claremont* and *Roslyn*, respectively. The *Bayersher* was built at Toledo, Ohio, in 1910, and has steel hull, with hatches spaced 24 ft. centers, her dimensions being: length b.p. 220 ft., breadth moulded 40 ft., depth moulded 17 ft.; tonnage, 1,184 gross, 805 net. She is equipped with triple expansion engines with cylinders 17¼, 27½ and 43 in. diam., by 43 in. stroke; 800 h.p. at 125 r.p.m.; supplied with steam by 2 Scotch boilers, each 11 ft. diam. by 11 ft. long. She was originally named *Erwin L. Fisher*, and was owned by Argo Steamship Co., Cleveland, Ohio; she later passed to French ownership and was named *Port de Caen*, and since the conclusion of the war has been owned by Bay Steamship Co., London, Eng. The *Bayusona* was built at Toledo, Ohio, in 1902, her dimensions being: length 211.7 ft., breadth 40.1 ft., depth 13 ft.; tonnage, 1,367 gross, 795 net. She is screw driven by engine of 88 h.p. She was originally named *Usona*, and also passed to French ownership, when she was renamed *Port de St. Malo*, afterwards being bought by the Bay Steamship Co. The Bay Steamship Co. is a subsidiary of the Hudson's Bay Co., and owned about 20 steamships, all of which have been disposed of, and the company is being wound up.

Canadian Built Ships Offered for Sale by the French Government.—Towards the close of the war, the French Government ordered 20 wooden ships from the Foundation Co., which were built at Victoria, B.C., where that company had operated a wooden ship building plant during the war. These were offered for sale recently. They were operated for some time, and were laid up about two years ago, during which they have been overhauled. They are each about 2,500 tons gross, and are equipped with engines for a speed of about 10 knots an hour. It is stated that two have been sold to U.S. parties.

Compulsory Closing Date for Great Lakes Navigation.—Suggestions have been made recently that a date be fixed each year for the compulsory closing of navigation on the Great Lakes, on account of the risks involved. We are officially advised that no action has been taken by the Dominion Government, but that by next autumn consideration may be given to a proposal to close certain isolated light stations at an earlier date than in recent years, in order to reduce the risks to life and property in removing the keepers from those stations.

White Rock Tug Co., Ltd. has been incorporated under the British Columbia Companies Act, with \$50,000 authorized capital, and office at White Rock, B.C., to carry on a general towing, wrecking and salvaging business, and to own and operate ships for freight and passenger service.

France & Canada Steamship Corporation, Ltd., which prior to the war operated a number of ships between France and Canadian and U.S. ports, but which since the outbreak of war has done little, if any, business, is being wound up, with G. W. Scott, Montreal, as provisional liquidator.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Taylor & Arnold Engineering Co., Ltd., Montreal, has reorganized by admitting to the company some of its staff who have been with it for a considerable period, the organization being now as follows: Thomas Arnold, formerly President, now Chairman of the Board; A. M. Tirbutt, formerly Vice President, now President; J. W. Buckland, formerly Works Manager, now Vice President. James Cooke, Secretary-Treasurer, and Roy George, Western Manager, retain those positions, and have been elected directors.

Franklin Railway Supply Co.—C. J. Burkholder, Supervisor of Service, Franklin Railway Supply Co., New York, died, Dec. 22, 1922, at Kansas City, Mo., following an operation. He was born May 9, 1870, began railway work at Tyrone, Pa., and subsequently was a locomotive fireman and then a locomotive man on the Union Pacific, then going to the Kansas City Southern as a locomotive man, later becoming travelling engineer, trainmaster, general road foreman of locomotive engines and division superintendent. He then became a mechanical representative of the Economy Devices Corporation, which was afterwards merged with the Franklin Railway Supply Co. During the war, he returned to railway work, leaving the Franklin Co., of which he was then Western Sales Manager, on Nov. 1, 1918, to become Master Mechanic of the Kansas City Southern. On Jan. 1, 1921, he returned to the Franklin Co. as special engineer assigned to work in connection with the locomotive booster. On Oct. 1, 1921, he was made supervisor of service, which position he held at the time of his death.

White Patent Oil Burning Co., Newcastle-upon-Tyne, England, has appointed Charles Bishop, consulting engineer, etc., 17 St. John Street, Montreal, as its Canadian and United States representative.

Transportation Conventions in 1923.

March 13 to 15.—American Railway Association, Division 4, Engineering, Chicago, Ill. E. H. Fritch, 431 South Dearborn Street, Chicago, Ill.

March 13 to 15.—American Railway Association, Division 4, Signal Section, Chicago, Ill. H. S. Balliet, 30 Vesey Street, New York.

May.—International Railway Fuel Association, Cleveland, Ohio. J. G. Crawford, 702 East 51st Street, Chicago, Ill.

May 1 to 4.—Air Brake Association, Denver, Col. F. M. Nellis, 165 Broadway, New York.

May 7 to 9.—American Association of Engineers, Norfolk, Va. C. E. Brayer, 63 East Adams Street, Chicago, Ill.

May 9.—American Association of General Baggage Agents, Chattanooga, Tenn. E. L. Duncan, 332 South Michigan Ave., Chicago, Ill.

May 9 to 11.—American Railway Development Association, St. Louis, Mo. A. Leckie, Industrial Agent, Kansas City Southern Ry., Kansas City, Mo.

May 16 to 18.—Association of Railway Claim Agents, Denver, Col. H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

May 22 to 24.—American Railway Association, Division 6, Purchases and Stores, Chicago, Ill. W. J. Farrell, 30 Vesey Street, New York.

June 13 to 15.—American Association of Railroad Superintendents, Kansas City, Mo. J. Rothschild, 400 Union Station, St. Louis, Mo.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, acting Chairman, 805 Boyd Bldg., Winnipeg, Man.

Canadian Electric Railway Association—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, acting Chairman, 805 Boyd Building, Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke Street, Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, 187 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Office, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

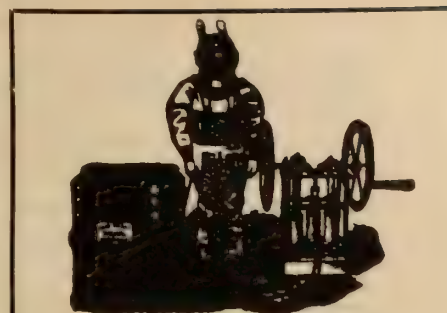
Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorflier, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Building, Winnipeg, Man.

India Transportation Co. Ltd. has been incorporated under the Dominion Companies Act, with \$40,000 authorized capital, and office at Sarnia, Ont., to own and operate ships and carry on a ship-building and common carrier's business. The incorporators are: H. B. Reid, J. T. Fuller, J. R. Donohue, G. McCrae, Sarnia, Ont., and J. T. Reid, Port Huron, Mich.



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QUEBEC CENTRAL RAILWAY COMPANY

The Quebec Central Railway Company will apply to the Parliament of Canada, at its next session, for an Act:—

(1) Extending the time for completion of the line of railway which it was authorized to construct by Statute of the Province of Quebec, 1906, Chapter 58, namely, a line of railway to be known as the Quebec Central Railway Chaudière Extension, by diverting and re-building that portion of the present line from Beauce Junction to Beauceville, and building a line of road from Beauceville to the river Famine, thence following the river Famine to its watershed near the Village of Langeville, and thence following the watershed of the river St. John through the southern portion of the Counties of Beauce, Dorchester, Bellechasse, Montmagny, L'Islet, Kamouraska and Temiscouata, to or near a point on the Temiscouata Railway at or near Cabano Station, with power to connect with the line of railway of the said Temiscouata Railway Company, in all a distance of about one hundred and seventy-five miles;

(2) Extending the time for commencement and completion of the line of railway which it was authorized to construct by Statute of the said Province, 1912, Chapter 81, namely, from a point on the main line of the Quebec Central Railway in, at or near Leeds Station in the Township of Thetford or the Township of Broughton, through Thetford, Broughton and Leeds and the Counties of Lotbinière and Lévis, such line connecting with the branch of the Quebec Central Railway extending from Scott's Junction to the Quebec Bridge, at a point at or near St. Lambert, in the County of Lévis, a distance of about thirty-five miles;

(3) Increasing the bonding powers of the said company.

Dated at Montreal, this 18th day of December, 1922.

H. C. OSWALD,
Secretary.

Andrew T. Thompson, K.C.,
Ottawa Agent.

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MANITOBA & NORTH WESTERN RAILWAY COMPANY OF CANADA

The Manitoba & North Western Railway Company of Canada will apply to the Parliament of Canada, at its next session, for an Act extending the time for commencement and completion of the lines of railway which it was authorized to construct by Statute of Canada, 1921, chapter 65, namely:—

(a) From a point at or near Tuffnell on its line of railway in or about Township thirty, Range ten or eleven, West of the Second Meridian, thence north-westerly, northerly, and westerly to a crossing of the North Saskatchewan River in or about Townships forty-nine, fifty or fifty-one, Range fourteen or fifteen, West of the Second Meridian, thence to the City of Prince Albert;

(b) From a point at or near Theodore in or about Township twenty-eight, Range six or seven, West of the Second Meridian, thence in a generally westerly direction to a point between Govan and Lanigan on the Pheasant Hills Branch of the Canadian Pacific Railway.

Dated at Montreal, this 18th day of December, 1922.

H. C. OSWALD, Secretary.

Andrew T. Thompson, K.C.,
Ottawa Agent.

OTTAWA, NORTHERN & WESTERN RAILWAY COMPANY

The Ottawa, Northern & Western Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time for commencement and completion of the line of railway which it was authorized to construct by Statute of Canada, 1919, chapter 91, from the present terminus of its so-called Waltham Branch at Waltham, in the Province of Quebec, thence through the Townships of Waltham, Chichester and Sheen, thence across the Ottawa River to a junction with the Canadian Pacific Railway at or near Chalk River, in the Province of Ontario.

Dated at Montreal, this 18th day of December, 1922.

H. C. OSWALD, Secretary.

Andrew T. Thompson, K.C.,
Ottawa Agent.

Positions Wanted

RESPONSIBLE POSITION wanted. Traffic or Operating Department of marine transportation company, by young married man. Experienced in inland steamships. Holds diploma for Interstate commerce and railway traffic course. Best references. Box A1624, Canadian Railway and Marine World.



Sealed Tenders addressed to the undersigned, and endorsed "Tender for Esquimalt Dry Dock Machinery," will be received at this office until 12 o'clock noon, Thursday, February 15, 1923, for the construction and installation of pumping and other machinery for the Dry Dock, at Esquimalt, B.C.

Plans and forms of contract can be seen and specification and forms of tender obtained at this Department, at the offices of the District Engineer, Post Office Building, Victoria, B.C.; Post Office Building, New Westminster, B.C.; Customs Building, Main Street, Winnipeg, Man.; Equity Building, Toronto, Ont.; and Shaughnessy Building, Montreal, Que.

Tenders will not be considered unless made on printed forms supplied by the Department and in accordance with conditions contained therein.

Each tender must be accompanied by an accepted cheque on a chartered bank, payable to the order of the Minister of Public Works, equal to 5 p.c. of the amount of the tender. War Loan Bonds of the Dominion will also be accepted as security, or war bonds and cheques if required to make up an odd amount.

Note.—Blue prints can be obtained at this Department by depositing an accepted bank cheque for the sum of \$10, payable to the order of the Minister of Public Works, which will be returned if the intending bidder submit a regular bid.

By order,
R. C. DESROCHERS,
Secretary.

Department of Public Works,
Ottawa, November 25, 1922.

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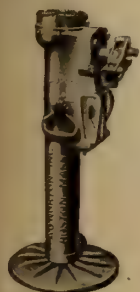
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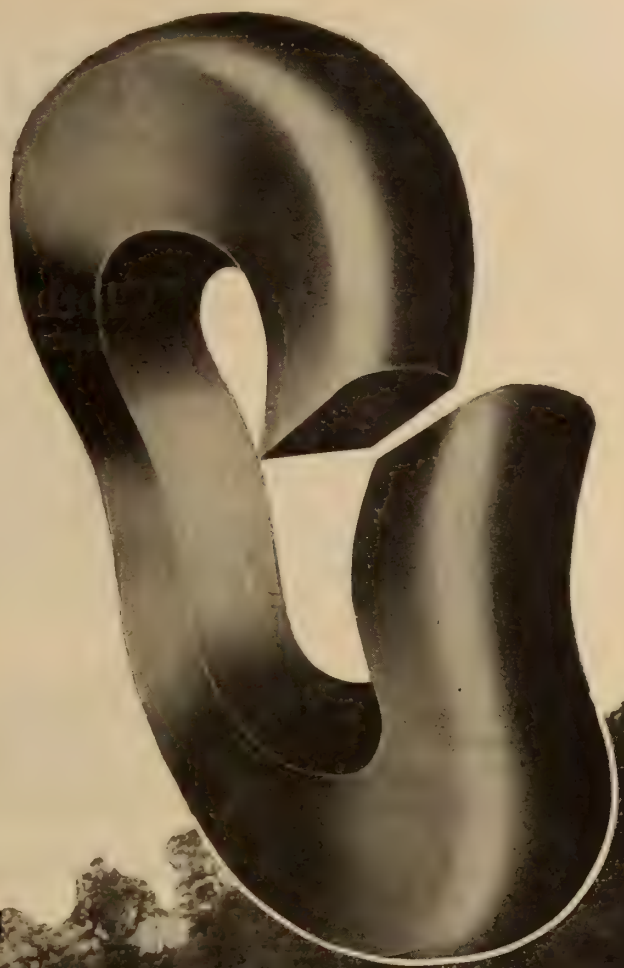
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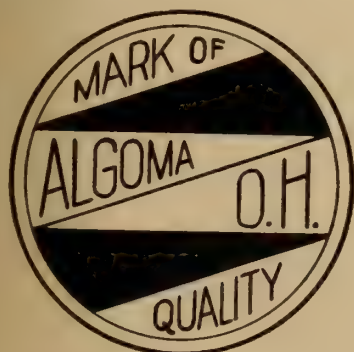
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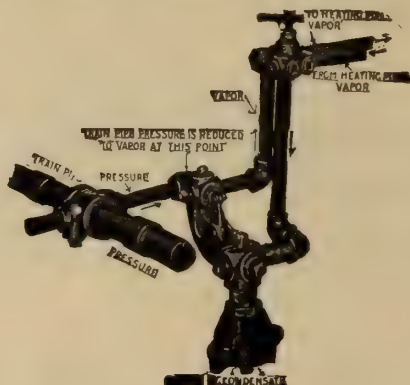
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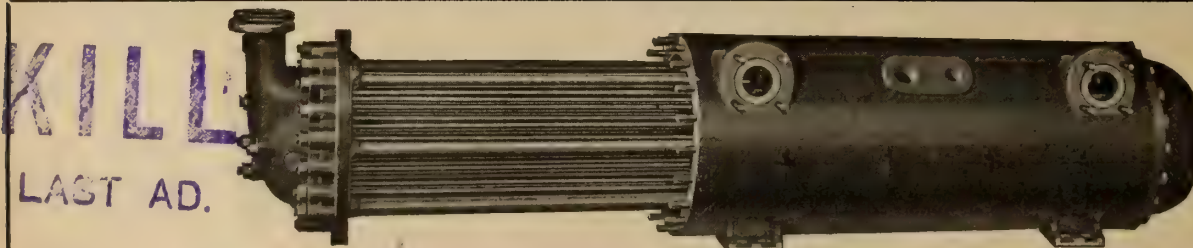
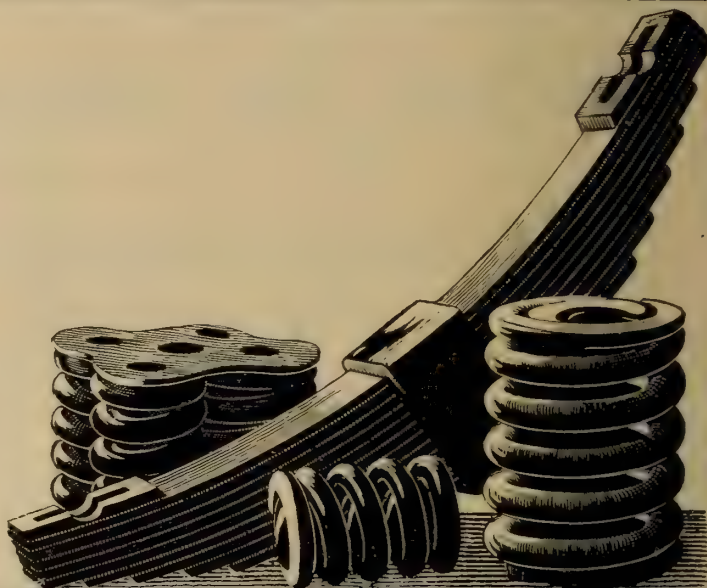
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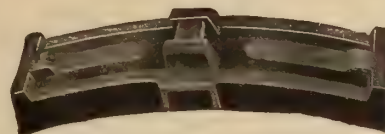
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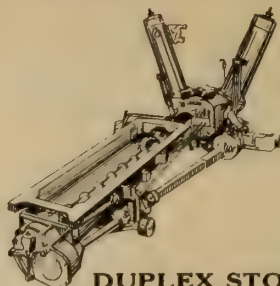
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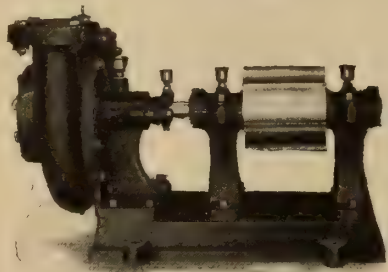
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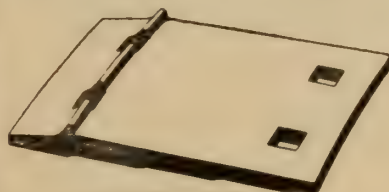
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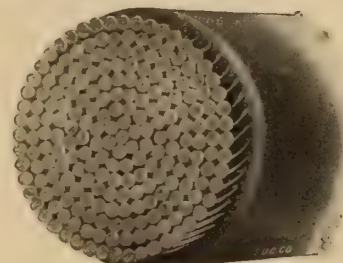
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Washout Water at 120°.

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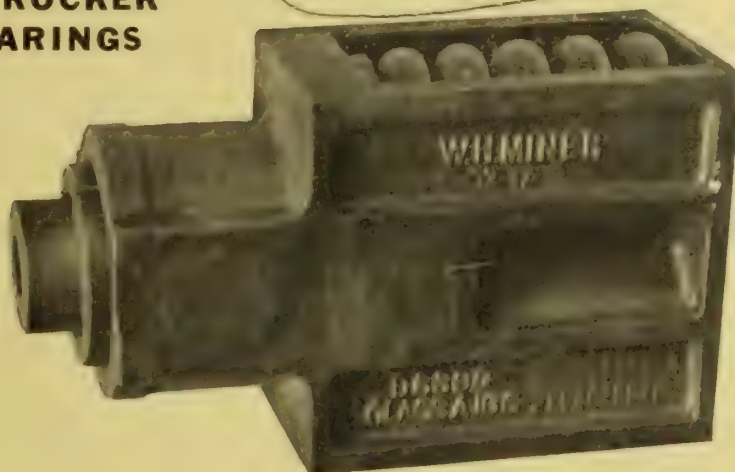


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Service

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Easier to
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Lighter in
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Designed for equipment undergoing repairs to meet A.R.A. requirements

Consolidated Equipment Company, Limited

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(Particulars furnished on application)

Canadian Railway AND Marine World

Founded in 1898 by Acton Burrows.

Number 301.
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TORONTO, CANADA, MARCH, 1923

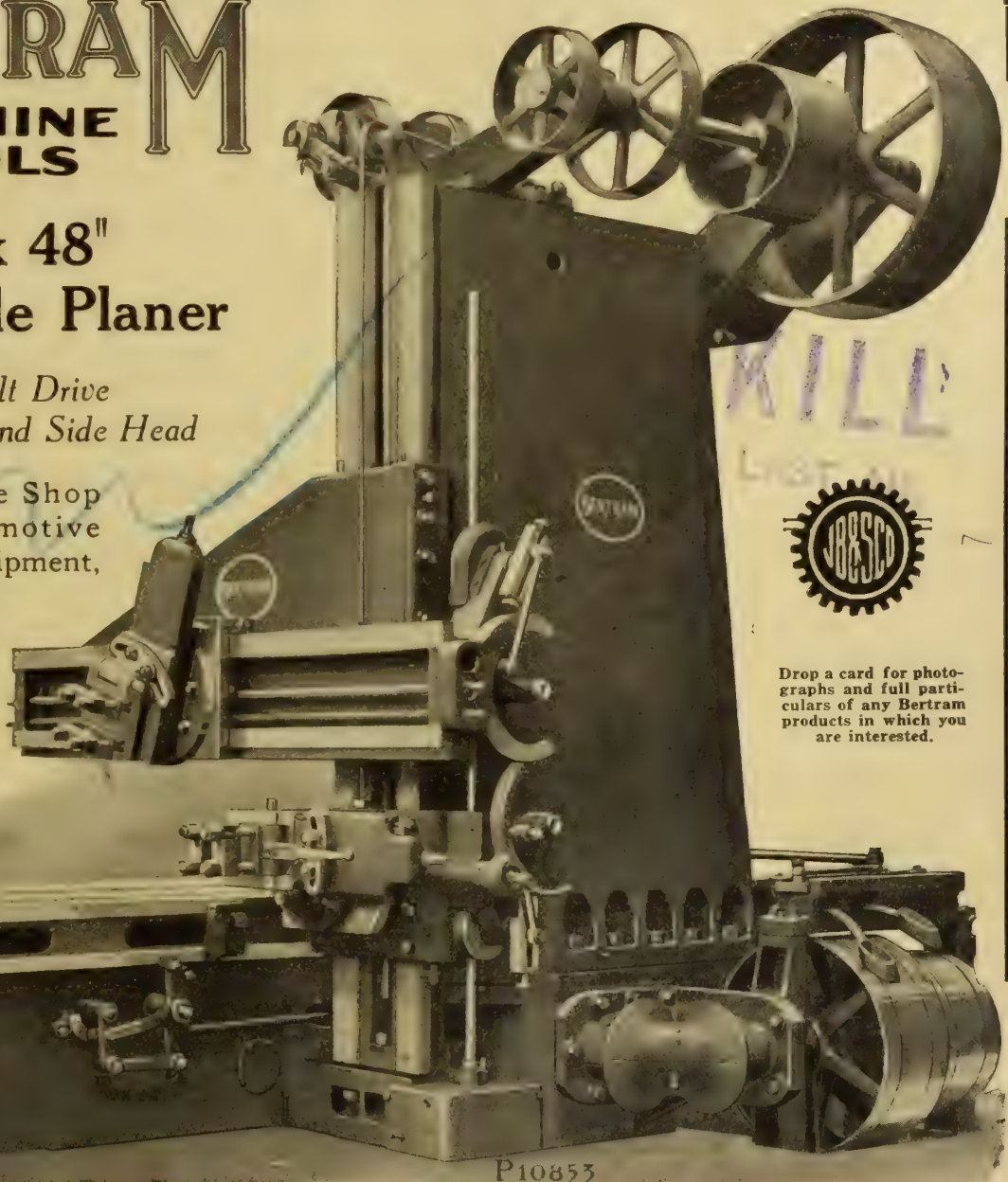
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48" x 48" Open Side Planer

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General Machine Shop
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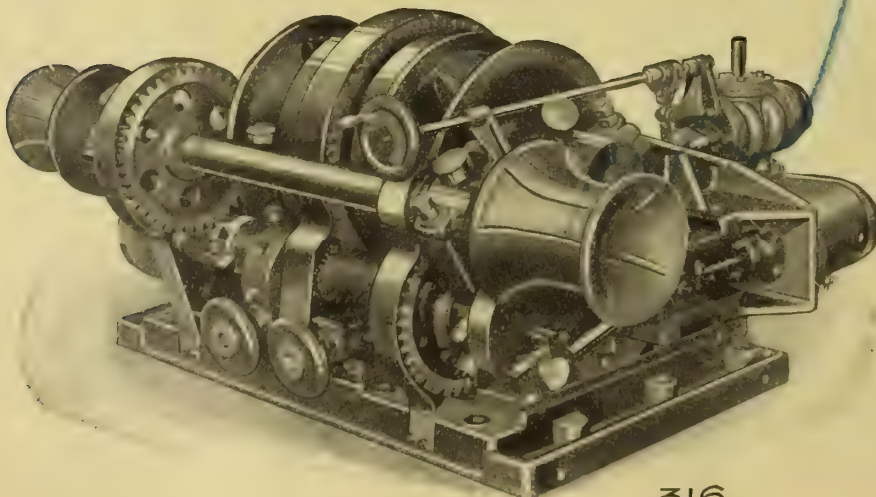


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This windlass handles anchor chains from $\frac{7}{8}$ " to $1\frac{1}{2}$ ". It has triple steel gear reduction, and is fitted with gypsies on the intermediate shaft to secure high speed for warping. Equipped with reversing throttle and heavy brake bands on both wild cats. Same type made for any size of anchor chain.

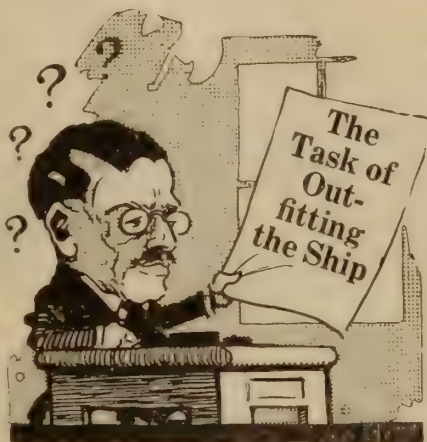
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WHAT SHIP OPER- ATORS BUY

The 116 articles noted in the adjoining columns are, for the most part, mere indexes of groups of things the Steamship Companies have to buy.

And, almost always, they must buy in a hurry, using the best judgment of the moment, based on prior experience and trust to luck, or an overruling providence, that they have not made many mistakes.

The advertisements they read in

Canadian Railway and Marine World

help them in their selection. But, you men who use these columns, can make them vastly more helpful, by telling the story of your goods in detail, frankly, fairly, honestly.

Ship operators are now planning for supplies and equipment for the coming season's operation; so now is the time to give them your sales message, when they are in a buying mood.

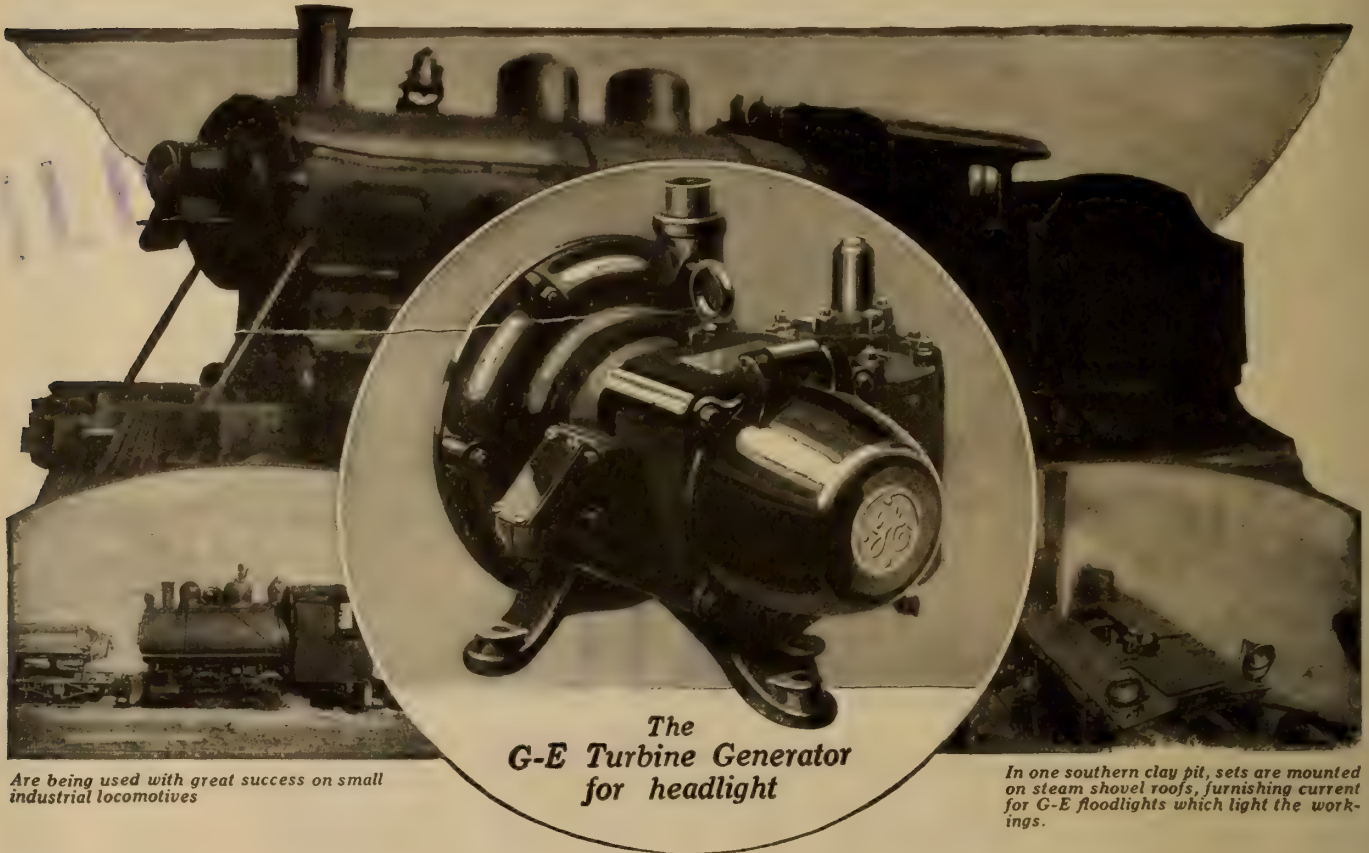
CANADIAN RAILWAY AND MARINE WORLD

Toronto *Member of* Canada
Audit Bureau of Circulations,
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Canadian National Newspapers and Periodicals
Association,
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 Liquors.
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 Locks.
 Lights.
 Lighting System.
 Laundry Machinery.
 Marconi Wireless.
 Marble.
 Medicine Chests.
 Markers, Linen.
 Nautical Equipment.
 Oil, Fuel and Lubricating.
 Oil Storage Equipment.
 Ovens.
 Packings.
 Pumps.
 Pianos, Gramophones.
 Propeller Blades.
 Pethoscope.
 Plumbing Supplies.
 Ropes, Wire.
 Refrigerators.
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 Scales.
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 Shaft.
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An accurate maintenance record tells the unvarnished truth about a machine. It can always be consulted with confidence



Are being used with great success on small industrial locomotives

*The
G-E Turbine Generator
for headlight*

In one southern clay pit, sets are mounted on steam shovel roofs, furnishing current for G-E floodlights which light the workings.

Over Three Years in Operation Upkeep Only 37 Cents a Month

On one American railroad more than 250 G-E Headlight Turbine Generator Sets have been in operation for over three years. A carefully kept maintenance record shows but 37 cents a month per machine for spare parts. This exceedingly low upkeep, coupled with the dependability of this sturdy lighting set, accounts for its increasing popularity with engineers and executives.

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Galena Gas Engine Oil
Galena Turbine Oil
Galena Flange Oil
Galena Motor Car Oil
Galena Air Pump Oil
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Galena Ball Bearing Oil
Galena Chain Oil
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Galena Electric Generator Oil
Galena Hydraulic Jack Oil
Galena Red "B" Machinery Oil
Galena Gear Case Oil
Galena Tempering Oil
Galena Rope Oil
Galena Thread Cutting Oil

Galena Brake Rigging Oil
Galena Perfection Signal Oil
Galena Railway Safety Oil
Galena Longtime Burner Oil
Galena Air Brake Compound
Galena Driving Journal Compound
Galena Hot Box Compound
Galena Gear Compound
Galena Perfection Compound
Galena Rod Cup Grease
Galena Hub and Center Plate Grease
Galena Gear Grease
Galena Motor Grease
Galena Pinion Grease
Galena Pneumatic Tool Grease
Galena Roller Bearing Grease
Galena Ball Bearing Grease
Galena Belt Chain Grease
Galena Cable Grease
Galena Graphite Axle Grease
Galena Soft Black Grease
Galena Hard Black Grease
Galena Graphite Plunger Grease
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Each brand of highest quality and tested by years of service. Made in different consistencies to suit degree of climate or type of equipment. Our Service Engineers will recommend the kind best suited to your requirements.

"Galena Quality is an Assurance of Efficiency and Economy!"

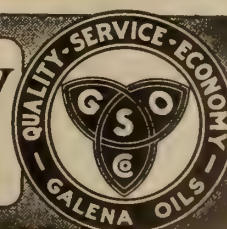


Galena-Signal Oil Company

of Canada, Limited

Toronto

Montreal



KILL
LAST AD.



Where Journal Lubrication is most Difficult

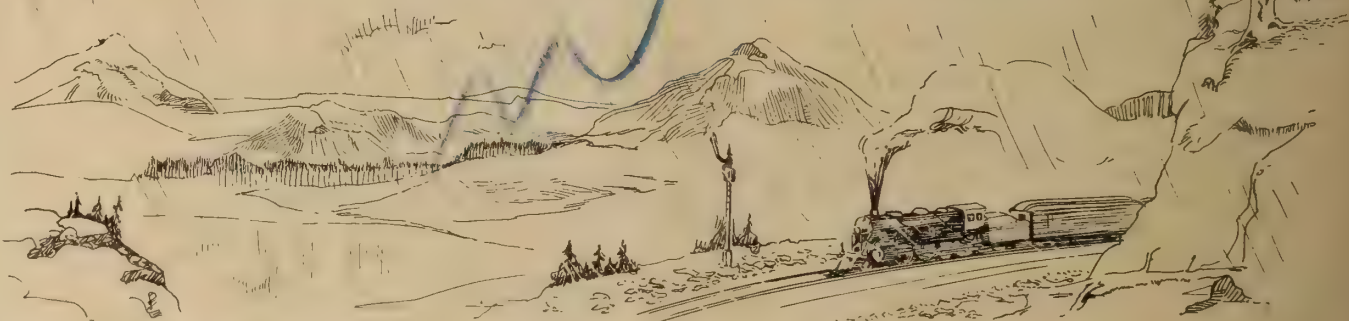
It is a significant fact that Canadian Railway men showed an instant interest in the Stafford Roller Bearing for car trucks.

Knowing the serious effects of frozen packing and oil, the immense increase in train resistance caused by low temperatures, and the difficulty of doing anything to relieve these conditions, the Stafford Roller Bearing made an instant appeal. Several Canadian railways have

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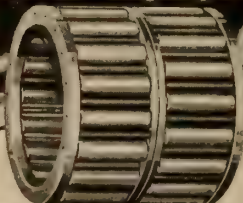
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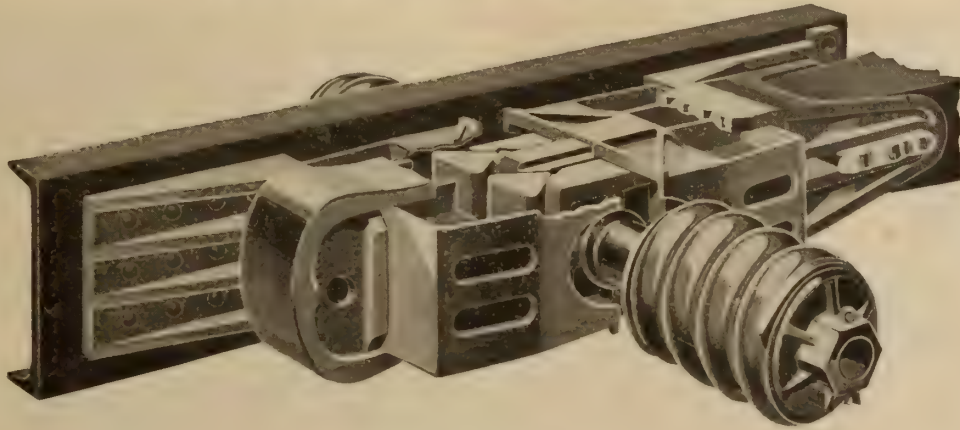
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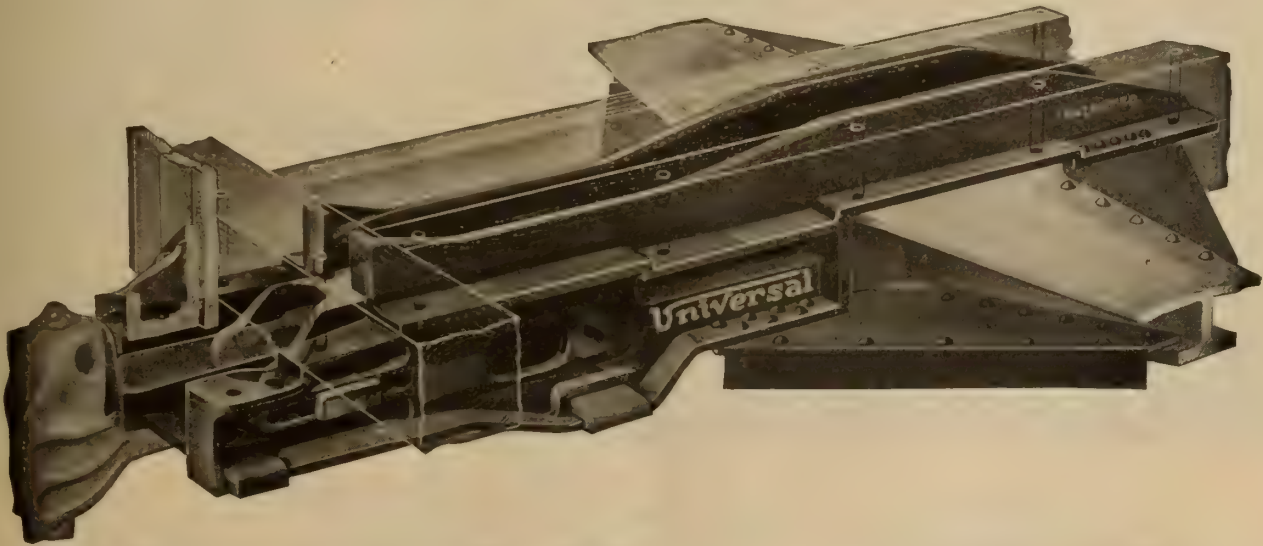
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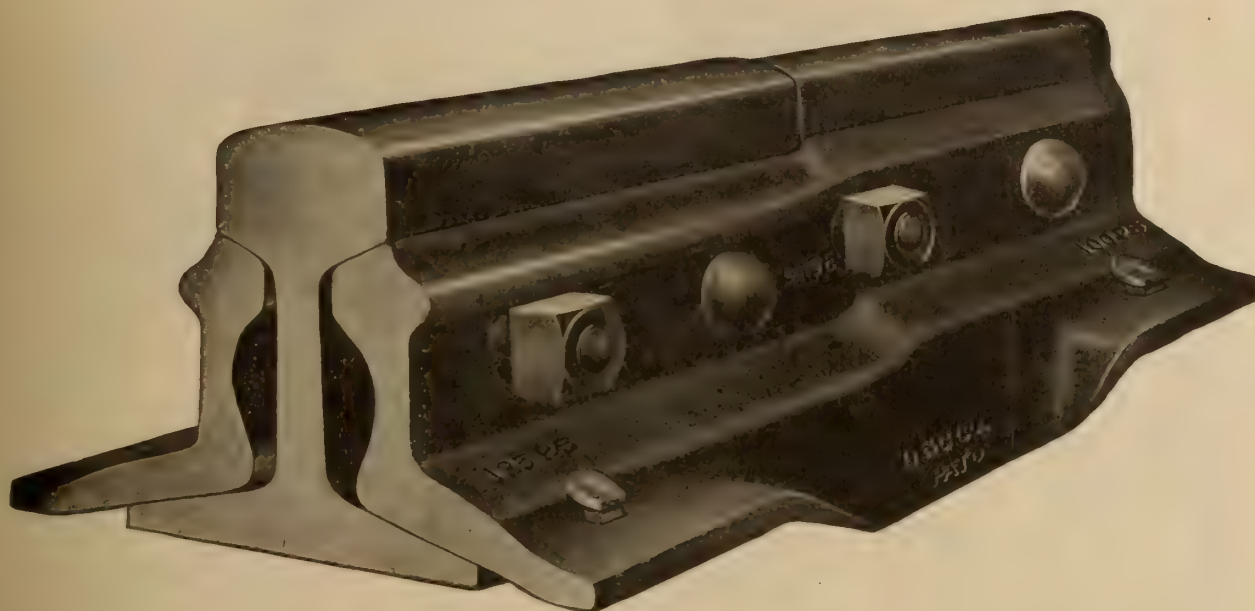
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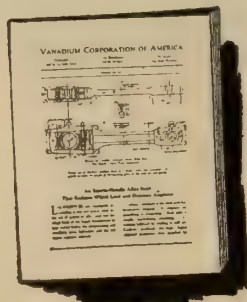
	CHEMICAL ANALYSIS					PHYSICAL TEST			
	C.	Mn.	P.	S.	Van.	E.L.	T.S.	Elong.	R.A.
Plain Carbon	.48	.69	.016	.032		46,960	90,170	21.5	37.5
Carbon Van.	.48	.68	.019	.024	.15	66,500	100,000	22.5	41.0
Plain Carbon	.50	.62	.014	.036		49,220	89,900	23.0	36.6
Carbon Van.	.50	.57	.027	.023	.16	63,940	101,900	24.0	43.1

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*(See Railway Mechanical Engineer, December, Page 676, letter from "Designer," and table showing the chemical compositions and comparative physical properties of fourteen normalized plain carbon steel forgings and twelve normalized Carbon-Vanadium Steel Forgings.)



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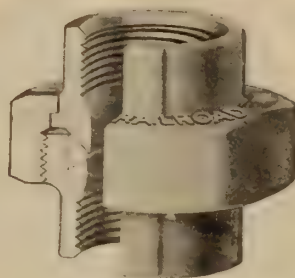


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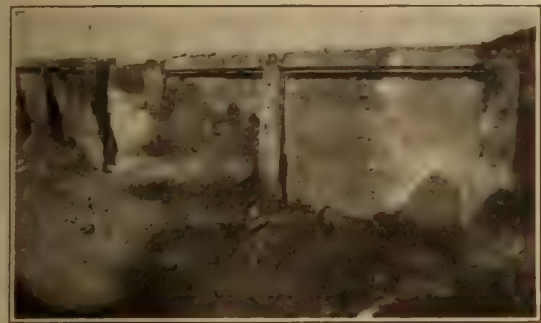


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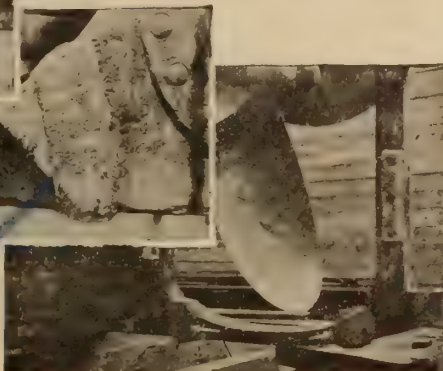
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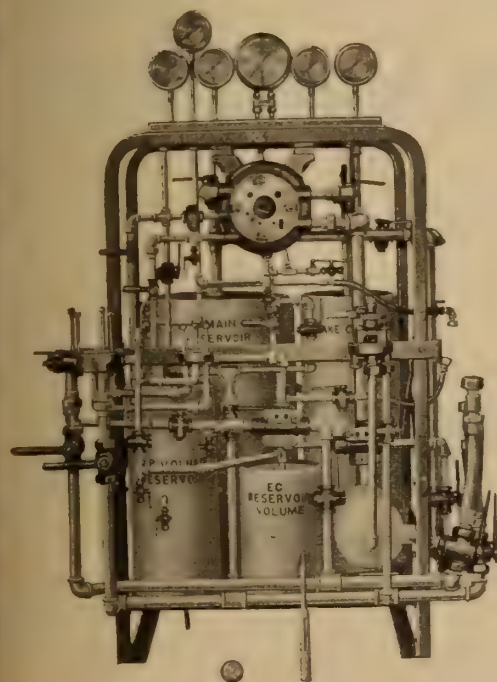
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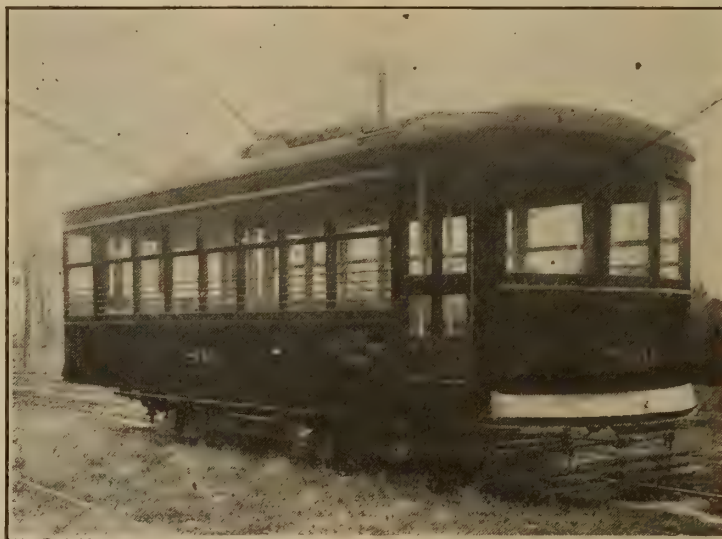
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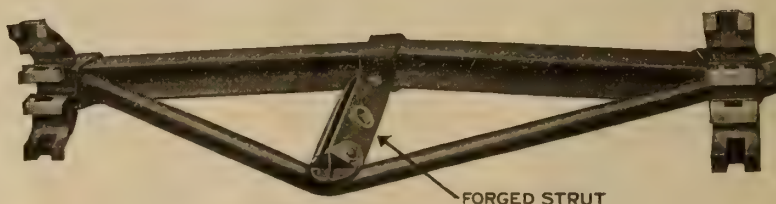
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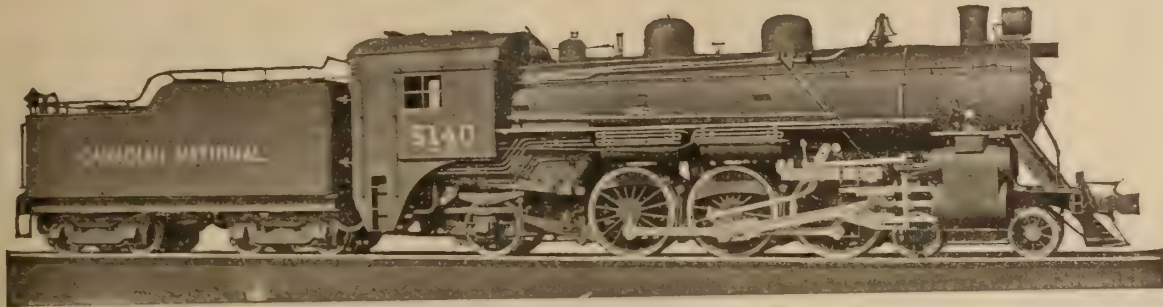
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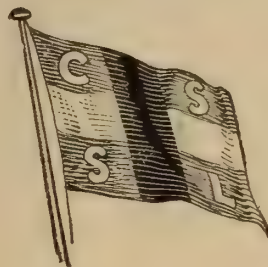
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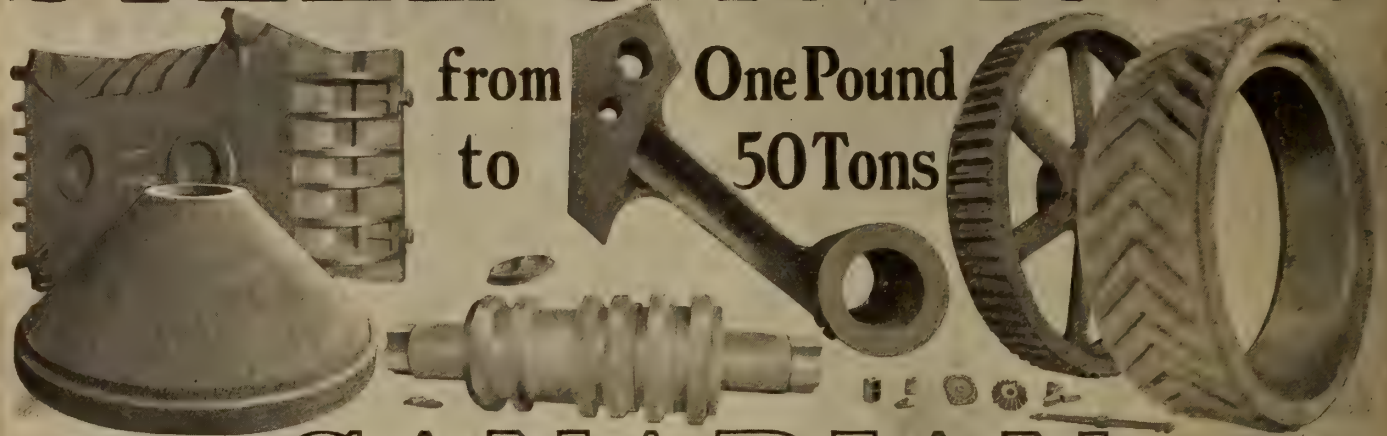
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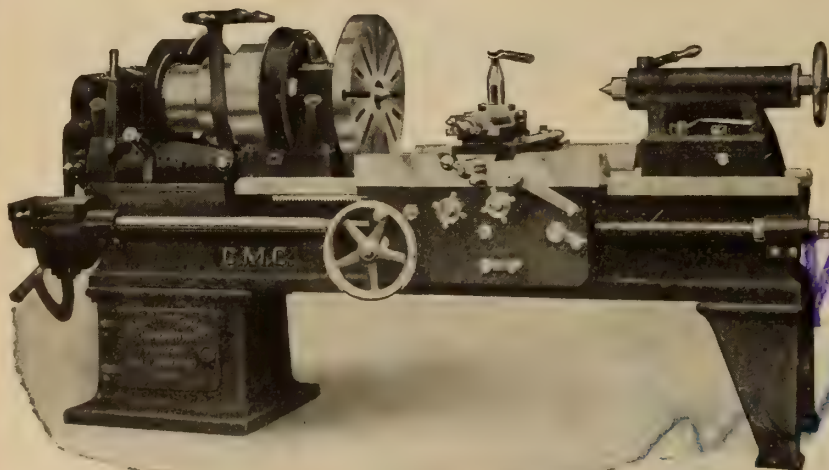
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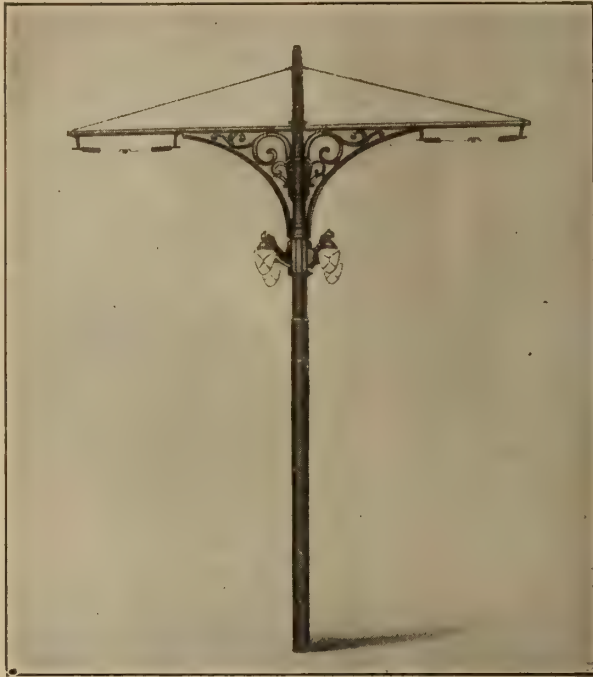
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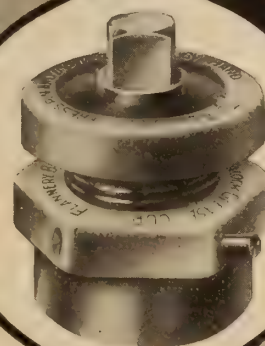
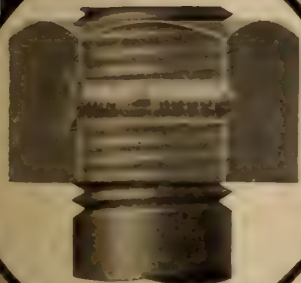
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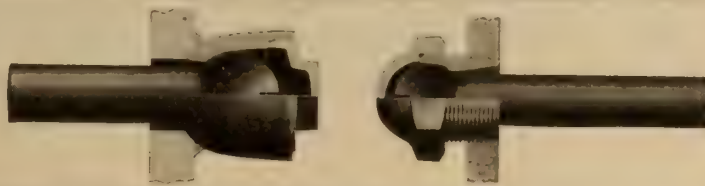
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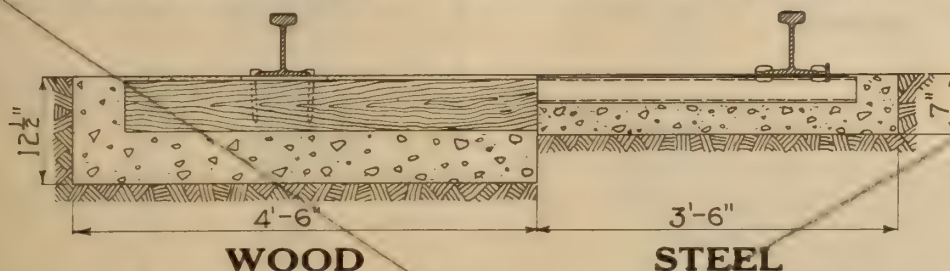
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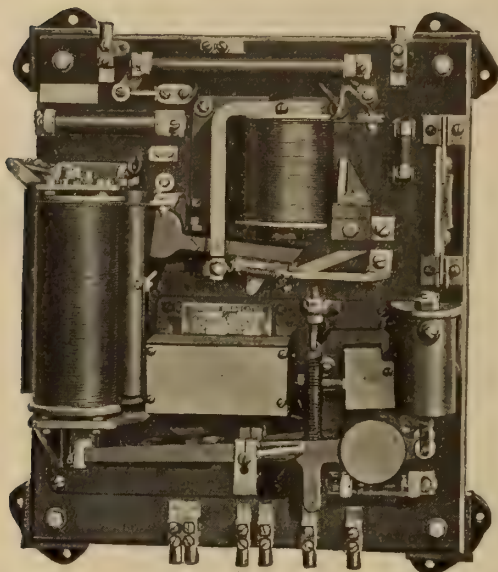
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At central or local storehouses where oils are drawn almost constantly, speed is an important factor.

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(With boss)

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Line Material for this
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You will find our trolley ears, splicers, frogs, crossings and hangers will give service that few other makes will.

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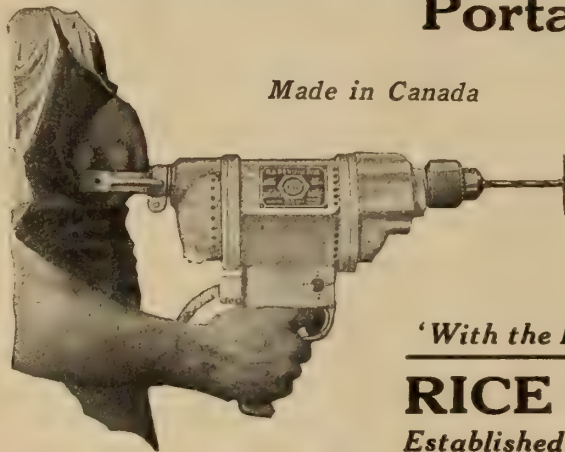
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Exceptionally powerful, yet light in weight. Particular attention has been paid to balance, with the result that they are comfortable to handle and easy to use.

The design and construction of these drills are the result of years of experience. Fast work with greatest comfort and long life are the main characteristics.

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For excavating purposes and the handling of ore, crushed stone, sand, gravel, coal, etc., the O. S. Dependable Clam Shell and Orange Peel Buckets are leaders. Manufactured and designed with the same care and precision as our Locomotive Cranes and Pile Drivers.

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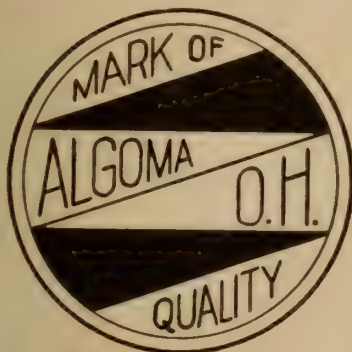
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Montreal



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Manufacturers of

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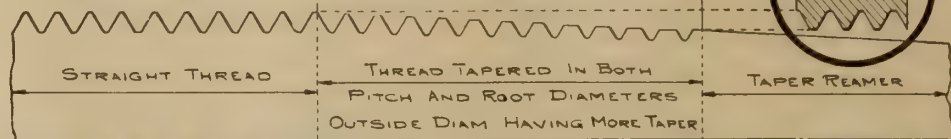
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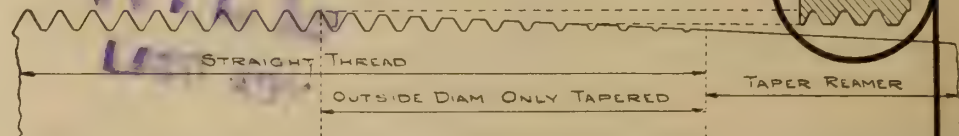
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NIAGARA FALLS, ONT., CANADA

Pratt & Whitney Tap Cuts Full Threaded Hole



So-Called "Easy-Cutting" Tap Cuts Weak, Shallow Thread.



Which is best for the boiler sheet

An easily tapped hole cut to less than full depth or a full threaded hole that insures maximum strength

WHILE ease of cutting has long been a strong talking point in selling some makes of staybolt taps, just a little thought on the subject will show that ease of cutting is at best only an apparent advantage which actually has serious mechanical drawbacks.

One of these easy-cutting staybolt taps is shown in section above. It is claimed that you cannot tell where the taper begins. This statement implies one of two things. Either that you are ignorant of the proper use of thread micrometers or that the tap in question actually had no taper thread. In other words, this tap is tapered only on the outside diameter but is straight in the angle and root diameters.

Such a tap having a straight thread, at the point where the thread begins, the threads are mere tool marks and the lands are very wide. When driven at high air drill speeds, these first threads fail to start cutting, but keep on reaming until the hole is enlarged

beyond the root diameter of a full thread.

The cross section in the circle shows what happens. Such threads cut slightly easier since less work is performed, but the holding qualities of the boiler sheet are proportionately reduced.

In designing P. & W. Staybolt Taps our aim has always been to produce a tap that will cut a full thread, thus ensuring maximum strength in the boiler sheet. P. & W. Staybolt Taps for that reason have both straight and taper threads, the taper section being tapered both on the outside diameter and in the angle and root diameters. The tendency is to stop reaming and start cutting the thread, because threads are relatively deeper and lands are narrower between threads, and as a result a full and smooth thread is produced. The sectional view above shows why this thread is bound to hold stronger than the other.

It's not very hard to figure out which is better for the boiler

**PRATT & WHITNEY COMPANY
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PRATT & WHITNEY STAYBOLT TAPS

Canadian Railway and Marine World

March, 1923

Grand Trunk Railway Co. Amalgamated with Canadian National Ry. Co., and Co-ordinated.

Grand Trunk Stocks Vested in Dominion Government.

The following was approved by the Governor General on Jan. 19 and passed as order in council 114:—"The committee of the Privy Council have had before them a report, dated Jan. 18, 1923, from the acting Minister of Railways and Canals, stating that pursuant to the act respecting the acquisition by His Majesty of the Grand Trunk Railway System, Statutes of Canada, 1919 chap. 17 and the agreement therein authorized, which is set out in full and confirmed, with minor amendments, by the Statutes for 1920, chap. 20, the arbitration board constituted for the purpose of determining the value, if any, to the holders thereof of the following capital stocks of the G. T. R. Co. of Canada, viz: namely:—1st preference stock, 5%, £3,420,000; 2nd preference stock, 5%, £2,530,000; 3rd preference stock, 4%, £7,168,055; ordinary or common stock, £23,955,437; total, £37,073,492; hereinafter together referred to as the preference and common stock, on Sept. 7, 1921, made an award wherein the majority of the Arbitrators, Sir Walter Cassels and Sir Thomas White, decided that the stock in question had no value. Hon. W. H. Taft, the arbitrator appointed by the company, dissented. That subsequently an appeal was taken by special leave to the Judicial Committee of the Privy Council, based largely upon the question whether the arbitrators in excluding evidence as to the physical assets of the company were wrong in law. The arbitrators had arrived at the conclusion above mentioned upon the principle that the value of the preferred and common stock was to be ascertained on the basis of the net earning capacity of the company, both actual and potential, which net earning capacity, had any been found, would then be capitalized. The Judicial Committee, after hearing and considering the arguments, dismissed the appeal, stating in their reasons for judgment, which were delivered on Nov. 10, 1922, that any attempt to estimate future profits by reference to selling value or replacement cost was doomed to failure, and accordingly that the arbitrators, to whom the agreement gave a wide discretion as to the admission of evidence, were justified in refusing to embark upon such an enquiry.

"That there being no further or other appeal available to the company, the arbitrators award stands, and accordingly His Majesty the King, in the right of the Dominion of Canada, is now entitled to the whole of the preference and common stock and to the immediate transfer thereof to the Government, or its nominees, without the issue to the holders thereof of any of the new guaranteed stock. The agreement contemplated an issue to the holders of the preference and common stock of what was therein described as the new guaranteed stock, to an amount equal to the value fixed by the award. Since, how-

ever, the arbitrators have found the preference and common stocks to be without value, the holders are not entitled to anything.

"That clause 13 of the arbitration agreement in part provides that 'should any shares or any part of the preference and common stock not be transferred to the Government, the Governor in council may declare such shares to be the property of the Minister of Finance in trust for His Majesty, and upon the making of such declarations the shares or part



Gerard Ruel, K.C.,
Director, Vice President and General Counsel,
Canadian National Railways.

thereof not so transferred shall immediately become the property of His Majesty, and proper entries thereof in the stock registers and other books in that behalf shall be made.'

"That no part of the said shares, or of the preference and common stock, has been transferred to His Majesty, nor to the Government, nor to any person acting in such behalf, or in trust for His Majesty or the Government, and it is accordingly expedient that a declaration shall be made under the provisions of clause 13 of the agreement, vesting the said shares and stocks in His Majesty. The Minister therefore recommends that it be declared by your Excellency in council that the whole of the preference and common stock of the Grand Trunk Ry. Co. of Canada, as described in the arbitration agreement, and as referred to in the award and in the judgment of the Judicial Committee of the Privy Council, is the property of the Minister of Finance, in trust for His Majesty,

and directing that proper entries thereof in the stock registers and other books of the company in that behalf shall forthwith be made. The Committee concur in the foregoing recommendation and submit the same for approval."

Grand Trunk Railway Co. Amalgamated with Canadian National Railway Co.

The following was approved by the Governor General on Jan. 10 and passed as order in council 181:—"The committee of the Privy Council have had before them a report, dated Jan. 30, 1923, from the acting Minister of Railways and Canals, representing that all the voting capital stock of the Grand Trunk Ry. Co. of Canada, amounting to £37,073,492, being now by virtue of the order in council of Jan. 19, the property of the Minister of Finance, in trust for His Majesty in the right of the Dominion of Canada, it is expedient that the said company should be amalgamated with the Canadian National Ry. Co. so as to form one company under the name of the Canadian National Railway Company. Under sec. 21 of chap. 13 of the Statutes of 1919, which is the act under which the Canadian National Ry. Co. is incorporated agreements for the purpose, among others, of amalgamation may, with the approval of the Governor in council, on the recommendation of the Minister of Railways and Canals, be entered into between the Canadian National Ry. Co., and any other railway company approved by the Governor in council. Under sec. 151 of the Railway Act, 1919, every such agreement for amalgamation should first be approved by two-thirds of the votes of the shareholders of each company party thereto. The Minister states that the amalgamation agreement submitted herewith was duly approved by unanimous vote at a meeting of shareholders of the Grand Trunk Ry. Co. of Canada at which all the voting capital stock of the Company was represented by proxy given by the Minister of Finance. Under sec. 9 of the said act, whenever under the provisions of The Railway Act, or any other statute or law, the approval, sanction or confirmation by shareholders is required, such approval, sanction or confirmation may, in respect of the Canadian National Ry. Co., be given by the Governor in council. The directors of the two companies, parties to the said agreement, have also duly approved of the form and terms of the agreement, and authorized its execution by the proper officers of the two companies under their respective corporate seals.

"The Minister, on the advice of the Assistant Deputy Minister of Railways and Canals, accordingly recommends:—That the Grand Trunk Ry. Co. of Canada be approved as a railway company with which the Canadian National Ry. Co. may enter into an agreement for amalgamation, pursuant to sec. 21 of the act. That pursuant also to sec. 21 of the act, the amalgamation agreement herewith submitted be approved as an

agreement providing for the amalgamation of the Canadian National Ry. Co., and the Grand Trunk Railway Co. of Canada. That pursuant to sec. 9 of the act, the agreement be also approved in substitution for the approval of the shareholders of the Canadian National Ry. Co., and that the directors of the Canadian National Ry. Co. be authorized to take all necessary steps to complete the amalgamation and to carry the same into effect. That pursuant to sec. 3 of the act, it be declared that the Canadian National Ry. Co. as constituted by such amalgamation, shall have a capital stock in amount sufficient to accomplish the purposes of the said agreement, that is, a capital stock of \$180,424,327.70, and that one share may be issued for the whole of such amount, such share, however, to be subsequently divisible into any number of shares of lesser denominations of equal or unequal amounts, as may be requested from time to time by the Minister of Finance, with the approval of the Governor in council. That the Minister of Finance shall be registered on the books of the amalgamated company as the holder, in trust for His Majesty, of the share of stock in the amalgamated company issued to him under the provision of clause 6 of the agreement, and upon such registration being made may surrender to the amalgamated company, pursuant to the provisions of clause 6, the shares in the capital stock of the Grand Trunk Ry. Co. of Canada in such clause referred to. The committee concur in the foregoing recommendations and submit the same for your Excellency's approval.

In accordance with the foregoing the amalgamation became effective on Jan. 31.

Montreal Selected as Headquarters.

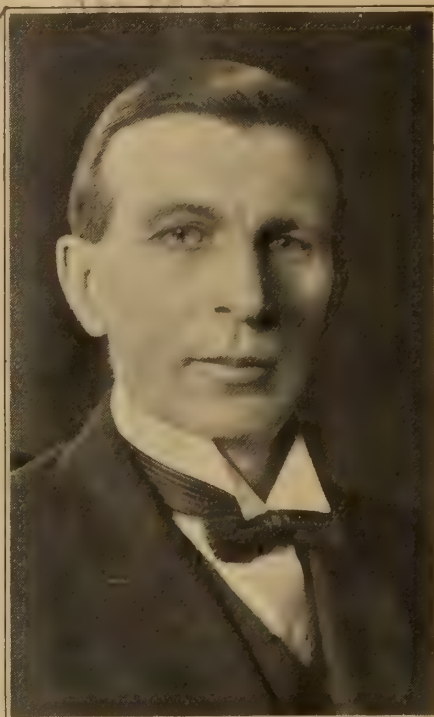
Following Sir Henry Thornton's return to Ottawa, on Jan. 28, from his inspection trip to the Pacific Coast, the Canadian National Ry. directors met in Ottawa Jan. 30 and 31 and one of the directors, R. P. Gough, on returning to Toronto on Feb. 1, announced that Montreal had been selected as headquarters for the Canadian National Ry. Co., and that the system would be divided into three parts for operating purposes and with local headquarters at Moncton, N. B., Toronto and Winnipeg.

The following was approved by the Governor General on Feb. 5 and passed as order in council 194:—

"The committee of the Privy Council have had before them a report, dated Feb. 2, 1923, from the acting Minister of Railways and Canals, representing that, under sec. 4 of chapter 13 of the Statutes of 1919, which is the act under which the Canadian National Ry. Co., is incorporated, it is provided that the head office of the company shall be at such places in Canada as the Governor in council may from time to time determine. The Minister, accordingly, on the advice of the President, recommends that the head office of the Canadian National Ry. Co. be at the City of Montreal. The committee concur in the foregoing recommendation and submit the same for approval."

Acting Minister of Railways Graham made the first official announcement in the House of Commons on Feb. 5, when he said: "Montreal has been selected as headquarters of the Canadian National system. Under the act of 1919 the government has the right to name the headquarters. That duty is reserved to the government; all else comes within the purview of the board, such, for example, as divisions of districts and all that

sort of thing. The board was asked to advise the Government in regard to the question of headquarters, but that advice need not necessarily have been taken. I am not trying to crawl under the coat of the board at all. Personally, it would have been a great pleasure for me, as an Ontario man, to see the head-



S. J. Hungerford,
Vice President in charge of Maintenance and
Operation, Canadian National Railways.



W. D. Robb,
Vice President in charge of Insurance, Lands,
Express, Telegraphs, Colonization, Develop-
ment and General Matters, Canadian
National Railways.

quarters established in Ontario. But I have always advised that the headquarters should be in Montreal, and this from purely business reasons. What the people of Ontario, and the people

of all Canada besides, need is efficient transportation at reasonable rates, and the fact that the expert who has been engaged to advise on such matters recommended Montreal as headquarters is, to my mind, evidence that that city should have been chosen. More than that, and I am not speaking in any way derogatorily of the C. P. R., when you have to compete in business with another you want to be as near your competitor as you possibly can. The C. P. R. headquarters are in Montreal, and there, I think, is where the Canadian National Ry. system should have its headquarters. Some of my friends say that the Canadian National headquarters have been taken from Toronto. Toronto never had the Canadian National headquarters any more than Montreal had. There were certain railways which were christened the 'Canadian National' by order in council, but there was no Canadian National Co., until Oct. 4, 1922. Toronto was headquarters of the Canadian Northern, and not the Canadian National; and Montreal was the headquarters of the Grand Trunk, and not of the Canadian National Rys. I fully concur with the Chairman of the board, that the headquarters of the Canadian National system ought to be in the same place as the C. P. R. headquarters. Further than that, Montreal, during the summer, is the great distributing center, inward and outward; and where trade originates oceanward, either in or out, is where the Canadian National headquarters should be, if that system is to get its share of that traffic. Many reasons perhaps could be adduced why some other place should have been selected as the headquarters of the system, but from purely a business standpoint I believe Montreal is the right place."

Sir Henry Thornton, in addressing the Canadian Railway Club at Toronto on Feb. 12, said:—"Certain essential problems have been determined. The determination of them has been contentious and there have been some disappointments. We have determined the location of the general headquarters and the headquarters of the various divisions. Irrespective of what differences of opinion may exist, I want to say to you quite earnestly and quite frankly that the decisions which were reached were only arrived at after long and anxious consideration. They were reached without the slightest outside influence or interference from anyone excepting where certain cities quite properly put forward the advantages of their respective locations. But there was no influence of a nefarious character from anyone and I hold myself entirely responsible for the choice that was made of headquarters. I have no desire of shirking the responsibility for that decision. Anyone who doesn't like it will have to blame me and I will accept the blame. I should have liked very much if someone else would have decided this vexed question for me. I did what I thought was best and I ask you to come along and help me and I venture to say that in the last analysis you will not be disappointed."

Division of System into Regions.

For administration purposes, the Canadian National Rys. system, with which the Grand Trunk Ry. has been incorporated, has been divided into three regions as follows:—

Atlantic Region.—All lines in mari-

time provinces, also the portion of the Intercolonial Ry., from the New Brunswick-Quebec boundary to Riviere du Loup, Que., including Riviere du Loup terminal, and the portion of the National Transcontinental Ry., from the New Brunswick-Quebec boundary to Monk, Que., but not including Monk terminal. Headquarters, Moncton, N.B. This includes all the Intercolonial Ry., except the portion between Riviere du Loup and Montreal, also the National Transcontinental Ry. from Moncton to Monk, the Prince Edward Island Ry. and various lines in the maritime provinces which have been acquired from time to time and added to the Canadian Government Rys.

Central Region.—All lines from Riviere du Loup and Monk, Que., on the east to Current Jct., on the Canadian Northern Ry., 2.1 miles east of Port Arthur, and to Superior Jct. on the National Transcontinental Ry., also the following G. T. R. line in the United States:—from the Quebec-Vermont boundary to Portland, Maine, and the lines west of the Detroit and St. Clair rivers. Headquarters, Toronto. This is the most important part of the system, from the point of view of density of traffic and the control of the lines extending into the United States. It is only exceeded in mileage by the Western Region. It embraces the densely populated sections of Quebec and Ontario which contains the larger part of Canada's population and industry.

Western Region.—All lines from Current Jct., and Superior Jct. Ont., to the Pacific coast, including Vancouver Island, and the Duluth, Winnipeg & Pacific Ry. Headquarters, Winnipeg. This region has a larger mileage than either of the others but on some parts the traffic is exceedingly sparse. On it there originates the grain crop, which constitutes the greatest single traffic with which the system is called on to deal. A great agricultural and mineral development will take place in that region.

The Central Vermont Ry., comprising all line and facilities south of Ithaca, Que., will, at least for the present, continue to be operated as a separate entity. Headquarters, St. Albans, Vt.

Each region will be presided over by a general manager, and a traffic manager, assisted by general superintendents, engineers, general freight and passenger agents, etc., and, with due regard for economy, each district will be made self-contained. The General Manager will be charged with the responsibility of maintaining the property and moving the business and will command the distribution of cars, supply of power, construction work, etc. The Traffic Manager will have charge of all matters relating to passenger fares, freight rates freight claims, and, generally speaking, all matters which fall within the functions of the Traffic Department. Each one of these officers will have the widest possible powers consistent with efficient and co-operative management. All details in their respective departments and territories will be left to them; consequently, not only will their functions be a great responsibility, but the location of their headquarters is a matter of more than ordinary moment to the community.

It is the intention that the executive officers located at general head offices will deal largely, if not entirely, with matters of policy and general administration. Their functions will be to supervise the operation of the property, co-ordinate the work of the different

districts and departments; to create in the organization that spirit of teamwork which is so essential to success, and, what is equally important, to develop, as necessity may require, projects to meet the constantly increasing demands upon the transportation machinery of



J. E. Dalrymple,
Vice President of Traffic, Canadian National Railways.



R. C. Vaughan,
Director of Purchases and Stores, Canadian National Railways.

the Dominion. Lastly, but by no means least, in their several capacities the executive officers will have to devote much time to assisting in the commercial, agricultural and mineral development of

the country.

The mileages of the three regions are as follows, the abbreviation C.N.R. being for Canadian National Rys:—

	Miles
Atlantic Region—	
Maritime District, C.N.R., east of Riviere du Loup	2,668.79
Rimouski Subdivision, Levis Division, Quebec District, C.N.R.	83.40
Total Atlantic Region.....	2,752.19
Central Region—	
Remainder of Quebec District, C.N.R.	2,275.70
Ontario District, C.N.R., less from Current Jct. to Port Arthur.....	1,798.50
Part of Buckle Subdivision, Fort William Division, Manitoba District, from Armstrong to Superior Jct., Ont.	132.70
G.T.R. Eastern Lines.....	1,797.42
G.T.R. Ontario Lines.....	1,858.53
Grand Trunk Western Ry.....	946.50
Total steam railways.....	8,809.35
Electric railways.....	181.10
	8,940.45
Western Region—	
Portion of Ontario District, C.N.R., from Current Jct. to Port Arthur.....	2.10
Duluth, Winnipeg and Pacific Ry	168.00
Manitoba District, C.N.R., less from Armstrong to Superior Jct.....	2,851.40
Saskatchewan District, C.N.R.....	3,454.00
Alberta District, C.N.R.....	2,178.10
British Columbia, C.N.R.....	1,623.10
Total, Western Region.....	10,276.70
Grand total, all lines.....	21,969.34

Moncton Protests.—The Moncton, N. B. Board of Trade sent the following telegram on Feb. 5 to members of Parliament from the maritime provinces and to other maritime provinces boards of trade:—"Press reports state Eastern Division Canadian National Rys. will commence at Riviere du Loup. This is not only a retroactive movement, but increases staff of Central Division at the expense of the maritimes. We protest emphatically and demand that Eastern Division extend east from Montreal and Cochrane. We rely upon immediate protest from every maritime member of parliament and boards of trade, and respectfully ask vigorous co-operation from you."

R. W. Grimmer, Conservative, M. P. for Charlotte, N. B., replied:—"Members of Government refuse interview. Say matter wholly in hands of directors. Advise reference Thornton."

T. W. Caldwell, Progressive M. P., for Carleton, N. B., replied:—"If Sir Henry Thornton is big enough to manage the Canadian Government Railways he will not tolerate such interference; and if he is not big enough to successfully handle them, such interference will not add to his efficiency; and if through such interference the Government roads are handicapped, Sir Henry and the directors will bear the blame. Therefore, I say 'Hands off,' and give the directors a chance to demonstrate without political interference what can be done to put the railways on a paying basis."

Sydney, N. S. Board of Trade replied in part:—"Our members fully sympathize in your endeavors to secure all you can for the maritime provinces, but they cannot understand why you should demand that control of the Eastern Division should be extended, not only from Riviere du Loup to Montreal, which would seem to be a reasonable proposition, but beyond Montreal into Ontario to Brockville and Cochrane. Our members are inclined to question the propriety of introducing politics into this matter. Sir Henry Thornton has been guaranteed against any such interference with his railway policy."

Halifax, N. S. Board of Trade replied:—"We would like to see the eastern division extended to the limits you mention, but are afraid you will not only have the Quebec but also Ontario people against you, as the section you ask for

practically extends to Toronto. You must remember Quebec has also urged that its province should be a division in itself, and Sir Henry Thornton has intimated that he would like another Quebec man on his board, so that our feeling is that if we ask too much we will not get the territory between Riviere du Loup and Levis."

Some of the boards of trade in the smaller towns supported Moncton's demand but the majority of the boards and of the members of parliament are evidently not anxious to interfere.

Sir Henry Thornton, in addressing the Ottawa Board of Trade, on Feb. 15, said:—"There has been some apprehension on the part of the Province of Quebec about the effect of the districting of the railway for operating purposes. It would be a great misfortune and a great pity if any large section of the Dominion felt aggrieved and disappointed about anything done relating to our national railway system. We want the good will of all the people. We are too young a baby to indulge in ill-will. I appeal to the people to give the organization and the arrangements made an honest trial, to see whether we have been correct in our conclusions. We must get away with something. We have to start off with our machine, and I want the support of the people wherever we can find it. The reasons which led to the regions decided on are largely technical. One of the great arteries of commerce in Canada is the railway which runs from Montreal through Toronto, and Detroit to Chicago. It constitutes the great link which connects eastern Canada with Chicago, the gateway to the west of the United States. It represents by far the densest traffic operation of our railway. Likewise it is the most profitable part of our railway. It seemed to me it was not in the interests of the system that there should be any division of responsibility in the handling of traffic between Montreal and Chicago. For that reason Toronto was selected as the district headquarters, and for that reason the dividing line between the Atlantic and the Central Regions was placed in the vicinity of Quebec. It is not the intention to affect in any way the interests of Montreal. So far as the head office and shops are concerned, if anything it will be found that the official staff at the general headquarters will exceed those there today. I propose, with the other executive officials to go to Montreal to live and it is not to be supposed that I could live in comfort in a city which is the headquarters of the Canadian National if I felt that the interest of that city and province had suffered. It is not the intention to disturb the present position in regard to the shops at Montreal."

Executive Appointments.

Sir Henry Thornton, President, on Feb. 20, announced the appointments of officials of the Canadian National Ry. Co. as amalgamated, as follows:—

S. J. HUNGERFORD, heretofore Vice President and General Manager, Canadian National Rys., Toronto, appointed Vice President in charge of Maintenance and Operation, reporting to the President. Office, Montreal.

W. D. ROBB, heretofore Vice President and General Manager, G.T.R., Montreal, appointed Vice President in charge of Insurance, Lands, Express, Telegraphs, Colonization, Development and General Matters, reporting to the President. Office, Montreal.

On Feb. 27 Sir Henry Thornton announced that J. E. DALRYMPLE, heretofore Vice President, Traffic, G.T.R., had been appointed Vice President in charge of traffic, reporting to the President.

R. C. VAUGHAN, heretofore Vice President, Purchasing, Supplies and Stores



L. S. Brown,
General Manager, Atlantic Region, Canadian
National Railways.



C. G. Bowker,
General Manager, Central Region, Canadian
National Railways.

Department, Toronto, appointed Director of Purchases and Stores, reporting to the President. Office, Montreal.

Sir Henry Thornton issued the following circular, Feb. 28:—M. H. MACLEOD, Vice President in charge of Construc-

tion, after many years of very different and loyal service, will, at his own request, relinquish his present position on March 1. He is appointed Consulting Officer to the Executive, effective that date. The board of directors and myself desire to express our appreciation of the valuable work he has performed and our satisfaction that the company will continue to enjoy the benefits of his long experience."

Finance and Accounting Department Appointments.

Major Graham A. Bell, Vice President of the company, and Vice President of Finance, on Feb. 20, announced the appointment of officials of the Canadian National Ry. Co. as amalgamated, as follows:—

D. E. BROWN, heretofore Assistant to Vice President, Financial and Accounting Department, Canadian National Rys., Toronto, appointed Chief Assistant to Vice President of Finance. Office, Montreal.

J. M. ROSEVEAR, heretofore Comptroller, G.T.R., Montreal, appointed General Comptroller. Office, Montreal.

C. E. FRIEND, heretofore Comptroller, Canadian Northern Ry. and Grand Trunk Pacific Ry., Toronto, appointed Assistant General Comptroller. Office, Montreal.

C. D. COWIE, heretofore Assistant to Vice President, Financial and Accounting Department, Canadian National Rys., Toronto, appointed Assistant to Vice President of Finance. Office, Montreal.

T. H. COOPER, heretofore Assistant to Comptroller, G.T.R., Montreal, appointed Assistant to Vice President of Finance, and assigned to special duties in office of Chief Assistant to Vice President. Office, Montreal.

W. S. HARRISON, heretofore Auditor of Revenues, G.T.R., Montreal, appointed General Auditor of Revenues. Office, Montreal.

J. A. YATES, heretofore Treasurer, G.T.R., Montreal, appointed General Treasurer. Office, Montreal.

H. G. FOREMAN, heretofore Treasurer, Canadian Northern Ry. and Grand Trunk Pacific Ry., Toronto, appointed Assistant General Treasurer. Office, Montreal.

A. E. PLANT, heretofore Local Auditor, G.T.R., Portland, Me., appointed acting Comptroller, Atlantic Region. Office, Moncton, N.B.

F. E. WHELPLEY, heretofore Assistant Treasurer, Canadian Government Rys., Moncton, N.B., appointed acting Treasurer, Atlantic Region. Office, Moncton, N.B.

J. B. McLAREN, heretofore General Auditor, G.T.R., Montreal, appointed Comptroller, Central Region. Office, Toronto.

F. J. BULLER, heretofore Assistant Treasurer, Canadian Northern Ry. and Grand Trunk Pacific Ry., Toronto, appointed Treasurer, Central Region. Office, Toronto.

A. C. EGAN, heretofore Auditor, Canadian Northern Railway System and Grand Trunk Pacific Ry., Toronto, appointed Comptroller, Western Region. Office, Winnipeg.

W. LeB. ROSS, heretofore Local Treasurer, Canadian Northern Ry. and Grand Trunk Pacific Ry., Winnipeg, appointed Treasurer, Western Region. Office, Winnipeg.

Legal Department Appointments.

Gerard Ruel, Vice President and General Counsel, on Feb. 20, announced the appointment of officials of the Canadian National Ry. Co., as amalgamated, as follows:—

W. C. CHISHOLM, K.C., heretofore General Solicitor, G.T.R., Montreal, appointed Assistant General Counsel. Office, Montreal.

E. E. FAIRWEATHER, heretofore Assistant General Counsel, Canadian National Rys., Ottawa, Ont., appointed Assistant General Counsel. Office, Montreal.

ALISTAIR FRASER, K.C., heretofore General Solicitor, Canadian National Rys., Toronto, appointed Commission Counsel. Office, Montreal.

T. WATERSON, heretofore Solicitor, G.T.R., Montreal, appointed Solicitor at Head Office, Montreal.

H. F. ALWARD, heretofore General Solicitor, Canadian National Rys., Montreal, appointed Counsel, Atlantic Region. Office, Moncton, N.B.

T. J. ALLEN, heretofore General Attorney, Canadian National Rys., Moncton, N.B., appointed Solicitor, Atlantic Region. Office, Moncton, N.B.

A. J. REID, K.C., heretofore General Solicitor, Canadian National Rys., Toronto, appointed Counsel, Central Region. Office, Toronto.

J. P. PRATT, heretofore Assistant General Solicitor, G.T.R., Montreal, appointed Assistant Counsel, Central Region. Office, Toronto.

A. E. BECKETT, K.C., heretofore, Solicitor, Province of Quebec, G.T.R., Montreal, appointed Solicitor, Central Region. Office, Montreal.

C. A. HARWOOD, K.C., heretofore Solicitor, G.T.R., Montreal, appointed Solicitor, Central Region. Office, Montreal.

E. S. FRASER, heretofore Assistant Solicitor, Canadian National Rys., Toronto, appointed Solicitor, Central Region. Office, Toronto.

R. H. M. TEMPLE, heretofore General Solicitor, Canadian National Rys., Winnipeg, appointed Counsel, Western Region. Office, Winnipeg.

J. R. BLACK, G. M. HAIR, D. O. OWENS, and C. M. RUSSELL, heretofore Assistant Solicitors, Canadian National Rys., Winnipeg, appointed Solicitors, Western Region. Office, Winnipeg.

R. W. HANNINGTON, heretofore General Attorney, Canadian National Rys., Vancouver, B.C., appointed Assistant Counsel, Western Region. Office, Vancouver, B.C.

A. R. McLEOD, heretofore Assistant Attorney, Canadian National Rys., Vancouver, B.C., appointed Solicitor, Western Region. Office, Vancouver, B.C.

Operation, Maintenance and Construction Department Appointments.

S. J. Hungerford, Vice President Maintenance and Operation, on Feb. 28, announced the following appointments of officials, who will have jurisdiction over all lines and report to him.

A. J. HILLS, formerly Assistant to President, D. B. Hanna, Canadian National Rys., Toronto, to be Assistant to Vice President, Maintenance and Operation. Office, Montreal.

D. CROMBIE, heretofore Transportation Assistant to Vice President, Operation and Maintenance, Canadian National Rys., Toronto, to be Chief of Transportation. Office, Montreal.

C. B. BROWN, heretofore Engineering Assistant to Vice President, Operation and Maintenance, Canadian National Rys., Toronto, to be Chief Engineer, Operating Department. Office, Montreal.

C. S. GZOWSKI, heretofore Assistant to Vice President, Construction Department, Canadian National Rys., Toronto, to be Chief Engineer, Construction Department.

Office, Montreal.

C. E. BROOKS, heretofore Mechanical Assistant, Locomotive Department, to Vice President, Operation and Maintenance, Canadian National Rys., Toronto, to be Chief of Motive Power. Office, Montreal.

G. E. SMART, heretofore Mechanical Assistant, Car Department, to Vice President, Operation and Maintenance, Canadian National Rys., to be Chief of Car Equipment. Office, Montreal.

COL. J. ALEX HUTCHISON, C.B.E., M.D., heretofore Chief Medical Officer, G. T. R., Montreal, to be Chief Medical Officer. Office, Montreal.

WALTER PRATT, heretofore Manager, Sleeping, Dining and Parlor Cars and Hotels, Canadian National Rys., to be General Manager, Sleeping, Dining, Parlor Cars and Railway Restaurants.

D. B. MULLIGAN, heretofore Superintendent of Hotels, Grand Trunk Pacific Ry., Winnipeg, to be General Manager of Hotels.

Mr. Hungerford also announced the



A. E. Warren,
General Manager, Western Region, Canadian
National Railways.

appointment of the following general managers of the three regions:—

L. S. BROWN, heretofore Assistant General Manager, Eastern Lines, Canadian National Rys., Montreal, to be General Manager, Atlantic Region. Office, Moncton, N. B.

C. G. BOWKER, heretofore Operating Manager, G. T. R., Montreal, to be General Manager, Central Region. Office, Toronto.

A. E. WARREN, heretofore General Manager, Western Lines, Canadian National Rys., Winnipeg, to be General Manager, Western Region. Office, Winnipeg.

Atlantic Region Officials.

General Manager Brown announced the following appointments Feb. 28:—

R. W. SIMPSON, formerly Assistant to General Superintendent, Maritime District, Canadian National Rys., Moncton, to be Assistant to General Manager. Office, Moncton, N. B.

W. U. APPLETON, heretofore General Superintendent of Rolling Stock, Eastern Lines, Moncton, to be General Superintendent. Office, Moncton, N. B.

W. E. BARNES, heretofore Master Mechanic, Maritime District, Canadian National Rys., Moncton, to be Superintendent of Motive Power. Office, Moncton, N. B.

G. E. MCCOY, heretofore Master Car Builder, Maritime District, Canadian National Rys., Moncton, to be Superintendent of Car Equipment. Office, Moncton, N. B.

A. C. BARKER, heretofore Superintendent, Moncton Division, Maritime District, Canadian National Rys., Moncton, to be Superintendent of Transportation. Office, Moncton, N. B.

W. N. RIPPEY, heretofore Superintendent of Transportation, Maritime District, Canadian National Rys., Moncton, to be Superintendent, Moncton Division. Office, Moncton, N. B.

Central Region Officials and Districts.

General Manager Bowker announced the following appointments, Feb. 28:—

W. A. KINGSLAND, heretofore General Manager, Eastern Lines, Canadian National Rys., Montreal, to be Assistant General Manager. Office, Toronto.

G. C. JONES, formerly Assistant to President, G. T. R., Toronto, and latterly attached to Vice President and General Manager's office, G. T. R., Montreal, to be Assistant General Manager. Office, Montreal.

C. F. NEEDHAM, heretofore Assistant to General Superintendent, Motive Power & Car Departments, G. T. R., Montreal, to be Assistant to General Manager. Office, Toronto.

MAJOR F. L. C. BOND, heretofore Chief Engineer, G. T. R., Montreal, to be Regional Chief Engineer. Office, Toronto.

C. R. MOORE, heretofore General Superintendent of Car Service, G. T. R., Montreal, to be General Superintendent of Transportation. Office, Toronto.

J. COLEMAN, heretofore Assistant to General Superintendent, Motive Power and Car Departments, G. T. R., Montreal, to be General Superintendent, Car Equipment. Office, Toronto.

J. C. GARDEN, heretofore General Superintendent Motive Power & Car Departments, G. T. R., Montreal, to be General Superintendent, Motive Power. Office, Toronto.

DR. J. P. MITCHELL, heretofore Chief Medical Officer, Eastern Lines, Canadian Northern Ry. System, Toronto, to be Assistant Chief Medical Officer. Office, Toronto.

C. H. NICHOLSON, heretofore Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B. C., to be Manager, Canada Atlantic Transit Co., and Lake Ontario, Detroit River and Lake Michigan Car Ferries.

The Central Region has been divided into the following districts for operating purposes:—

Quebec District. Comprising all lines and facilities included in the former Canadian National Rys., Quebec District. J. E. MORAZAIN, heretofore General Superintendent, Quebec District, C.N.R., to be General Superintendent. Office, Quebec, Que.

Montreal District. Comprising all lines and facilities included in the former Eastern Lines, G. T. R., W. R. DAVIDSON, heretofore General Superintendent, Eastern Lines, Montreal to be General Superintendent. Office, Montreal.

Northern Ontario District. Comprising

ing all lines and facilities in the former Ontario District, Canadian National Rys. W. R. DEVENISH, heretofore General Superintendent, Ontario District, C. N. R., to be General Superintendent. Office, Toronto.

Southwestern Ontario District. Comprising all lines and facilities included in the former Ontario Lines, G. T. R., R. H. FISH, heretofore General Superintendent, Ontario Lines, G. T. R., to be General Superintendent. Office, Toronto.

Michigan District. Comprising all lines and facilities between the Detroit and St. Clair Rivers on the east, and Chicago on the west. H. E. WHITTENBERGER, heretofore General Manager, lines west of Detroit and St. Clair Rivers, G. T. R., to be Manager. Office, Detroit, Mich.

Co-ordination of Accounting.

A conference of officials of the Canadian Government, Canadian National and Grand Trunk Rys., was held in Toronto early in February, to discuss matters in connection with the co-ordination of the accounting, etc., for all the lines which have been co-ordinated as in the Canadian National Ry. Co., and to make recommendations in connection therewith for the executive's consideration. It was attended by J. A. Yates, Treasurer; G. F. Ancrum, Assistant Treasurer; J. M. Rosevear, Comptroller; J. B. McLaren, General Auditor, G.T.R., and W. S. Harrison, Auditor of Revenues, Montreal; A. E. Plant, Local Auditor, G.T.R., Portland, Me.; W. C. Tomkins, Local Treasurer, G.T.R., Detroit, Mich.; C. D. Cowie, Assistant to Vice President, Finance & Accounting Department; C. E. Friend, Comptroller; A. C. Egan, General Auditor; H. G. Foreman, Treasurer; F. J. Buller, Assistant Treasurer, Canadian National Rys., Toronto; S. L. Shannon, Comptroller and Treasurer; W. H. Estano, Auditor of Traffic; G. N. Palmer, Auditor of Disbursement; F. E. Whelpley, Assistant Treasurer, Canadian Government Rys., Moncton, N.B. The new system which will be decided on will go into effect on May 1.

Hearing on Level Crossings in Toronto.

The City of Toronto applied to the Board of Railway Commissioners at its sitting in Toronto on Feb. 15, for an order directing the Canadian Pacific and Canadian National Rys. to collaborate with the city in the preparation of a joint plan for the separation of grades at the C. P. R. and C. N. R. crossings at Bloor St., Royce Ave., Weston Road, and St. Clair Ave., and at the C. N. R. crossings at Wallace Ave., and Davenport Road, and to fix a time for the submission to the Board of a plan dealing with grade separation at those crossings. The city was represented by G. R. Geary, Corporation Counsel; the G. T. R. by W. C. Chisholm, General Solicitor; and the C. P. R. by E. P. Flintoft, Assistant General Solicitor. Chief Commissioner Carvell was of the opinion that the Board lacked power to direct the railways to collaborate, and had jurisdiction only in the case of definite plans being prepared. Mr. Geary contended that the Board had power to direct the railways to join the city officials in the preparation of plans, and said that the C. P. R. showed some disposition to confer, but that the G. T. R. had not made its position clear. Mr. Chisholm stated that the G. T. R. did

not wish to assume responsibility for large expenditures before complete information was secured. Following the hearing, a conference among the interested parties was held, at which it was agreed that the matter should stand on the understanding that the railways would join the city in the preparation of tentative plans, with every effort to be made to have such plans prepared in three months.

C.P.R. Tuffnell-Prince Albert Branch Authorized.

Commissioner Boyce, of the Board of Railway Commissioners, has given the following ruling on the C.P.R.'s application for approval of route map of general location of a portion of the Manitoba & Northwestern Ry., from near Tuffnell, to Prince Albert, Sask.: By Dominion Statutes 11-12, George V, chap. 65, the lessor of the applicant company is empowered, subject to the usual conditions therein stated, and to the provisions of the Railway Act, to "lay out, construct, maintain, and operate" inter alia, the following line of railway: "From a point at or near Tuffnell, on its line of railway in or about Tp. 30, Range 10 or 11, West 2nd Meridian, thence northwesterly, northly and westerly to a crossing of the North Saskatchewan River in or about Tps. 49, 50 or 51, Range 14 or 15, west of the 2nd Meridian, thence westerly to the City of Prince Albert."

The C.P.R., as lessee of the franchises of the Manitoba & Northwestern Ry. Co. of Canada, applies to the Board, under sec. 167 of the Railway Act, for approval of its route map showing the general location of a portion of the latter company's Tuffnell to Prince Albert Branch from near Tuffnell, in Sec. 35, Tp. 30, Range 10, west 2nd Meridian, at mileage 0 to Sec. 8, Tp. 49, Range 26, west 2nd Meridian, at Prince Albert, Sask., mileage 211.75, as shown on the plans submitted in accordance with sec. 167.

The criticism offered by the Canadian National Rys. as contained in the memorandum of M. H. MacLeod, Vice President, dated Oct. 30, 1922, and repeated in the letter from Mr. Fraser, dated Nov. 20, 1922 (it scarcely takes the form of definite objection), is, I think, fairly well answered by the memorandum of Mr. Simmons of Nov. 10, 1922, by Mr. Flintoft's letter of Nov. 14, 1922, and by Mr. Blair's memorandum of Dec. 18, 1922. The Canadian National route is what may be termed a "paper route" provided by Saskatchewan legislation, 1912, and having been kept alive by Dominion legislation, i.e., the Branch Lines Act, referred to by Mr. Blair. The objection as to paralleling the Canadian National Rys. is not of itself meritorious, nor has it usually prevailed in this country in approving a route map. This is explained by reference to the topography of the country through which the railway is routed (see Mr. Flintoft's letter of Nov. 14, 1922).

The C.P.R. Act authorizes construction from Tuffnell. As pointed out by Mr. Simmons, this Board has no power to change the starting place, and it is to be observed that Mr. Flintoft states that the route now applied for follows a location upon the first 30 miles of which a portion of the grading was done by that company a number of years ago, and actual construction work is, in the circumstances, a factor not to be ignored. The matter of crossing of the Melfort North Easterly line is, I think, disposed of quite satisfactorily by Mr. Simmons' memorandum. I do not see that the situ-

ation can be bettered or cleared by any hearing, and there is no request for such.

The main issue is as to duplication. It does not seem to present more than abstract difficulties. The probabilities are much as summarized in the concluding paragraph of Mr. Simmons' memorandum, and some regard must be had to the interests of the public to be served by the projected C.P.R. line. The Canadian National line is not an immediate probability. The C.P.R. apparently wants to construct, and doubtless the people of the district need the railway. I do not think that there is anything in any of the points raised which forms an objection of substance to the application, and my own view would be to approve the route map submitted.

Chief Commissioner Carvell, Assistant Chief Commissioner McLean, and Commissioners Rutherford and Lawrence concurred.

Hearing on Whitewashing Cattle-Guards and Return Fences.

The railways were required to show cause at the Board of Railway Commissioner's sitting in Ottawa on Feb. 7, why they should not whitewash return fences and cattle guards on their lines. The Railway Association of Canada was represented by C. P. Riddell, General Secretary; the C. P. R. by E. P. Flintoft, Assistant General Solicitor; the Canadian National Rys. by Alistair Fraser, General Solicitor; the Michigan Central Rd. by W. B. Kingsmill, Solicitor; the G. T. R. by J. P. Pratt, Assistant General Solicitor. The railway representatives pointed out that many of the cattle guards and return fences are of metal, a lot of the fencing being of Page wire; that whitewash will not adhere to the metallic surfaces for any length of time; that a large part of the wooden structures are being creosoted, and that if whitewash be applied to the creosoted timber it would at once turn brown. The general opinion among the railways was that the whitewashing of fences and guards should be left to individual choice, as it is purely a matter of improving the appearance of the property, like whitewashed fences, and flower gardens at stations. Mention was made of the utility of the whitewashed fence and guard as a safety measure for motorists using the highways at railway crossings, but attention was called to the fact that there are crossing signs to call attention to the presence of railway tracks and that there would be no color contrast with snow on the ground. Decision was reserved.

Grain Inspected at Western Points.

The Dominion Bureau of Statistics, Internal Trade Branch, reports the number of cars inspected at Winnipeg and other points on the Western Division, for January, and for five months ended Jan. 31, 1923 and 1922, as follows:—

	January	5 mons. to Jan. 31, 1923	5 mons. to Jan. 31, 1922
C. P. R.....	7,793	115,188	78,728
C. N. R.....	8,118	94,789	57,918
G. T. F. R.....	.....	.....	20,679
G. N. R.....	92	1,472	749
Totals.....	15,998	211,449	158,074

H. K. Wicksteed, B.A.Sc., C.E., ex Chief Engineer of Location, Canadian Northern Ry., read a paper on "Radials," before the Engineering Institute of Canada's Toronto branch, on Feb. 15.

Railway Rolling Stock Orders and Deliveries.

Shale Brick Co. Cooksville, Ont., has bought 3 rebuilt flat cars, 80,000 lb. capacity, 40 ft. long, from Canadian Equipment Co., Montreal.

The Timiskaming and Northern Ontario Ry. has received 2 rebuilt locomotives from Canadian Locomotive Co., completing an order for 6 rebuilt locomotives.

Abitibi Transportation & Navigation Co., Iroquois Falls, Ont., has bought, through Canadian Equipment Co., Montreal, a Russell no. 2 snowplough for use on logging railway.

The Quebec Development Co., Quebec Que., has ordered 8 four-wheel locomotives type Q318, and 5 four-wheel locomotives, type Q319, from the Montreal Locomotive Works.

The Esquimalt and Nanaimo Ry. (C. P. R.) is equipping one of its locomotives with Pyle National headlight, and also applying Pyle National lighting equipment to 8 passenger cars.

The C. P. R., between Dec. 17, 1922 and Feb. 10, received 1 single track steel underframe flanger, from its Angus shops, Montreal, and 69 freight refrigerator cars from Montreal Steel Car Corporation.

Sir William Arrol and Co., contractors, St. Catharines, Ont., have bought 15 rebuilt western air dump cars, 12 yd. capacity, with 19 ft. bed, from Canadian Equipment Co., Montreal. They have steel underframes, long cylnder air dump equipment, wood beds, and are of standard western construction.

The prosperity being enjoyed by U. S. locomotive builders is indicated in a report issued recently by the U. S. Commerce Department, Washington, which shows that in Jan. 1923, there were 229 locomotives shipped, compared with 210 in Dec., 1922, and but 74 in Jan., 1922. There were unfilled orders for 1,788 locomotives on hand at the end of Jan. 1923, compared with 1,592 at the end of Dec. 1922, and but 207 at the end of Jan. 1922.

The Timiskaming & Northern Ontario Ry. was reported, in a United States paper of Jan. 20, as contemplating buying 15 Pacific type locomotives, which did not coincide with Canadian Railway and Marine World's information, as we were officially advised on Jan. 15 that the road was not in the market for additional equipment. Enquiry at North Bay has confirmed the previous information, and that such an order as mentioned is not contemplated. The T. & N. O. management has, however, been discussing with manufacturers the design of certain types of equipment which it is anticipated will be required, but has not asked for tenders.

P. Lyall and Sons Construction Co., Welland Canal contractors, Thorold, Ont., have bought 2 six-wheel rebuilt switching locomotives, (0-6-0), and 19 rebuilt air dump cars, 16 cub. yd. capacity, of Kilbourne and Jacobs Manufacturing Co. standard construction, from Canadian Equipment Co., Montreal. The locomotives were built originally by the C. P. R., and have cylinders 18 x 24 in.; extended wagon top boilers, 56 in. diam.; 175 lb. working pressure; Westinghouse automatic and straight top air brakes; 10 ft. wheel base, total weight, engine and tender, 151,000 lb., tractive power, 24,000 lb., tender capacity 3,000 gall. water and 5 tons coal.

The Belgo Paper Co. has ordered a 6-wheel saddle tank oil burning switching locomotive, (0-6-0) from Canadian Locomotive Co. Following are the chief details:—

Gauge	4 ft. 8½ in.
Weight in working order	91,000 lb.
Wheel base	9 ft. 6 in.
Heating surface, firebox	74 sq. ft.
Heating surface, tubes	716.5 sq. ft.
“ “ total	790.5 sq. ft.
Driving wheels, diam.	42 in.
“ “ centers	cast iron
Driving journals, diam. & length	6½ x 8 n.
Cylinders, diam and stroke	15 x 22 in.
Boiler, type	Radial stay
“ working pressure	180 lb.
Tubes, no. and diam.	132-2 in.
Tubes, length	10 ft.
Injectors	No. 6 locomotive inspirators
Safety valves	2 in. locomotive pop
Brakes	Westinghouse Automatic
Packing	Metallic
Capacity, water	1,500 imp. gall.
“ fuel oil	500 imp. gall.

Grant Smith and Co. and McDonnell have bought 2 rebuilt 10-wheel locomotives, (4-6-0) from Canadian Equipment Co. for use on their Timiskaming and Northern Ontario Ry. contract. They have cylinders 18½ x 26 in.; 53 in. driving wheels; 8 x 12 in. journals; extended wagon top boilers, 60 in. diam., 175 lb. working pressure; 24 ft. 7 in. total wheel base, 240,500 lb. total weight, engine and tender, and are equipped with Westinghouse automatic and straight air brakes, Sharon couplers, and with tender capacity for 500 gall. water, 9 tons coal. They have also bought from the same company, 6 box cars, 60,000 lb. capacity, 36 ft. long, and 6 flat cars, 40 ft. long. The box cars are 36 ft. long over end sills, 8½ ft. wide inside and 8 ft. 1½ in. high inside, and have Murphy outside metal roofs, M.C.B. couplers, simplex bolsters, Westinghouse air and hand brakes, etc. The flat cars are 40 ft. long over end sills, 10 ft. wide over all, 6 ft. high to top of brake shaft, and are equipped with Miner tandem coupler, with Sharon yoke, simplex bolsters, McCord journal boxes, etc.

The C.P.R. 16 Pacific type (4-6-2) locomotives which are being built at Montreal Locomotive Works, as mentioned in our last issue, will have the following details:—

Weight on drivers.....	181,500 lb.
“ on engine truck.....	58,500 lb.
“ on trailing truck.....	59,000 lb.
“ total	299,000 lb.
Wheel base, driving.....	13 ft. 2 in.
“ total engine	34 ft. 9 in.
Cylinders, diam. and stroke.....	25 x 30 in.
Driving wheels, diam.	75 in.
Engine truck wheels, diam.	31 in.
Trailing truck wheels, diam.	45 in.
Driving journals, main.....	11½ x 21 in.
“ others	10½ x 14 in.
Engine truck journals.....	7 x 3 in.
Trailing truck journals.....	9 x 14 in.
Boiler, type	Straight top radial stay
“ pressure	200 lb.
Firebox, length and width.....	111½ x 84½ in.
Tubes, no. and diam.....	205-2¼ in.
Flues, no. and diam.....	38-5½ in.
Tubes and flues, length.....	18 ft. 6 in.
Heating surface, tubes and flues.....	3,232 sq. ft.
“ “ firebox	298 sq. ft.
“ “ total	3,530 sq. ft.
Grate area	65 sq. ft.
Tractive power	42,600 lb.
Factor of adhesion.....	4.26
Superheater	Superheater Co.
Reverse gear.....	C.P.R. standard screw
Tender frame	Commonwealth steel
“ truck wheels, type and diam	Steel tire, 86¼ in.
Tender truck journals.....	6 x 11 in.
Water capacity.....	8,000 imp. gall.
Coal capacity.....	12 tons

Canadian National Railways' Orders.

In addition to the orders given by the Canadian National Rys. for locomotives, cars and work equipment, as stated in Canadian Railway and Marine World

for February, 1,000 automobile cars have been ordered, 600 from Canadian Car and Foundry Co., Montreal, and 400 from National Steel Car Corporation, Hamilton. They will have the following general dimensions:—

Length inside	40 ft. 6 in.
Length over striking plates	42 ft. 1½ in.
Width inside	8 ft. 6 in.
Width over eaves	8 ft. 1 3/8 in.
Height inside in clear	9 ft.
Height rail to top of car at eaves.....	12 ft. 8 3/4 in.
Height rail to top of brake mast.....	13 ft. 0½ in.
Height rail to top of running board.....	13 ft. 7½ in.
Height rail to center of coupler.....	2 ft. 10½ in.
Height rail to bottom of center sill.....	2 ft. 4½ in.
Center to center of trucks	31 ft. 1½ in.
Load and tare weight of car	132,000 lb.
Truck wheel base	5 ft. 6 in.
Center to center of arch bars	6 ft. 4 in.
Journals	5 x 9 in.
Wheels	33 in. cast iron, chilled tread.

They will have steel underframes, steel side framing, and 1½ x 5¼ in. pine or fir sheathing, and Hutchins all steel flexible roofs. Equipment will include Laughlin side bearings on 600 cars, and Stuki side bearings on 400; Miner A-2-S draft gear with Farlow attachment; type D couplers with 6 x 8 in. shank; Camel no. 30 automobile car door fixtures; Westinghouse schedule K-C 1012 brake equipment, with braking power 60% light weight at 50 lb. brake cylinder pressure; arch bar trucks; Simplex bolsters on 600 cars, and cast steel bolsters on 400.

Lettering.—We are officially advised that all the rolling stock ordered for construction in Canada and for operation on Canadian National lines in Canada, including the G. T. R., will be lettered “Canadian National” and that the new equipment to be built and operated in the U. S., as specified in Canadian Railway and Marine World for February, will be lettered “Grand Trunk.”

Locomotives.—In the specifications for the 35 Mikado locomotives ordered from Montreal Locomotive Works, and the 10 from Canadian Locomotive Co., given in Canadian Railway and Marine World for February, weights were omitted. We are now advised that approximate weights will be as follows:—on drivers, 230,000 lb.; on engine truck, 27,500 lb.; on trailing truck, 55,500 lb.; total engine, 315,000 lb.; tender, 180,200 lb. In the specifications for the 16 Mountain type locomotives ordered from Canadian Locomotive Co., weights were also omitted. The total weight of engine will be approximately 333,000 lb., with 226,000 lb. on drivers, and weight of tender, loaded, will be 208,000 lb. The Mikado locomotives will have Belpaire fireboxes and the Mountain locomotives will have radial stayed fire boxes.

Car Conversions.—It was stated in Canadian Railway and Marine World for February that authority had been given for the conversion of 1,000 30-ton steel frame box cars into stock cars, and 50 box cars into cabooses, at Moncton shops. We are officially advised that the conversion of the box cars into stock cars will include a rearrangement of inside lining; application of 18 x 30 in. sliding end doors and standard stock car side doors, with Camel stock car door fixtures; provision of continuous feed racks; rearrangement of brake equipment to conform with latest C.N.R. standards; provision for application of double deck should same at any time be considered necessary; repainting standard color of stock cars, and renumbering

ing all lines and facilities in the former in stock car series. The box cars to be converted were built in 1912 and 1913. The 50 cabooses to be converted from box cars will be the C. N. R. standard design, with steel underframe. The trucks will be equipped with elliptic springs; brake equipment will be made standard, windows, doors and cupola applied, and the interior made to conform to the standard layout.

Work Equipment.—Four 1½-yd. clam-shell buckets, and two 3-drum double cylinder hoisting engines, have been ordered from Canadian Mead Morrison Co. through Harvard Turnbull & Co., and two concrete mixers have been ordered from F. H. Hopkins and Co.

Fair Wage Clause.—A recent Montreal press dispatch said that railway shopmen's officers were taking steps to ascertain whether the contracts given by the Canadian National Rys. for rolling stock contain the usual fair wages clause. Canadian Railway and Marine World is advised that they do, the clause being as follows:—"The workmen and laborers employed by the contractor in or about the works shall be paid such wages as may be currently payable to workmen and laborers engaged in similar occupation in the districts in which the said works are being constructed."

Additional Directors for Canadian National Railways.

The Prime Minister said in the House of Commons on Feb. 2, in answer to a question by the leader of the Opposition, Mr. Meighen: "I have discussed with Sir Henry Thornton the advisability of an additional director for the Canadian National Rys., from the Province of Quebec, and he is of opinion, and the Government is also of opinion, that it is desirable to have a director appointed in the City of Quebec, and one will be appointed shortly." A few days later it was announced that Lt. Col. O. E. Talbot of Quebec, Que., had been appointed. Biographical particulars of him are given under "Mainly About Railway People" farther on in this issue.

On Feb. 15, M. MacLaren, St. John, N. B., asked "Is it the Government's intention to add to the new Canadian National Ry. Board a representative from New Brunswick?" Acting Minister of Railways Graham replied:—"After consultation with the President of the Canadian National Rys., it was decided to begin operations with a comparatively small board, representative of districts rather than of provinces. Should experience indicate the necessity for further additions, within the limits of the act, the Government will not hesitate to make these additions."

Canadian Passenger Association, Western Lines.—W. E. Duperow, General Passenger Agent, Canadian National Rys., Winnipeg, has been re-elected Chairman for this year. The committees' chairmen are, executive, R. G. McNeillie, General Passenger Agent, C.P.R.; rules, N.R. Des Brisay, Assistant Passenger Agent, C.P.R.; baggage car traffic, H. M. Spence, Assistant General Baggage Agent, Canadian National Rys.; Secretary, E. J. Stone.

New Brunswick received the following taxes from transportation companies during 1921-2:—Express companies, \$1,145; Telegraph companies, \$1,967.10; Railway companies, \$58,100; Street railway companies, \$3,343.41.

Railway Wages and Working Conditions in Canada and the United States.

February was not marked by any outstanding developments in the wage and working condition situation on Canadian railways, unless the move in Montreal to apply the one big union idea to railway employees of all classes throughout the country could be classed as such. Press reports state that Z. Foster, of steel strike fame, and a newly elected vice president of the Third International at Moscow, addressed a meeting of railwaymen in Montreal on the subject of amalgamation of all unions. He is reported to have stated that the next few years would see the amalgamation of all railway unions in Canada and the U. S. into one big industrial union, and to have severely criticized the leaders of all the rail unions which did not support the railway shopmen in their recent strike.

Delegates from the machinists, boilermakers, pipe fitters, sheet metal workers and blacksmiths employed in Montreal shops attended a conference in that city in February to further the cause of one big unionism, and the general opinion seemed to be that against the united stand of the railways, the individual labor unions were helpless. The following resolution was passed: "whereas, during the past 12 months, the railways of the United States and Canada have attacked the standards of living of the railroad workers and the very existence of the unions themselves, and whereas the existence of 16 individual railway unions splits the forces of the railroad workers and renders their efforts against the railway companies ineffective, be it resolved that this conference of the Montreal shopcrafts favors the amalgamation of the 16 railway unions into one organization covering the entire railroad industry, as outlined in the plan for amalgamation put forward by the Minnesota Railroad Shopcrafts Legislative Committee, and calls upon the general officers to take the necessary steps so that a joint convention of all these organizations or as many of them as possible shall be assembled to put the amalgamation into effect."

Concerning this action, C. Dickie, Secretary, Division 4, American Federation of Labor's Railway Employees' Department, expressed the attitude of the officers of his division as following: "Amalgamation is not necessary at present. We have machinery all ready provided for in the constitution of the American Federation of Labor Railway Employees' Department for the affiliation of all the 16 railway organizations in Canada. Nine of the 16 unions have already entered into affiliation, and in the event of a strike could come out simultaneously, so that affiliation has just the same result of unified action as amalgamation, though the result is obtained through a different road. Let us build on the foundation we have already laid." J. A. McClelland, Vice President in Canada of the Machinists' Union, is reported to have said:—"An industrial union covering the railway industry would smash the unions. Plank 7 of our platform is sufficiently definite on the question of amalgamation, and places our occupation before industry. The only effect that I can see an industrial union would have would be to smash up our trades unions, and I don't feel the workers are prepared for any such move.

The A. F. of L. Railway Department has been organized to achieve the same results as are claimed by this new form of organization."

It does not seem reasonable to suppose that the one big union idea will meet with any more success in the future than it has in the past.

Shopmen to meet railways.—It is reported that arrangements are in progress for a meeting between the shopmen's officers and a Railway Association of Canada wage committee, to discuss several clauses in the present schedule agreement. The meeting is expected to take place early in March.

United States Situation.—By a Labor Board ruling, effective Feb. 1, railway signal department employees will hereafter receive time and a half after the eighth consecutive hour of work. For Sunday and holiday work, time and one half will be paid, except where employees are regularly assigned to such service, when they will be given one day off in seven if possible, and if required to work on such regularly assigned off day will be paid time and a half. The signalmen's application for a wage increase was denied.

Labor Member for U. S. Railroad Labor Board.—The term of Albert Phillips, Labor Member on the U. S. Railroad Labor Board, expires on April 15. In accordance with the law, the labor organizations have chosen six men whose names will be submitted to President Harding from which to make his choice, as follows:—J. H. Sylvester, Vice President, Brotherhood of Railway Clerks; J. J. Farnum, Maintenance of Way Employees; D. W. Helt, President, Order of Railway Signalmen; Thomas Pearson, General Chairman, New Haven Chapter Order of Railway Telegraphers; G. C. Milan, Brotherhood of Railway Clerks, and Albert Phillips, Brotherhood of Locomotive Firemen and Enginemen (re-submitted.)

Track Accessories and Machine Tools for Canadian National Rys.

Track accessories orders have been given by Canadian National Rys. as follows:—187,000 pairs angle bars; 235,000 rail anchors; 1,408,000 tie plates; 1051 tons of track bolts; 1850 tons of track spikes. The orders have been divided between Algoma Steel Corporation; Canada Machinery Corporation; Canadian Tube & Steel Products Co.; Nova Scotia Steel & Coal Co.; P & M Co., and Steel Co. of Canada.

The Canadian National Rys. have asked prices for a large number of machine tools of various kinds for the Western Lines shops and locomotive houses, among which are lathes, shapers, electric hoists, boring machines, grinders, punch and shears, planers, flue cutters, rivet heaters and other machines and appliances.

Railway Lands Patented.—Letters patent were issued during January, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres
Alberta and Great Waterways Ry.....	674.76
Central Canada Ry.....	26.26
Canadian Northern Ry.....	670,366.51
Total	671,067.53

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Atlantic Transit Co., Ontario Car Ferry Co. C. H. NICHOLSON, heretofore Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B. C., has been appointed Manager, Canada Atlantic Transit Co. and Lake Ontario, Detroit River & Lake Michigan Car Ferries. Office, Montreal.

Canada Steamship Lines Ltd.—C. C. BONTER, heretofore General Passenger Agent, Eastern Lines, has been appointed Assistant Passenger Traffic Manager, all lines. Office, Montreal.

J. R. BECK, heretofore City Passenger Agent, Toronto, has been appointed District Passenger Agent there, vice D. Keddie, transferred. Office, 46 Yonge St.

D. KEDDIE, heretofore District Passenger Agent, Toronto, has been appointed General Agent, Pittsburgh, Pa. Office, Diamond National Bank Building.

N. McALLEN, heretofore ticket agent, Toronto, has been appointed District Passenger Agent, Cincinnati, Ohio. Office, Dixie Terminal Building.

S. J. MURPHY, heretofore excursion agent, Toronto, has been appointed District Passenger Agent, St. Louis, Mo. Office, Boatmen Bank Building.

Canadian Government Merchant Marine.—The Grand Trunk Pacific Coast Steamship Co. has been placed under the Canadian Government Merchant Marine Ltd. for operation, as from Jan. 1.

D. B. CARSWELL, heretofore Senior Assistant Superintendent Engineer, has been appointed Superintendent Engineer, vice I. J. Tait, who has left the service. Office, Montreal.

B. C. KEELEY, heretofore General Agent, Vancouver, B. C., has been appointed Pacific Coast Manager, with jurisdiction also over Grand Trunk Pacific Coast Steamship Co., reporting to the General Manager at Montreal Office, Vancouver, B. C.

A. G. MacLEOD, heretofore in Traffic Department, Vancouver, B. C., has been appointed Contracting Freight Agent there, vice C. C. Kernahan, resigned to enter private business.

R. B. TEAKLE, heretofore Manager, has been appointed General Manager, Canadian Government Merchant Marine and Grand Trunk Pacific Coast Steamship Co. Office, Montreal.

E. E. TEDFORD, heretofore Marine Superintendent, has been appointed General Superintendent. Office, Montreal.

A. WATSON has been appointed Junior Assistant Superintendent Engineer, vice —, Winter, who has left the service. Office, Montreal in summer and Halifax, N.S., and St. John, N.B., in winter.

JOHN YOUNG, heretofore Junior Assistant Superintendent Engineer, has been appointed Senior Assistant Superintendent, vice D. B. Carswell appointed Superintendent Engineer. Office, Montreal in summer, and Halifax, N. S. and St. John, N. B., in winter.

Canadian National Rys. A. BROSTEDT General Traffic Agent for the Orient, has been transferred from Shanghai to Hong Kong, China. Office, Queens Building.

J. J. CROWE has been appointed Signal Supervisor, Saskatchewan District, vice S. J. Stinson, assigned to other duties. Headquarters, Saskatoon.

J. A. LEGERE is reported to have

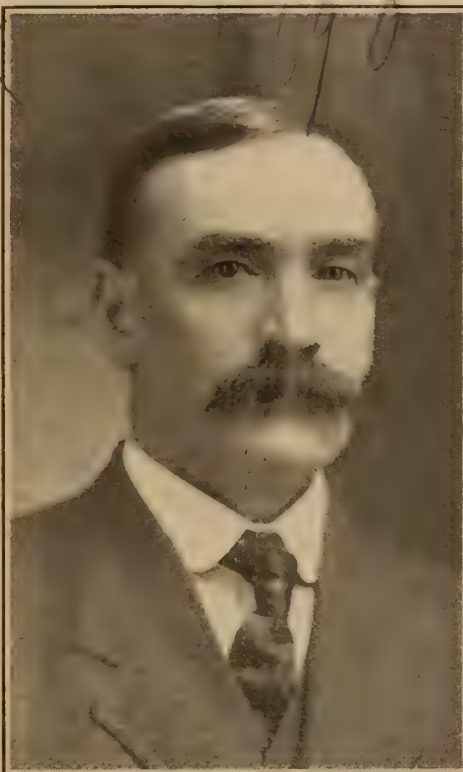
been appointed Locomotivehouse Foreman, Newcastle, N. B., vice W. S. Smallwood, retired on the provident fund.

T. J. McCABE, heretofore Assistant Treasurer, Canadian Northern Ry. and Grand Trunk Pacific Ry., Toronto, has resigned to become President, Buntin, Reid & Co. wholesale paper merchants, Toronto.

D. E. ROSS, heretofore in Freight Department, Shanghai, China, has been appointed Traffic Agent there. Office, Glen Line Building, The Bund.

ADAM STEWART has been appointed acting agent, Sydney, N. S., vice G. O. Forbes, deceased.

LT.-COL. O. E. TALBOT, has been appointed a director.



T. Kilpatrick,
General Manager and General Superintendent,
Pacific Great Eastern Railway.

Appointments, consequent on the G. T. R.'s co-ordination with Canadian National Rys., are given on another page of this issue.

Canadian Pacific Ry.—DRS. O. DEMUTH and W. K. FEARE have been appointed medical officers at Vancouver, vice Drs. Hunter, MacLachlan, Patterson and Robertson. This corrects an unconfirmed press report mentioned in Canadian Railway and Marine World for February, pg. 63.

G. F. DIEKROEGER, heretofore Assistant District Freight Agent, has been appointed District Freight Agent, C. P. R., Minneapolis, St. Paul and Sault Ste. Marie Ry., Duluth South Shore and Atlantic Ry. and Spokane International Ry., St. Louis, Mo., vice W. M. Porteous, who, at his own request, has been retired, on account of ill health.

W. T. MARLOW, heretofore General Freight Agent, Ocean Traffic, C. P. R., Montreal, has been appointed Foreign Freight Agent, vice C. S. Gowans, resigned to enter private business. Office, Montreal.

W. A. NEELY has been appointed

Roadmaster, St. Thomas, Port Burwell and St. Marys Subdivisions, London Division, Ontario District, vice J. E. Steele on leave of absence. Office, Ingersoll, Ont.

Delaware & Hudson Co.—F. P. GUTELIUS, heretofore Vice President, Operating and Traffic Departments, Albany, N. Y., and formerly General Manager, Canadian Government Rys., Moncton, N.B., is stated, in a New York press dispatch, to have been appointed Resident Vice President, D. & H. Co., at Montreal, succeeding C. S. Sims, resigned.

Dominion Express Co.—H. J. PALMATEER, heretofore Assistant Superintendent, has been appointed Superintendent, Eastern Division, vice Geo. Parker, deceased. Office, Toronto.

Duluth, South Shore and Atlantic Ry.—See Canadian Pacific Ry.

Grand Trunk Pacific Coast Steamship Co.—See Canadian Government Merchant Marine.

Grand Trunk Ry.—T. A. CHAPPELL, heretofore Commercial Agent, has been appointed General Agent, Freight Traffic Department, Philadelphia, Pa. Office, 1105 Finance Building.

G. A. McGUIRE, heretofore Commercial Agent, has been appointed General Agent, Freight Traffic Department, Buffalo, N. Y. Office, 1019 Chamber of Commerce Building.

C. MANNING, heretofore Assistant Operating Manager, lines east of Detroit and St. Clair rivers, G. T. R., Montreal, is reported to have been appointed Assistant to W. D. Robb, Vice President in charge of Insurance, Lands, Express, Telegraphs, Colonization, Development and General Matters, Canadian National Rys., Montreal.

S. G. WAGSTAFF, heretofore Commercial Agent, has been appointed General Agent, Freight Traffic Department, Toledo, Ohio. Office, 501 Commerce Guardian Building.

Appointments consequent on the G. T. R.'s co-ordination with Canadian National Rys. are given on another page of this issue.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—See Canadian Pacific Ry.

Ontario Car Ferry Co.—See Canada Atlantic Transit Co.

Pacific Great Eastern Ry.—T. KILPATRICK heretofore Inspector of Bridges, British Columbia Public Works Department, Victoria, and formerly Superintendent, District 1, British Columbia Division, C. P. R., Revelstoke, has been appointed General Manager and General Superintendent, P. G. E. R., vice A. B. Buckworth, General Manager, who has been appointed Deputy Minister of Railways for British Columbia.

Toronto, Hamilton and Buffalo Ry.—J. A. VIRTUE heretofore chief clerk, local freight office, Hamilton, Ont., has been appointed Freight Agent, there, vice C. M. Sinclair, deceased. He will also represent the C. P. R. as the T. H. and B. Ry. handles its Hamilton Business.

The Great Eastern Railway Shareholders, at their final meeting in London on Feb. 20, prior to the company being merged in the London and North-eastern Ry. Co., made complimentary references to Sir Henry Thornton's services to the company previous to his acceptance of the Canadian National Ry.'s presidency.

Grand Trunk Railway Grade Separation in Detroit.

The Grand Trunk Railway grade separation was the first specified problem to receive attention after the establishment by the City of Detroit, Mich., of the Division of Grade Separation in Jan., 1917. The G.T.R., which was built prior to 1850, enters the city on Dequindre St., one mile east of, and parallel with, Woodward Ave., the chief retail business street. It runs through a section of the city having a population of from 36,000 to 50,000 a square mile. The streets are narrow and close together. About one third of the entire population reside east of this line. Belle Isle Park, the waterworks, many large industries and some of the finest residential districts lie east of the line, so that the total number of individual movements per day over the tracks runs into the millions. There are 44 streets involved between the Detroit River and Ferry Ave., many of which are heavy traffic streets, two of them, Jefferson and Gratiot Avenues, carry from 8,000 to 15,000 vehicles a day, in addition to street cars, while there are street car movements of 1,280 and 2,800 per day, respectively. Some of the worst crossing accidents in recent years have occurred on these streets, and from every point of view the grade elimination project is the most urgent in the city.

The project has been under discussion for about 18 years. The common council and the railway company had been unable to agree, therefore in 1914 the council petitioned the Michigan Railroad Commission for an order to compel grade separation. Various plans had been made and modified, by both the railway and the city. In 1917, when the Division of Grade Separation assumed charge, the plan before the Railroad Commission, known as Grand Trunk Railroad, Plan N, provided for 6 to 8 ft. elevation of the railway and 8 to 18 ft. depression of the streets. It was the city's contention that this plan was wholly improper. New plans were immediately prepared, which provided for depression of the G.T.R. tracks over part of the district. The present railway yard, from the passenger and freight stations, is on a substantially level grade, about 4 ft. above high water. This grade, carried under Jefferson Ave., permits ample drainage. A rising grade of four-tenths of a foot per 100 ft. to Macomb St., and a grade of 1 ft. per 100 to Alexandrine Ave., provides perfect drainage, the same alignment as proposed by the railway, the same maximum grade as the road now operates, and puts the tracks some 20 to 22 ft. below the correct grades of all streets. This plan was submitted to council Feb. 28, 1917, with a full report setting forth the comparison of this plan with plan N. This plan was approved by the council, and became known as the City of Detroit Plan.

At a hearing before the Michigan Railroad Commission on March 8, 1917, the city plan was offered as a substitute for plan N, and on the strength of the showing made, the railway withdrew plan N and offered in its stead plan O, which provides for a 3 ft. elevation at Brush St. station, a maximum elevation of 22 ft. between Riopelle and Gratiot Sts., and which comes to the city plan grades at Alexandrine Ave. and conforms with the city plan to Ferry Ave. Plan O eliminated nearly all of the

objectionable features of plan N, but placed the maximum grades in the railway yards along the river front. The city, therefore, still contended for the adoption of the city plan.

With the United States entry into the Great War, and the subsequent taking over of railway operation by the U.S. Government, the matter of grade separation was necessarily dormant, this being the case until after the relinquishment of control in Jan., 1920, although application was made to the Michigan Public Utilities Commission, by the Grade Separation Engineer, in Dec., 1919, asking for a decision of the G.T.R. case then pending. On July 30, 1920, the Michigan Public Utilities Commission made an order determining the necessity for grade separation along the Dequindre St. line of the G.T.R. between Brush St. station and Milwaukee Jct., and approved the city's plan, providing for the depression of the railway tracks under and below intersecting streets, from and including Jefferson Ave., on the south, to and including a point a short distance southerly of Hale St., on the north, and the elevation of the tracks, beginning a short distance southerly of Hale St., and extending northerly to beyond Ferry Ave. The order also directed that the city and the railway prepare final detailed plans, specifications, and estimates of costs, to be presented before grade separation was to be finally ordered.

Acting in co-operation, the G.T.R. Western Lines Engineering Department and the City of Detroit's Grade Separation Division set about preparing detailed plans and estimates as required, and weekly conferences were held in the G.T.R. Western Lines Chief Engineer's office during the spring and summer of 1921. On Sept. 16, 1921, John W. Reid, Grade Separation Engineer for the city, wrote the Chief Engineer, G.T.R. Western Lines, suggesting that an apportionment of the expense of the proposed Dequindre St. grade separation project be made, obligating the city to pay 25% and the railway 75%, stating that he was prepared to make a recommendation to the common council on that basis, to effect a settlement of the controversy between the parties in the pending proceeding. On Dec. 6, 1921, the G.T.R.'s Chief Engineer, Western Lines, received a reply from Mr. Irving, intimating that the proposition was under active consideration. On March 28, 1922, the Chief Engineer wrote that the G.T.R. was willing to enter into an agreement with the city to separate grades on Dequindre St. as far north as Hale St., in accordance with the city's offer as to division of expense. This proposition was accepted by the common council and an agreement was prepared acceptable to the city and was signed by the G.T.R. officials in Jan., 1923. Construction under this agreement will be started early in the spring. There are 24 streets involved in the work.

Acting Minister of Railways & Canals G. P. Graham, stated in the House of Commons, recently, in answer to questions by T. L. Church, North Toronto, that the grade separation in Detroit will involve an expenditure of \$4,600,000, spread over a 10-year period; that the G.T.R. will be responsible for approximately \$3,000,000, and the City of Detroit will be responsible for the remaining \$1,600,000.

Toronto Viaduct Question in Parliament.

The following questions were asked in the House of Commons recently, by T. L. Church, North Toronto, and answered by acting Minister of Railways and Canals G. P. Graham:

Q. "Is it the Government's intention to carry out the Grand Trunk Ry's. commitments, as set out in the agreement for the erection of a viaduct in Toronto, dated 1913, towards which the city, the C. P. R. and the G. T. R., were to contribute one-third each of the capital cost?" A. The Canadian National Ry's. directors will deal with any commitments of previous managements."

Q. "Did a deputation wait on the Government, in the spring of 1922, urging the carrying out of this agreement and the opening of the new union station in Toronto, and what will be done by the Government to give effect to the viaduct agreement?" A. "Yes."

Q. "Will the Government, as requested by the deputation, use its best efforts to get a settlement of this long standing dispute, in the public interest?" A. "It is hoped that negotiations with respect to terminal arrangements at Toronto, the possible use of the new union station there, and related matters, will shortly be inaugurated by the Canadian National Ry's. management."

The following questions were asked by J. H. Harris, York East, Ont., and answered by the acting Minister of Railways and Canals:—

Q. "Is it the Government's intention to demand that the viaduct order of 1909, as amended and consented to in 1913, by the City of Toronto, the Toronto Harbor Commission, the Canadian Pacific and the Grand Trunk Ry's., and validated by a Board of Railway Commissioners' order be proceeded with, and when, or if not, why?" A. "Terminal arrangements at Toronto are not dealt with by the Government, but by the parties immediately concerned, and the Board of Railway Commissioners."

Q. "Has the Government had any representations made to it by the C.P.R. C., with a view of releasing that company from its obligations regarding this order, and if so, when, and on what promises were these representations made?" A. "No."

Q. "Does the Government consider this work is necessary?" A. "It is not a matter for the consideration of the Government, but of the Canadian National Ry's., the management of which hopes shortly to deal with the questions at issue."

Q. "If not, why?" A. "Answered by no. 6."

Q. "Has the Government under consideration any alternative scheme in this connection, and if so, what is it?" A. "No."

Malicious Railway Damages in Ireland.

—The Great Southern & Western Ry., which is the largest railway in Ireland, connecting Dublin and many important places in the south, and west, and north-east, and which operates 1,130 miles, has issued a map showing the location of malicious damages done to the system from June 28, 1922, to Jan. 5, 1923, which are summarized as follows: Permanent way damaged, 375; over bridges damaged, 51; under bridges damaged, 207; signal cabins damaged, 83; buildings damaged, 13; locomotives derailed, 42.

Hearing on Electric Classification Lamps for Locomotives.

The Board of Railway Commissioners sitting at Ottawa, Feb. 7, heard an application, by the Brotherhood of Locomotive Firemen and Enginemen and the Brotherhood of Locomotive Engineers, for an order directing Canadian railways to equip their road and assisting locomotives with electric classification and marker lamps. The C. P. R. was represented by E. P. Flintoft, Assistant General Solicitor; W. A. Newman, Mechanical Engineer; and J. A. Shaw, General Electrical Engineer; the Railway Association of Canada by C. P. Riddell, General Secretary; the Michigan Central Rd., by W. B. Kingsmill, Solicitor; and D. J. Donahue, Division Superintendent; and the locomotive men's brotherhoods by W. L. Best, Legislative Representative, B. of L. F. and E., and H. H. Lynch, General Chairman B. of L. F. and E. for C. P. lines. In the discussion, it was stated that all Canadian railways except the C. P. R. were equipping their locomotives with electric classification and marker lamps. Mr. Flintoft stated the C. P. R. was opposed to the order, on the ground that electric lamps are unnecessary, that they add nothing to safety, that they would be an additional source of expense, and that they would be to a certain extent unreliable. He said the C. P. R. had 1,884 locomotives equipped with electric headlights, and that it would cost \$95 a locomotive to equip them with electric classification and marker lamps, or a total of \$188,000. Mr. Best, in supporting the application, showed in a practical manner how oil lights are unreliable, blow out easily, corrode and waste oil, and introduce an element of extreme danger, because of the necessity of locomotive men going out on the running board to light them under all sorts of conditions. Messrs. Shaw and Newman stated why they considered electric lamps unreliable.

Steel Rail Order.—Canadian Railway and Marine World for February, in announcing orders given by the Canadian National Rys., for 85 lb. steel rails, standard C. N. R. section, mentioned that 40,000 tons had been ordered from Algoma Steel Corporation for Western Lines, delivery to commence March 1, and that 25,000 tons had been ordered from the British Empire Steel Corporation for delivery either at Sydney, N. S., or Montreal, commencing early in the spring; also that a further order for 15,000 tons from that company was under negotiation. We have since been officially advised that the B. E. S. Co., exercised the option it had, and that delivery of the 15,000 tons will be made immediately after the opening of navigation.

Bank Directors as Canadian National Railways' Directors.—Acting Minister of Railways and Canals G. P. Graham, stated in the House of Commons recently, in answer to questions by J. H. Harris, East York, Ont., that James Stewart, of Winnipeg, is a Canadian National Rys' director, having been appointed Oct. 4, 1922. The Railways and Canals Department had no information as to whether he is the same James Stewart, who is a director of the Bank of Montreal, nor has it any information as to whether there are any other bank directors who are Canadian National Rys' directors.

Freight and Passenger Traffic Notes.

The C.P.R. is reported to have handled 3,074 cars of grain from the prairie provinces to Winnipeg in the two weeks ended Jan. 14.

The Reid Newfoundland Ry.'s branch lines to Trepassay, Bay ve Verde, and Bonavista, were closed for traffic for the winter in January, in continuation of the policy inaugurated last winter, on the recommendation made by Sir George Bury in 1920.

The Canadian National Rys. are reported to have carried 302 cars of grain into Winnipeg, on Jan. 13, making a total of 90,022 cars, containing 116,156,000 bush. for the 1922-23 season, compared with 76,530 cars and 100,277,000 bush. for the 1921-22 season.

A New York fur trader, is reported to have stated in Calgary, Alta., recently that it cost him 50c a pound or \$100 a ton for freighting furs from Fort Chippewyan to the Alberta and Great Waterways Ry. railhead near McMurray, about 200 miles.

The Interstate Commerce Commission is reported to have directed that U. S. railways issue non-transferable, interchangeable tickets in the denomination of \$90 at a reduction of 20% of the face value. These tickets were asked for by commercial travellers.

The Canadian National Rys., are reported to have hauled 94,471 cars containing 122,530,000 bush. of grain from the prairie provinces, from Sept. 1, 1922, to the end of January, against 81,074 cars, containing 106,727,000 bush., for the same period of 1921-22.

The Regina, Sask., Board of Trade discussed recently the possibility of securing a through passenger train service from Minneapolis and St. Paul. The suggestion is for a train over the Great Northern Ry. to Northgate, and thence over the Grand Trunk Pacific Ry. to Regina.

At Newfoundland Board of Trade's annual meeting at St. John's Nfld., recently, the President in moving the adoption of the report of the council said, that during the past year the railway service has given very good satisfaction, under the management of R. C. Morgan.

The C.P.R. and the G.T.R. removed their representatives from the King's warehouse in Toronto after Dec. 31, 1922, making it necessary for all freight and storage charges on goods which have been put into the warehouse to be paid at the railways' respective offices on Simcoe Street.

The London & Port Stanley Ry. is reported to have handled 12,000 tons of coal on its line from Port Stanley to London, Ont., during the first week of the year. The coal was brought by car ferry from Conneaut, Ohio, five round trips being made. The car ferry will be operated as long as Lake Erie remains open.

The C. P. R. is reported to have hauled 7,000 cars of grain, totalling 10,234,000 bush., from the prairie provinces to Vancouver, B. C., for ocean shipment between Sept. 1, 1922 and Jan. 31. At Jan. 31 there were reported to be 900,000 bush. of grain from C. P. R. points awaiting shipment in the Vancouver elevator, and 500 cars in transit.

Timiskaming & Northern Ontario Ry. put in operation in January, through the fire swept district, a special relief train consisting of 4 freight cars and an office

car. The center of the train's operations is at Liskeard, Ont., and all supplies are being distributed from the relief train, which stops at all stations. It carries a staff of five, including two nurses.

The Canadian National Rys. District Passenger Agent's office at Vancouver, is reported to have received an application recently from Los Angeles, Cal., for a refund on a ticket bearing the signature of Jos. Hickson, General Manager, G.T.R., and issued Aug. 12, 1876. The ticket was issued in connection with a centennial tour and was the return portion available between Detroit and Philadelphia. It will be retained as a souvenir.

The Pacific Great Eastern Ry., with the approval of the British Columbia Minister of Railways, has inserted a condition in bills of lading or any contract for receiving, forwarding or delivery of goods, to the effect that all perishable goods conveyed or shipped over its line shall be subject to the owner's risk, as to damages from frost, detention or weather conditions, and that the company shall not be liable for damages to such goods arising from such causes.

The Canadian National Rys. recently reduced the night train service between Halifax, N.S., and St. John, N.B., from daily in either direction to tri-weekly one in either direction. Train 9 leaves Halifax at 8 p.m., daily except Sunday, for Truro, and from there to St. John on Tuesday, Thursday and Saturday, arriving in St. John at 7.40 a.m. on Wednesday, Friday and Sunday. Train 10 leaves St. John at 10.45 p.m., Monday, Wednesday and Friday, for Truro, where it runs daily, except Sundays, to Halifax.

Canadian National Rys.' western passenger officials had a conference with the Regina Board of Trade, Feb. 1, in reference to train service between Regina and Yorkton, Sask., over the Grand Trunk Pacific Ry. branch. At present there is a train service three days a week between these points. A daily train was asked for, and as an alternative it was suggested that a railway motor car might be operated alternately with the present train service, and utilized for the other three days of the week on the Regina-Weyburn line.

Transportation Companies Assessment in Toronto.—The Toronto Assessment Commissioner's annual report for 1922, contains the following details of the assessment of the various transportation companies' properties for city taxation:—Grand Trunk Ry., \$14,395,563; Canadian Pacific Ry. and Ontario and Quebec Ry., \$10,150,594; Canadian National Rys., \$1,964,926; Toronto and York Radial Ry., \$384,322; Toronto Suburban Ry., \$57,514; C. P. R. Telegraph Co., \$313,189; Canadian National Telegraphs, \$281,436.

Government Grain Elevator at Vancouver.—T. Sales, Saltcoats, Sask., asked in the House of Commons, Feb. 22: "In view of the fact that a bill has been passed providing for the erection of an extension to the terminal elevator at Vancouver, have plans and specifications been received by the Government; have any contracts been let in connection with the construction, and if so, who to, and for what amount." Minister of Marine Lapointe replied "No."

Hearing on Air Brakes for Self Propelled Cars.

At the Board of Railway Commissioners sitting at Ottawa, Feb. 7, railways were called upon to show cause why all cars propelled by other than steam power should not be equipped with air brakes. The C. P. R. was represented by E. P. Flintoft, Assistant General Solicitor, and W. A. Newman, Mechanical Engineer; the Canadian National Rys. by C. E. Brooks, Mechanical Assistant, Locomotive Department, to Vice President, operation and maintenance; the G. T. R. by J. P. Pratt, Assistant General Solicitor; the Michigan Central Rd. by W. B. Kingsmill, Solicitor; the Canadian Electric Railway Association by L. Burpee; the Railway Association of Canada by C. P. Riddell, General Secretary; the Brantford Municipal Railway, by W. T. Henderson, K. C.; and the Quebec, Montreal and Southern Ry., by A. L. Currie, Superintendent.

Mr. Riddell stated that the Railway Association's rolling stock committee, after study, had concluded that there was no necessity for equipping self propelled cars weighing less than 35,000 lb. with air brakes, as hand brakes were quite efficient. Mr. Brooks described the Canadian National Rys.' experiences with self propelled cars, and emphasized the efficiency of hand brakes on light cars. He pointed out that the installation of air brakes on light cars serving remote points on branch lines, where there would be no expert men to maintain the brake system, would result in delay and needless expense. Mr. Newman described tests made with a light gasoline car on the C. P. R. La-Salle Loop Subdivision, which demonstrated the hand brake to be efficient and reliable. Mr. Crombie emphasized the necessity for low first cost, and low operating cost, for self propelled cars serving branch lines of low traffic density, and pointed out how the installation of air brakes would increase costs. Mr. Currie reviewed the Q. M. and S. Ry. experience with a light car, which showed hand brakes to be safe and satisfactory. The Chief Commissioner said that while he duly appreciated the railways' desire to keep down costs, it was his duty to the public to see that railway travel be made as safe as possible, and hence the necessity for the investigation.

The electric railway representatives were interested in ascertaining if there would be any likelihood of change in general order 56, issued in May, 1910, which requires all electric cars over 37 ft. long, or weighing over 37,000 lb., to be equipped with power brakes. The proceedings indicated that as this order had brought forth no complaints since its issuance, further regulation of the situation in connection with cars on electric railways would be unlikely. Judgment was reserved.

Lt. Col. T. A. Hiam, Railway Expert to the Permanent Commission on Communication and Transit, under the League of Nations, Geneva, Switzerland, formerly private secretary to Sir Donald Mann, then Vice President, Canadian Northern Ry., in ordering Canadian Railway and Marine World for the League's Library, recently, wrote: "I prize the information which it contains very highly."

Grand Trunk Railway Commitments in Detroit and Chicago.

The following questions were asked in the House of Commons recently, by T. L. Church, North Toronto, the answers being given by acting Minister of Railways and Canals G. P. Graham:—

Q. "Is it the Government's intention to carry out the capital commitments of the Grand Trunk Railway in various parts of Canada for new terminals and capital expenditures in various places, as provided by agreements made by this railway before it was absorbed into the National Railway System?" A. "Such matters will be dealt with by the board and management of Canadian National Rys."

Q. "Is it the Government's intention to expend \$4,000,000 on the Grand Trunk Railway for grade separation at Detroit, and is the following dispatch substantially correct to the Toronto Globe? 'Detroit, Jan. 12.—Negotiations of 20 years standing between the city and the G. T. R. were completed today when the council gave tentative approval to a \$4,000,000 grade separation programme presented by J. W. Reid, City Engineer.' If so what amount of money will Canada be asked to provide for that work?" A. "Grade separation at Detroit will involve an expenditure of \$4,600,000, spread over a 10-year period. The G. T. R. will be responsible for approximately \$3,000,000 and the City of Detroit for the remaining \$1,600,000."

Q. "What amount of money will Canada have to furnish for the use of the Grand Trunk System for the new \$100,000,000 passenger terminal at Chicago to replace the Dearborn St. structure recently destroyed by fire?" A. "The terminal in question is used by the G. T. R. which, with four other railways, own the holding company—the Chicago and Western Indiana Rd. Co. No definite action in regard to a new station is expected for several years. Meanwhile, published estimates of possible cost are mere guesses. Should a new structure finally be decided on, it should be financially self-sustaining."

Special Trains for Canadian National Railways' Directors' Inspection Trips.

The following questions were asked in the House of Commons recently, by J. H. Harris, York East, Ont., and answered by acting Minister of Railways Graham.

Q. "Was a special train provided for the inspection of the new Canadian National directors in January 1923?" A. "Yes."

Q. "If so, how many private cars were attached to such special train, and how many cars in all composed such train?" A. "There were no private cars so-called attached to the train. There were, however, 7 business cars, these being the cars which were used by officers in the performance of their work. In addition to these cars, there were a baggage car for the train crew and an observation car in which delegations were met and received."

Q. "How many directors took part in such trip and between what points, and at what times did such directors take part in the trip?" A. "Three."

Q. "What was the cost of such trip to the National Ry. Co.?" A. "It is not possible, without a great deal of accounting work, to develop the cost of the

trip. There was no unnecessary cost, since the trip was an essential part of the directors' duties."

Q. "What practical results were obtained by such trip?" A. "The President and directors saw the lines and terminals, and became acquainted with the character of the traffic, its volume, the needs of the property, and, what is more important, the qualifications of the various officers, but the trip was primarily for the benefit of the President, in order that he might collect sufficient information to intelligently develop an organization for the administration of the property and decide the personnel of the railway system. It would be impossible to administer such a property without information of this character."

Mr. Harris asked precisely similar questions in regard to the directors' inspection trip made in Oct. 1922, and received similar answers, except to two questions, viz., no. 3, as to the number of directors on the trip, which were stated to be 6, and no. 5, as to practical results obtained, which was answered as follows: "Directors saw lines and terminals covered on trip, and discussed various railway matters with the general and territorial officers, who travelled on train from time to time over their respective territories. The directors obtained a comprehensive view of the properties, and the various important questions at issue."

Water Supply Improvements, Canadian National Railways, Western Lines.

During 1922, the policy of improving existing water supplies and the construction of new supplies where needed on the Canadian National Rys. Western Lines was continued, to reduce operating costs and improve traffic movement. The following is a list of the main points where such works were done: At Raymore, Pope, Hubbard, Rama, Maryfield, Paskewegon, Wiseton and Conquest, reservoirs were formed by damming a ravine and excavating a reservoir to give additional depth and storage. At Tilney, Ethelbert, Gravelbourg, Radville and Mecheche, ravines or creeks were dammed. In all cases earth dams, riprapped with rock against wave action, with puddle core walls carried down to an impervious stratum, have been used in reservoir work. The original reservoir at Edson, formed by damming a creek valley, was deepened. Ample supplies have been obtained by these means, the total water impounded amounting to 350,000,000 gall., and pumping facilities, pipe lines and tanks were constructed at each water supply. Cast iron water mains 6 in. in diameter were laid in connection with the Lloydminster and Kindersley water supplies, aggregating 26,200 ft. long, and 8 in. cast iron mains at North Battleford and Neebing of a total length of 19,000 ft.

Besides projects of the above character, smaller supplies were constructed and improvements to existing supplies made at 38 points. The undertakings involved among other work the construction of 11.8 miles of pipe line; 19 tanks, including 2 of 150,000 gall. capacity; 16 pumphouses with equipment, and 620,000 cu. yd. of excavation in dams.

John P. Watters, Locomotive Foreman, Canadian National Rys., Mirror, Alta., writes: "Canadian Railway and Marine World is very interesting and instructive, and I take great pleasure from it."

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AND
Marine World

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Exemption of Government Railway from Sales Tax.

On another page of this issue are details concerning the exemption of certain Dominion and Provincial government owned railway lines from the payment of sales tax on their purchases. The position is that purchases for the Canadian Government Rys, including the Intercolonial and subsidiary lines, and the National Transcontinental Ry., also the Timiskaming & Northern Ontario Ry. owned by the Ontario Government, are exempt from the sales tax, and that the exemption of the Hydro Electric Rys. operated by the Hydro Electric Power Commission of Ontario is under consideration. It appears probable that when the co-ordination of the various lines to be operated as the Canadian National Rys., are complete, the present Canadian Northern and Grand Trunk lines to be taken in will enjoy similar privileges, while the C. P. R. and other privately owned lines will have to pay sales tax on their different purchases. In this matter, the stand may very easily be taken that in the final analysis it does not matter whether a sales tax is charged on the goods supplied government owned utilities, or not, for the reason that the Government, which would collect the taxes if paid, is financially responsible for the railways. It may be argued that to charge the tax would be merely taking money out of one pocket to place it in another, or another case of robbing Peter to pay Paul. With this view, however, we cannot agree, for reasons which present themselves on considering the question.

In the first place, these government owned railways are operating in competition with, and in the same field as, privately owned railways. It is to the advantage of the community at large that knowledge be had of the comparative operating results secured by the government owned roads and privately owned roads, for by no other gauge, with all prior conditions given due consideration, can operating efficiency and economy be judged. It must be evident that if one road is able to buy goods on which no tax has been levied, while a competing road, operating on the same scale of rates, is compelled to use materials on which a tax has been collected, there can be no reliable standard on which to base a comparison of the operating results secured.

Not only is the community's opportunity to judge operating efficiency and economy unduly restricted by this removal of an even basis of comparison, but in addition the situation becomes one of manifest unfairness to the railway which must use materials on which a tax is levied. This is so obvious as to require no argument, in view of the fact that the railways against which the discrimination is directed have no opportunity to balance the situation, by increasing their unit revenues, or decreasing their unit costs, which the favored railways have not got to an equal degree. All that remains for the railways to which the aid is not extended is to play the game with the cards stacked against them so far as material costs are concerned.

It must be evident that if railway results are not going to be based fairly and squarely on the interrelation of railway operating revenues and expenses alone, but are going to be influenced by totally extraneous considerations and factors, of which this sales tax exemption is a fine example, there will not be

the same necessity for railway officers to have the relation as between revenues and expenses as favorable as possible, for the reason that that relation will not be a clean cut expression of the results being obtained, but will be a doubtful and obscure measure of them, influenced by unknown factors.

Another objection which may be taken to this sales tax exemption ruling, and perhaps the most important, is to be found in the fact that experience has demonstrated that in any community where railways have not been operated as purely commercial undertakings, the expenses of operation have been unduly high. A railway is, or should be, a purely commercial undertaking, like any other business, and it should be operated with such efficiency and economy that with commercially and economically possible rates it would look after itself financially, or be regarded as economically unjustified. Unfortunately, in Canada much of the railway mileage is economically unjustified, and the situation is one wherein government assistance is necessary in regard to capital expenditures, and in regard to the payment of deficits after meeting of operating expenses, but that should be no reason why government assistance should intrude itself into actual operation, particularly when competing lines must get along without such assistance. The aim should be to have government railways operated as railways, and as purely commercial propositions, and not as government enterprises to be granted government aid in actual operation, merely because they are such. With special privileges, of which this tax exemption is a good example, extended to government roads, people are forced to regard them collectively as purely an arm of the government owning them and therefore not free from the suspicion of being a political instrument. But with such privileges withdrawn, and with operation carried on so that the operating results obtained, good or bad, are obtained by the railways themselves and by nothing or nobody else, people will come to regard government roads primarily as railways, as they should be regarded, and will cease to think of them primarily as government undertakings, surrounded by that semi-commercial and semi-political atmosphere which envelopes all government undertakings. The success of the Canadian National Rys. enterprises will depend largely on the manner in which they are regarded by the public.

U. S. Railroad Administration
Losses.

A Washington press report of Feb. 4 states that losses sustained by the United States people through wartime operation of railways by the U.S. Railroad Administration, and its aftermath of earnings, guarantees and damage settlements, will total approximately \$1,800,000,000, according to data given in a report by J. C. Davis, Director General of Railroads, to President Harding. Figures received by Canadian Railway and Marine World indicate, on analysis, that the sum mentioned in the press report is correct. The loss on the 26 months of Government operation of the U.S. railways was \$1,141,000,000, this including, in addition to the direct operating loss suffered, some payments for undermaintenance of pro-

erty and also payments to various short lines in connection with Federal control matters. To this must be added some \$536,000,000 on account of the 6 months guarantee period immediately following the period of Federal control, and it is probable that when all railways debts are discharged by the U.S. Government the \$1,800,000,000 figure will be reached

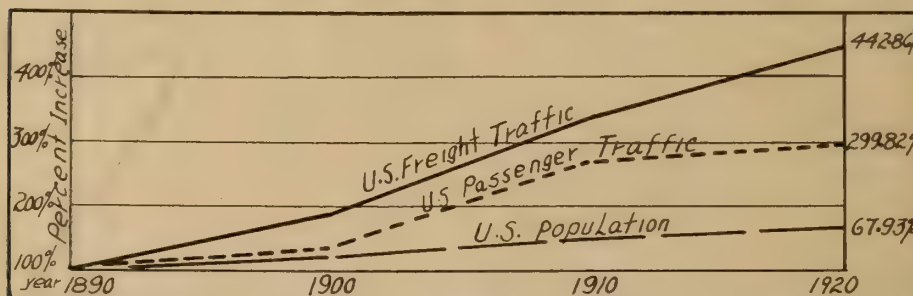
The Railway Rolling Stock and Equipment Outlook.

Since the completion of large rolling stock orders for Canadian railways in the latter part of 1920 and the early part of 1921, manufacturers and dealers supplying railway equipment of various kinds have felt the pinch of economic depression as much as, and in a good many cases, more than, other lines of industry. In the last two or three months, however, largely consequent on the placing of large orders by the Canadian National Railways, and of others by the C.P.R., as detailed in Canadian Railway and Marine World for February, business conditions for car and locomotive builders and the railway supply industry generally have brightened considerably, and the immediate future seems full of promise. In the United States 1922 was a year in which car and locomotive builders received orders which it will take them many months to complete, and recent orders and enquiries by many roads

and exceeded. It will readily be seen, therefore, that the U.S. Railroad Administration experiment was an expensive one for the U.S. people, the large deficit noted being in addition, of course, to the direct transportation charges paid, at rates equal to or in excess of those prevailing in Canada during and following the period of Federal control.

the future. In this connection the accompanying chart, showing railway traffic trends in the U.S. in relation to population changes, will be of value. Based on a report issued recently by the Interstate Commerce Commission, it shows that while population in the U.S. increased by 20.73% between 1890 and 1900, freight traffic increased 85.81% and passenger traffic 35.38% in the same period. Between 1900 and 1910, population increased 21.02%, or 46.11% over that of 1890, while freight traffic increased by 81.10%, or 234.64% over 1890, and passenger traffic increased 101.62%, or 172.95% over that of 1890. Between 1910 and 1920, while population increased 14.94% or to 67.93% greater than in 1890, freight traffic increased 62.22% or to 442.86% greater than 1890, and passenger traffic increased 46.48% or to 299.82% greater than in 1890.

Bearing in mind that activity in the



Percentage Increases in United States Population, Freight Traffic and Passenger Traffic by Decades, 1890-1920.

indicate that the demand for railway equipment is still far from being even temporarily met. As business conditions in Canada generally follow along the lines taken by those in the U.S., the condition mentioned in the latter country must be regarded as distinctly encouraging for the Canadian railway supply industry.

Of course, with no equipment orders of consequence having been placed for some time, with car shortage having been present last autumn in more or less degree throughout the whole of North America, and with business since time immemorial marked by booms and depressions succeeding one another, one of the latter having been present for over two years, at the end of 1922 some change for the better in the railway supply industry could logically have been expected. The mere fact of there having been logical grounds for the entertainment of such an expectation, however, should not form the occasion for viewing with decreased encouragement the upturn which has set in, any more than the fact that the railway supply industry experienced depressed conditions for an extended period should, while the depression existed, have made the future seem altogether discouraging.

The past is always of interest and the future is of importance, but the past may also be of importance in indicating

car and locomotive building and railway supply industries must depend primarily on railway traffic, if the U.S. experience can be taken as any indication of what developments in Canada will be like, some idea of the future in store for railway supply people in Canada may be arrived at. There is no reason to suppose that this country, with its vast agricultural, mineral, timber and other resources, will be restricted for long to its present population, and with increasing population, railway traffic, increasing so much faster than population, should come to the railways in volume hitherto undreamed of. Big traffic means the need for additional equipment of all kinds, for both replacements and additions, and the need for more equipment means more and better business for those who manufacture and supply it. The outlook, then, should not be so bad as it was almost universally painted in 1921 and the earlier part of 1922. Of course, there will be ups and downs in the future, as in the past, but the main trend is unmistakably in the direction of bigger and better business than the past has ever seen.

The Canadian National Rys. is reported to have completed the installation of a telephone dispatching circuit from Red Pass Jet., to Vancouver B. C., and to be abandoning telegraph dispatching over that distance.

Grain in Store at Elevators.

The Dominion Bureau of Statistics, Internal Trade Branch, reports that for the week ended Feb. 9, the quantity of grain in store decreased, as follows,—wheat, 148,694; oats, 239,341; barley, 248,497, and flax, 40,864 bush.

In western country elevators there were increases, wheat 142,047; oats 211,731; barley 22,249; and rye 729 bush., and a decrease in flax of 9,006 bush. Receipts for the week ended Feb. 2, were 4,477,012 bush., and shipments, 4,105,832. Interior terminal elevators showed decreases, wheat 3,693; barley 4,554, and flax 2,095 bush., and increases, oats 75,387; rye, 1,555 bush.

Public and private terminal elevators at Fort William and Port Arthur showed increases, wheat 588,918; oats 55,598; barley 101,016, and rye 70,114 bush., while there was a decrease of 26,788 bush. in flax. The total receipts at Fort William and Port Arthur, from Sept. 1, 1922 to Feb. 9, 1923, were 241,603,231 bush., and at Vancouver, B. C., 10,987,260 bush.

Winnipeg private terminal elevators showed decreases in all grains, wheat 5,517; oats 30,361; barley 1,810; and flax 975 bush.

In eastern public elevators there were decreases in all grains, wheat 1,694,477; oats, 188,014; barley 56,183, and flax 2,000 bush. The receipts of all grains were, by rail, 1,061,498 bush., and the shipments, by rail, 543,546 bush., and by ship 2,403,522 bush.

The quantity of U. S. grain in store at eastern public elevators was 1,967,789 bush., compared with 4,119,494 bush. at the same period in 1922.

U. S. lake ports showed decreases in oats 144,857; barley 140,525, and rye 67,158 bush., while there was an increase of 1,113,987 bush. in wheat.

U. S. Atlantic seaboard ports showed decreases in all grains, wheat 289,959; oats 218,533; barley 168,690; and rye 4,406 bush.

The United States Railways' Financial Results.

In Dec. 1922, the U. S. class 1 railways had a better month than in November, and a much better month than in Dec. 1921. Net operating income for December was \$79,155,000, representative of an annual return of 5.15% on the tentative valuation, compared with a return of 4.46% in November, and but 3.23% in Dec. 1921. Operating revenues in Dec. 1922, were \$513,575,800, or 20.8% greater than in Dec. 1921, but operating expenses, \$404,898,000, were but 15.2% greater.

For the complete year 1922, the total net operating income was \$776,421,400, so that U. S. class 1 roads earned at the rate of 4.14% on their tentative valuation throughout the year. In 1921, the total net operating income was \$615,945,600, representative of a return of 3.28%. Operating revenues for 1922 were \$5,616,284,800, an increase of 0.8% over 1921, and operating expenses for the year, \$4,454,939,700, were 3.2% less than in 1921. The operating ratio for the class 1 roads as a whole was 79.32 in 1922, compared with 82.61 in 1921. The effect of freight rate reductions on the roads' revenues is to be seen in the fact that while gross earnings increased by only eight tenths of 1%, about 9% more freight traffic was carried in 1922 than in 1921.

Removal of Canadian National Railways' Audit Office Staff from Moncton.

R. B. Hanson, York-Sunbury, N. B., said in the House of Commons on Feb. 23: "I desire to put the question to the acting Minister of Railways with respect to a notice which I am informed was posted in the Government Rys' office at Moncton yesterday as follows:—'To audit office staff. I have been instructed to notify you that the revenue accounts of the entire Canadian National Ry. system are to be handled at Montreal, commencing May 1. It is intended that the auditing of the Canadian Government Rys. revenue accounts for April will be completed at Moncton, and that as soon as practicable after May 1, our staff will be moved to Montreal. Any clerk who does not desire to go to Montreal, but prefers to sever his or her connection with railways, will please advise the chief clerk accordingly.' (Signed) W. H. Estano, Auditor of Traffic.' I am instructed that this affects 180 employes at the very outset of whom 110 are married men, for the most part owning their homes at Moncton. Is this notification correct?" Mr. GRAHAM, acting Minister of Railways and Canals: "The organization and distribution of the staff is entirely in the hands of the Canadian National Ry. I have no knowledge whatever of that notice."—Mr. MEIGHEN, Leader of the Opposition: "Will the minister find out and let Parliament know? I know how earnest a devotee he is of the principle that parliament should know all the details of operation."—Mr. JACOBS: "I thought we were taking the railways out of politics."—SIR HENRY DRAYTON: "At the same time I would like to ask the Minister if he would also advise us whether all the staff which has been looking after the auditing of the Canadian National Rys. will be moved from Toronto."—Mr. GRAHAM: "The Canadian National Ry. board and its offices are open to my hon. friend just as they are to me. A few days ago he moved for a copy of all letters that had been sent by any member of the government to the Canadian National Ry. board. This would add to that one or two letters, and it might be brought up in the House that we were trying to influence the railway board. The board has a difficult task to perform. Any information that is required, for which hon. gentlemen will ask in the regular way, I will endeavor to get through the board."—Mr. MEIGHEN: "This is asked for in the regular way. If the Minister takes the ground that he will not disclose such information in Parliament, I can understand that position. If he does not take that ground, I take it, of course, that he will have to reverse himself. We want the information."—Mr. GRAHAM: "I am, of course, out of order just as my right hon. friend was. But I did not take any such ground; I did not hint at any such ground, rather the contrary. I said that the information could be secured from the board by any member; I also informed him that they could communicate with that board. But I added that if it was so desired, I would try to secure the information."—Mr. FIELDING: "Is my right hon. friend not reversing his position when he asks for such information?"—Mr. MEIGHEN: "I am not at all. If the Government say that they do not feel it is in the public interest that these details should

be given, I will abide by that decision."—Mr. FIELDING: "The government is not supposed to possess such information."—Mr. MEIGHEN: "But we are asking them to get it."—Mr. FIELDING: "I am not sure that they have the right to get it under the rules."—Mr.

MEIGHEN: "That is different from the position taken a year ago. If my hon. friend would take the position that was then taken we would not complain."—Mr. FIELDING: "The right hon. gentleman should stand by his own position."—Mr. MEIGHEN: "I do, precisely."

Canadian National Railways Electrification Plans for Toronto District.

Canadian Railway and Marine World gave in January on pg. 27 and in February on pg. 83 particulars of the developments in connection with provision of an electric railway service by the Canadian National Rys. in the Niagara Peninsula and east and west of Toronto. As stated, reports had been presented to the management on the situation east of Toronto, where the proposition is to use a portion of the original Canadian Northern line between Toronto and Trenton, together with the projected Toronto Eastern Ry., and also concerning the Niagara, St. Catharines and Toronto Ry. situation.

Sir Henry Thornton, in speaking at the Toronto Canadian Club's luncheon on Feb. 12 said:—"This community, that is to say, the territory lying between Coburg, Toronto, Hamilton and Niagara Falls, has been seeking better and more satisfactory means of transport. The C. N. R. system recognizes its obligation to the people who live in that territory and in the territory contiguous to the cities which I have named. We recognize that to retain traffic we must give service. I propose to have the whole situation thoroughly and fully investigated to find in what degree our service fails to meet the requirements of the public and what is necessary to meet those requirements. A committee of appropriate officers of our system already has the subject under investigation, and we hope to collaborate and co-operate with the various municipalities that are interested and with any other interests which in co-operation with us may find it possible to give to the public that service which they require. Let me assure you, that the interests of the C. N. R. system are only selfish to the extent that it will not willingly part with any of its traffic if it can retain that traffic by giving to the public the service which it desires. We are prepared to co-operate and work with any interests which will enable us to best serve the interests of the people of this section of Ontario."

The committee mentioned above consists of R. A. C. Henry, B.A., B.Sc., of the Railways and Canals Department, who is attached to Sir Henry Thornton's personal staff, and who is chairman of the committee; C. A. Hayes, Vice President, Traffic Department, Canadian National Rys., Toronto, and C. G. Bowker, Operating Manager, G. T. R., Montreal. The following questions were asked in the House of Commons Feb. 15 by T. L. Church, North Toronto, the answer being given by acting Minister of Railways Graham:—

Q. "Has the Government's attention been called to a telegram sent to the Hamilton Board of Trade by Sir Henry Thornton, President, National Railways dated Dec. 1922, stating that the Grand Trunk would be immediately electrified between Toronto, Hamilton and Niagara Falls and the border?" A. "The President of the Canadian National Ry. system has given no assurance to the effect

that the Grand Trunk would be immediately electrified within the territory contemplated by the question. An assurance was given, however, that the Canadian National Rys. would at once undertake an investigation of the whole position, to see to what extent it was necessary to improve transportation facilities to meet the requirements of the public; and that as soon as such investigation was completed the public might anticipate immediate relief."

Q. "Have plans been prepared, what will the cost of this work be, and what amount will be required to be furnished by Parliament for this project, and why were the Government and Parliament not consulted before such a declaration of policy involving an expenditure of millions?" A. "The investigation referred to is under way, but has not been completed."

Q. "Is it the Government's intention to electrify the National System in other parts of Canada as well?" A. "The Canadian National management will consider the electrification, from time to time, of such parts of the system as can be electrified economically and in the interests of the public."

Longlac-Nakina Cut-off Construction, Canadian National Railways.

As stated in Canadian Railway and Marine World previously the Division Engineer in charge of construction is Capt. K. G. Polyblank, four resident engineers have been appointed as follows:—C. H. N. Spafford, formerly Assistant Engineer, Nipigon Division, mile 1 to 7; H. L. Benson, formerly Assistant Engineer, Nipigon Division, mile 8 to 16; W. B. Redman, formerly Concrete Inspector, Montreal Division, mile 17 to 23; Hector MacNeil, formerly Assistant Engineer, Chief Engineer's office, mile 24 to 30, including Nakina yards. Their respective headquarters will be about the middle of each section. The line has been revised and retraced. The clearing is well under way and two rock cuts on the south end of the line are open.

O. W. Swenson is in charge of the work for the contractors, Foley Bros., and Hervey, and R. J. Gjerdi is foreman. Four contractors' camps have been built at miles 0, 3, 11 and 18. The contractors are concentrating on supply and material delivery during the winter, on clearing practically the whole line, opening up rock work and building two of the permanent concrete structures at miles 14 and 29. They have sublet the teaming of supplies and materials and all the work opened.

P. H. Fox, Assistant Superintendent, Canadian National Rys., Trenton, Ont., in remitting his renewal subscription for Canadian Railway and Marine World, says: "A well spent two dollars."

The Hudson Bay Railway's Position and Future.

The question of what is to be done in connection with the partially completed Hudson Bay Ry., from Pas to Port Nelson, Man., continues to attract attention from legislatures, assemblies, public bodies of various kinds and a number of the general public.

Under the order-in-council published in Canadian Railway and Marine World for February, pg. 51, a train of boarding cars and gangs of men are reported to have been dispatched to the end of track at Kettle Rapids, mile 334, to put the track into such a condition as would enable the 120 miles of rails referred to in the order to be brought out. This train and the men are reported to have arrived back at Pas, after an absence of about three months, having failed to get beyond mile 285. The track is stated to have been found in very bad condition, and nothing was done to take up any of the track, or haul out any of the surplus of construction materials along the line.

The leader of the Opposition, Mr. Meighen, asked in the House of Commons on Feb. 12: "Has an order, or other instruction, been issued by the Government or by the Canadian National Rys., for the taking up of rails from the Hudson Bay Ry., and if so, by whom, and for how much mileage, and where." Acting Minister of Railways G. P. Graham replied: "Lifting of rails on unused portion of line, mile 214 to end of steel at mile 334 for use elsewhere in west, was recommended by Vice President and General Manager, Canadian National Rys., approved by the directors, and authorized by order in council Nov. 24, 1922." In answer to other questions, Mr. Graham stated that the rails weighed 80 lb. a yard, and as a result of representations made to Sir Henry Thornton when in the west recently, it was decided to let the matter stand pending further consideration.

On Mr. Meighen's motion, the House of Commons passed an order, on Feb. 12, for a copy of all correspondence, writings, telegrams and other documents passing from the Government or the Canadian National Rys., since Aug. 1922, having to do with the taking up of rails on the Hudson Bay Ry.

The Lieut.-Governor's speech at the opening of the Manitoba Legislative Assembly recently referred to the position of construction on the line and said:—"In view of the fact that provision was made years ago by the Dominion Government for defraying the whole cost of construction out of the sale of western land, a resolution will be submitted to you declaring that the completion of the H. B. Ry. should be proceeded with as a matter of vital importance to Western Canada, without further delay." During the discussion on the address in reply, W. C. Kinnell, the Government whip, is reported to have stated he would advocate handing over the railway as it stands to Manitoba and Saskatchewan, so that immediate action could be taken to have it completed and bring relief to the farmers in the West in the matter of freight rates and faster shipment of grain to Europe.

The Saskatchewan Grain Growers passed a resolution at Saskatoon, Jan. 27, calling upon the Dominion Government to complete the line at the earliest possible date. One of the speakers is reported to have stated that while it takes at present practically a month to

deliver grain in Montreal from Saskatoon, it could be delivered in Nelson within ten days. The Manitoba agricultural societies passed a similar resolution Feb. 2.

A private person in discussing the matter advocates the abandonment of the idea of developing Port Nelson, and the diversion of the line to Fort Churchill, which he claims is an excellent port, and he advocates the building of a railway from Fort Churchill to Lake Athabaska.

An Alberta view of the matter favors proving the possibility of regular communication from Hudson Bay to the ocean before any further expenditure is incurred on the railway.

Questions About Sir Henry Thornton's Appointment.

The following questions were asked in the House of Commons recently by the leader of the Opposition, Mr. Meighen, and answered by acting Minister of Railways Graham.

Q. "Did the Government in Oct. 1922, enter into a contract with Sir Henry Thornton by which it agreed that he would be appointed President and General Manager of the Canadian National Ry. Co., and by which contract Sir Henry's salary was fixed, and other terms and conditions imposed?" A. "Yes."

Q. "If so, did the Government have any authority from Parliament for making such contract, and in what section of what statute is that authority?" A. "No."

Q. "What authority in law exists or existed for the Government to enter into any such contract for a fixed term?" A. "None."

Q. "If the Government had no authority from Parliament for the contract made, why did the Government make it?" A. "It was deemed in the public interest to definitely secure Sir Henry's services, and, as the board of directors had not been previously appointed, the Government decided to make an arrangement with him and rely on the board ratifying it, as has been done."

Q. "If the Government was of opinion that a contract of the nature made with Sir Henry Thornton was necessary, and if there was not authority in law to make it, why was Parliament not asked at last session to grant such authority by statute in the usual way?" A. "The circumstances under which it became advisable to execute this contract were not contemplated during last session of Parliament."

Mr. Meighen, moved in the House of Commons, on Feb. 21, for a return of all correspondence between the Government and Sir Henry Thornton, leading or in any way relating to the contract made with Sir Henry for the management of the Canadian National Rys., and for a copy of the contract. The following discussion ensued:—Hon. G. P. GRAHAM, acting Minister of Railways:—"I have no objection to the motion, but there was no correspondence."—Mr. MEIGHEN: "It may be that I am relying too much on the press, but I understood that an application was filed. Would that not come within the terms of this motion?"—Mr. GRAHAM: "It would if there were an application, but there is not."—Mr. MEIGHEN: "The press is wrong again. It is frequently doing the government cruel injustice."—Mr. GRAHAM: "I will not say until

I see what the press says."—Motion agreed to.

A copy of the contract was submitted in the House of Commons, on Feb. 24, by the acting Minister of Railways. A press report says that it provides for Sir Henry's engagement for 3 years at \$50,000 a year; that either party may terminate the agreement on 6 months notice, under a compensation provision; and that the remuneration may be changed by mutual agreement.

Pensions for Canadian National Railways' Employees.

J. T. Shaw, Calgary, West, Alta., asked in the House of Commons recently if the Government had under consideration any pension scheme to be applied to the Canadian National Ry's employees and if not does it contemplate taking the matter under advisement shortly?

Acting Minister of Railways Graham replied:—"That is a pretty large question to answer without any notice having been given. The Grand Trunk has a superannuation scheme. The Intercolonial has what is called a provident fund, which is a similar scheme. Just what the Canadian Northern had I am not able to say, perhaps nothing. But the question of having some kind of fund established is under consideration. I cannot give any particulars with regard to it."

The Railways and Canals Portfolio.

The leader of the Opposition, Mr. Meighen, asked in the House of Commons recently: "Would the Prime Minister tell the House when he expects the vacant portfolio of Railways and Canals filled. I may remind him that it is not long since he was very impatient of 'make-shift' arrangements about portfolios, and that the present acting Minister of Railways is administering three departments."—PRIME MINISTER KING replied: "The present acting Minister is doing so well that I think I may as well take my time to consider the matter."—MR. MEIGHEN asked: "Is it the intention to have the portfolio filled?"—MR. KING replied: "Yes, at some time, but just when I cannot say."

Signals for Railway Grade Crossings.

—The Board of Railway Commissioners' general order 370, passed Sept. 6, 1922, contained the following sentence:—"Where gates are provided, a red light, hooded so as to show on the highway only, must be displayed by night." The Board passed general order 374, Jan. 16, striking out the sentence quoted, and substituting the words, "Where gates are provided, a red light must be displayed by night. In both cases such light shall be hooded so as to show along the highway only."

C. P. R. Emigration Campaign in Great Britain.—The C. P. R. is carrying on an extensive campaign for the promotion of emigration from Great Britain to Canada. Ten men and one woman lecturer, dealing with a variety of subjects, have made several successful tours during the last few months. Most of the lectures have been illustrated with moving pictures.

Grade Crossing Accidents.—The Automobile Underwriters' Association has suggested to the Ontario Motor League the passing in Ontario of a law similar to one in force in Virginia, which compels automobile drivers to come to a full stop when reaching a level railway crossing, or be liable to a heavy penalty.

Railway Operating Revenues, Expenses and other Statistics for November.

The following comparative table for November, 1922 and 1921, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There is a slight increase in the number of roads included under this heading, so that the data for 1922 and 1921 is not directly comparable with previous reports.

As the Canadian Government, Canadian Northern and Grand Trunk Pacific Railways are under one management, and operated as one system, the monthly operating reports for 1922 contain a consolidated report for these railways, under the heading "Canadian National Rys.," which includes the old Canadian Government Rys., viz., Intercolonial, Prince Edward Island, National Transcontinental and various local lines in

the Maritime Provinces and Quebec, which have been acquired by the Dominion Government and added to the Canadian National Rys.; the lines operated as the Canadian Northern Ry. System, prior to its acquisition by the Dominion Government; and the Grand Trunk Pacific Ry., but does not include electric lines.

The column headed "Canadian Pacific" includes also the Montreal and Atlantic and Esquimalt and Nanaimo Rys.

The column headed "Grand Trunk" includes all the G.T.R. Co. of Canada lines, including 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Provincial Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair Rivers.

Items 1 to 6 in the table include rail

lines revenues only. Previous to this year they included water lines. Operating income items have been added. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. In former years the total of mixed train miles was added to both freight and passenger train miles when computing averages. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, excess baggage, parlor cars, etc., whereas previous reports gave an average per train mile of passenger receipts only. The number of employees is also a new feature of this year's reports.

	All railways.		Canadian National		Canadian Pacific		Grand Trunk	
	1922	1921	1922	1921	1922	1921	1922	1921
Operating Revenues								
Freight	\$36,071,238	\$32,329,544	\$10,197,569	\$10,313,396	\$16,713,469	\$14,095,454	\$5,763,300	\$4,765,442
Passenger	6,395,446	6,155,413	1,600,892	1,492,767	2,724,089	2,801,957	1,142,278	1,069,954
Mail	608,568	605,459	168,591	170,724	282,726	285,317	115,000	105,112
Express	1,177,682	1,175,912	329,182	297,694	493,069	566,268	221,000	221,050
Other freight train	8,461	5,827	4,778	.....	3,509	5,064	.....	.....
Other passenger train	461,575	462,881	150,050	157,589	255,378	248,065	37,200	36,407
Water line	401,608	364,010	.....	.....	299,369	283,181	.....	.....
All other	1,303,646	1,273,209	286,692	281,335	664,878	673,899	202,800	172,515
Total railway operating revenues	46,368,222	42,371,709	12,737,757	12,713,509	21,436,490	18,959,208	7,481,578	6,370,482
Operating expenses								
Maintenance of way and structures	\$6,890,796	\$7,422,085	\$2,789,053	\$2,598,623	\$2,585,822	\$2,995,831	\$822,621	\$1,189,096
Maintenance of equipment	8,862,625	8,676,397	2,561,477	2,824,639	2,963,468	3,378,987	2,593,892	1,629,499
Traffic	1,120,971	860,638	244,160	114,930	667,505	570,881	153,036	125,586
Transportation	18,983,496	17,688,790	6,039,727	6,155,891	7,953,216	6,841,646	3,129,360	3,041,998
Miscellaneous operations	383,558	456,161	181,312	150,682	181,723	223,023	31,031	26,069
General	941,524	971,145	313,276	237,732	297,638	362,082	195,289	232,787
Transportation for investment	Cr. 98,271	Cr. 97,354	Cr. 95,753	Cr. 89,505	.....	.....	Cr. 969	Cr. 7,451
Total railway operating expenses	37,084,699	35,977,864	11,983,254	11,992,994	14,649,374	14,372,452	6,924,264	6,187,587
Operating income								
Net operating revenue	\$9,283,522	\$6,393,845	\$754,502	\$720,514	\$6,787,115	\$4,586,756	\$557,313	\$182,895
Railway tax accruals	1,701,392	1,376,016	148,207	49,127	1,431,362	1,172,676	80,500	106,669
Uncollectible revenues	2,055	1,555	.....	.....	.....	.....	645	1,483
Hire of equipment	Cr. 413,202	Cr. 253,290	Cr. 167,144	Cr. 88,535	Cr. 410,071	Cr. 281,639	Cr. 135,832	Cr. 153,895
Joint facilities rents	Dr. 81,086	Dr. 97,278	Cr. 20,029	Cr. 921	Dr. 11,023	Dr. 4,099	Cr. 42,337	Cr. 45,018
Operating income	7,912,189	5,172,285	793,370	760,844	5,754,800	3,691,619	654,337	273,657
Operating statistics								
Average miles of road operated	38,861	38,635	17,267.72	17,143.67	13,877.2	13,785.8	3,612	3,612
Tons carried (revenue freight)	11,824	9,161	2,698	2,150	4,192	3,038	2,465	1,960
Tons carried one mile (revenue freight)	4,193,802	2,939,165	1,361,636	981,154	2,104,333	1,344,571	465,673	394,240
Tons carried (all freight)	13,835	10,592	3,288	2,601	5,041	3,635	2,929	2,244
Tons carried one mile (all freight)	4,594,227	3,232,927	1,532,472	1,105,253	2,296,363	1,484,900	496,364	417,040
Revenue passengers carried	3,353	3,338	967	921	1,127	1,131	832	857
Revenue passengers carried one mile	220,240	212,601	58,084	56,027	95,756	95,591	40,615	37,666
*Freight train miles	7,279	5,483	2,419	2,112	3,327	2,070	1,027	856
*Passenger train miles	3,628	3,621	1,076	1,046	1,494	1,543	638	631
Total train miles (revenue and non-revenue)	11,070	9,338	3,598	3,297	4,864	3,677	1,665	1,488
Freight car miles—loaded	159,282	110,916	52,178	38,995	71,011	44,670	23,360	16,436
Freight car miles—empty	90,131	64,280	31,703	25,600	42,614	23,543	10,422	9,115
Passenger train car miles	25,610	25,492	7,943	7,538	10,772	11,318	3,729	3,684
Total amount of payroll	\$19,950,773	\$19,976,475	\$7,056,245	\$7,168,727	\$7,619,862	\$7,636,327	\$3,713,579	\$3,691,482
Number of employees	161,074	161,543	61,093	59,936	58,764	61,554	29,182	28,835
Averages per mile of road operated								
Operating revenue	\$1,193.18	\$1,096.72	\$737.66	\$741.59	\$1,544.72	\$1,375.27	\$2,071.31	\$1,763.69
Operating expenses	\$934.29	\$931.22	\$693.97	\$699.56	\$1,055.64	\$1,042.55	\$1,918.40	\$1,713.06
Tons moved one mile (revenue freight)	107,918	76,075	78,854	57,231	151,040	97,533	128,923	109,147
Tons moved one mile (all freight)	118,222	83,679	88,748	64,470	165,477	107,712	137,421	115,460
*Averages per freight train mile								
Freight revenue	\$4.96	\$5.90	\$4.22	\$4.88	\$5.02	\$6.81	\$5.61	\$5.57
Tons of freight (revenue freight)	576.1	536.0	562.7	464.4	632.5	649.6	453.4	460.5
Tons of freight (all freight)	631.1	589.5	633.3	523.1	690.2	717.3	483.3	487.1
Loaded freight cars	21.9	20.2	21.6	18.5	21.3	21.6	22.7	19.2
Empty freight cars	12.4	11.7	13.1	12.1	12.8	11.4	10.1	10.6
*Averages per passenger train mile								
Passenger train revenue	\$2.37	\$2.32	\$2.09	\$2.03	\$2.51	\$2.53	\$2.37	\$2.27
Passengers carried	60.8	58.7	54.0	53.5	64.1	61.9	63.6	59.6
Passenger cars	7.1	7.0	7.4	7.2	7.2	7.3	5.8	5.8
Average operating expenses per train mile	\$3.35	\$3.85	\$3.33	\$3.64	\$3.01	\$3.91	\$4.18	\$4.16
Average length of haul (revenue freight) miles	354.7	320.8	504.9	456.2	501.9	442.5	188.9	201.1
Average passenger journey miles	65.8	63.7	60.0	60.8	84.9	84.5	48.8	44.0
Average tons per loaded freight car	28.8	29.1	29.4	28.3	32.3	33.2	21.2	25.4
Average freight receipt per revenue ton mile .....	.860c	1.100c	.749c	1.051c	.794c	1.048c	1.238c	1.209c
Average passenger receipt per passenger per mile	2.877c	2.895c	2.756c	2.664c	2.845c	2.931c	2.812c	2.841c
Ratio of pay roll to operating revenues	43.0%	47.1%	55.4%	56.4%	35.5%	40.3%	49.6%	57.9%
Ratio of pay roll to operating expenses	53.8%	55.5%	58.8%	58.8%	52.0%	53.1%	53.6%	59.7%
Ratio of operating expenses to revenues	80.00%	84.91%	94.08%	94.38%	68.34%	75.81%	92.55%	97.13%

*Contains a proportion of mixed train miles.

The Railways' Operating Results for November, 1922.

As Canadian railway results in Oct., 1922, were very much better than in Oct., 1921, so were the Nov., 1922, results, published on the preceding page, much more favorable than those in Nov., 1921. The most outstanding features of the railways' business in November were the amount of traffic handled, and the economy with which it was handled, and it was due to this heavy traffic, and the opportunity of efficient and economical handling which it presented automatically, that the effect of large rate decreases was more than counterbalanced, thus affording additional demonstration, if such were needed, that transportation costs to the public are and will be influenced very largely by the amount of traffic afforded by the public to the railways.

To just what extent the rate reductions referred to have cut into the railways' gross earnings is evident on an examination of freight earnings in relation to the amount of traffic handled. In Nov., 1922, the railways as a whole carried 4,193,802,058 ton miles of freight, a 43% increase over that handled in Nov., 1921, but earnings from freight service in Nov., 1922, were not quite 12% greater than in Nov., 1921. To arrive at an approximation of the rate reductions' effects in another and perhaps more conclusive way, the average receipt per revenue ton mile of 0.860c in Nov., 1922, may be compared with the figure 1.1c per revenue ton mile in Nov., 1921, which shows that the decrease is 21.9%, which is certainly representative of a substantial reduction in unit revenues in a period when average wages did not decline by half as great a percentage, and during which railway material prices showed practically no decline at all.

Passenger earnings, and earnings from auxiliary services, did not vary materially from those in Nov., 1921, so that the total gross earnings for the roads as a whole bore about the same relation to the total earnings for Nov., 1921, as did the freight earnings in the respective months. Although it would naturally have been expected that the reductions made in the pay of the maintenance and other forces in 1922 would result in some saving in operating expenses, it would also naturally have been expected that the handling of a freight traffic 43% greater than in Nov., 1921, would mean much greater operating expenses, and so much greater as to make the savings to be effected through wage reductions (which applied to only certain employes, among whom were not locomotive men and trainmen) comparatively negligible. It is with gratification, therefore, that the facts must be regarded. To keep the increase in operating expenses in Nov., 1922, as compared with Nov., 1921, to but \$1,106,836, on the vastly greater amount of traffic handled, must be looked upon as an outstanding railway achievement. The result of this comparatively small increase in operating expenses, combined with the more extensive increase in gross revenues, was to increase net earnings for the roads as a whole by \$2,889,677, with a corresponding benefit in operating income, and to decrease the operating ratio from 84.91 to 80. Although this ratio was not as favorable as in October, when it was 76.26 for the roads collectively, it must be regarded as distinctly encouraging, in view of the high operating ratio figures which have been characterizing Canadian

railway operation during the past three years.

Analysis of the figures commonly taken as an indication of operating efficiency shows that in Nov., 1922, while ton mileage increased by over 43%, over Nov., 1921, freight train mileage increased by only 32%. Attention was called in Canadian Railway and Marine World for February to the large increase in ton mileage in Oct., 1922, compared with Oct., 1921—26.5%—which was accompanied by an increase in freight train mileage of but 17.1%. The record in November in this respect is worthy of equally favorable notice. Attention may also well be called to the increase in train loading in Nov., 1922, compared with Nov., 1921, and in the increase in the number of cars per average freight train, which two factors, taken together, were able to wipe out the effect of the slightly decreased average car loading, and to produce the good relationship as between train mileage and ton mileage above remarked upon.

As the financial results secured by the Canadian National, Canadian Pacific, and Grand Trunk Railways in November were reviewed at length in Canadian Railway and Marine World for February, pg. 73, their operations for that month will be referred to here but briefly. Attention may, however, be called to the effect which rate reductions had on Canadian National Rys' freight earnings, despite the increased traffic handled, and the situation may best be expressed by stating that although freight traffic increased by 38.8% over Nov., 1921, freight traffic revenue decreased by 1.1%. The C.P.R. had the same experience, as while its freight traffic increased as between Nov., 1921, and Nov., 1922, by 56.5%, freight traffic revenue increased by only 18.6%. The G.T.R., not participating in the heavy movement of grain from the western provinces, was not affected by rate reductions as were the Canadian National and C.P.R.; in fact, due to that road handling a preponderance of high class freight, the situation was that while freight traffic increased 18%, freight traffic revenue increased by 21% over Nov., 1921.

Taken on the whole, the Canadian railways' results in Nov., 1922, as in October, when a large traffic was handled at low rates, with much better results to the railways than when a smaller traffic was handled at higher rates, demonstrates, as indicated in the introductory paragraph, in a most convincing manner, that Canada's fundamental need, so far as railway transportation is concerned, is increased traffic. Canadian Railway and Marine World has been preaching that doctrine consistently, and taking pains to point out just why it is the correct one, but more convincing than anything we, or anyone else, can say on the matter, are the practical demonstrations furnished in Oct. and Nov., 1922. The fundamental fact is that the greatest agency in reducing transportation costs to the public will be an increase in population and traffic, and the practical demonstrations of that proposition's correctness as given by the railways in October and November should be carefully observed.

Eugene Pilon, an Ottawa barber, was sentenced to 10 days imprisonment there recently, for using bad language in the presence of women on a train.

The Bad Order Car Situation.

The Railway Association of Canada's statement on the car situation shows that at Feb. 1 the total number of freight cars on Canadian lines was 190,878. The A.R. A. allowance for bad order cars, on the 7% basis, would make the normal number as stated in this and the preceding number of bad orders 13,361, but the actual number on Feb. 1 was 10,952, representative of a bad order percentage of 5.73. The car shortage is given as 3,542. At Jan. 1 there was no car shortage reported, but on the contrary a car surplus of 244, so it is evident that railway traffic during January did not show any falling off, but on the contrary must have experienced some increase. It is also evident that, when a car shortage is present in the month of February, and when the railways have their bad order equipment restricted to the above noted small percentage of the total, a large car shortage can logically be expected next autumn if crop conditions are good and if general traffic remains good, unless the railways make substantial additions to their equipment. Orders have been given for quite a number of freight cars, as stated in this and the preceding number of Canadian Railway and Marine World, but with present economic conditions continuing or becoming better it is likely that the number of cars ordered will not be great enough to influence the situation in large measure.

The American Railway Association's Car Service Division reports that on Jan. 15 the total number of freight cars on U.S. class 1 roads was 2,268,126, of which 217,200 or 9.6% were in bad order. Out of 1,032,455 box cars, 93,184 or 9% were in bad order; out of 58,997 refrigerator cars, 6,740 or 11.4% were in bad order; out of 958,402 gondola cars, 98,004 or 10.2% were in bad order; out of 82,437 stock cars, 7,541 or 9.1% were in bad order, and out of 93,764 flat cars, 9,007 or 9.6% were in bad order. On Jan. 1, the U.S. bad order car percentage was 9.5.

Orders, etc., re Train Movements.—The Board of Railway Commissioners' Secretary, A. D. Cartwright, has issued the following circular to railway companies:—"I am directed to inform you that the Board has before it a memo from the Brotherhood of Locomotive Engineers' Dominion Legislative Board requesting that all orders, circulars or rules of the Board, affecting the movement of trains, be placed in bulletin books, and to ask for your company's views in regard thereto. I am further directed to state that, without in any way making any suggestion by way of limiting the liability of the railway in respect of having such information brought to the attention of its employes, the Board understands that a system having a book provided for the bulletin itself to be pasted, and provision for the signature of the employes, and for the hour and date of reading being noted as a matter of receipt and record, has worked satisfactorily."

Regulations for Freight Trains Passing Through Tunnels.—The Board of Railway Commissioners issued a circular, Feb. 2, directing that on trains passing through tunnels, more than 500 ft. long, cars loaded with wood, lumber, poles, etc., shall not be placed next to the locomotive, and, if sufficient box cars are available, at least three of them shall be placed between the locomotive and the loaded timber cars.

Birthdays of Transportation Men in February.

Many happy returns of the day to:—
W. G. Annable, Assistant Passenger Traffic Manager, Ocean Traffic, C.P.R., Montreal, born at Ottawa, March 3, 1875.

John Archibald, Locomotive Foreman, C.P.R., Coquitlam, B.C., born at Edinburgh, Scotland, March 13, 1872.

G. M. Baillie, Assistant Superintendent, London Division, Ontario District, C.P.R., Windsor, Ont., born at West St. John, N.B., March 31, 1879.

A. B. Buckworth, Deputy Minister of Railways for British Columbia, Victoria, B.C., born at Birmingham, Eng., March 2, 1876.

Allan Cameron, Oriental Manager, C. P.R. and Canadian Pacific Steamships Ltd., Hong Kong, China, born near Owen Sound, Ont., March 14, 1864.

H. S. Carmichael, Passenger Manager, Holland-American Line, London, Eng., born at Glasgow, Scotland, March 7, 1874.

A. V. Clark, Managing Director, Canadian Pacific Ry. Co. (France), Paris, France, born at Burwell, Cambridgeshire, England, March 8, 1877.

P. W. Clarkin, Division Freight Agent, Island Division, and District Passenger Agent, Canadian National Rys., Charlottetown, P.E.I., born at North Wiltshire, P.E.I., March 22, 1876.

F. G. J. Comeau, General Freight and Passenger Agent, Dominion Atlantic Ry., Halifax, N.S., born at Meteghan River, N.S., March 10, 1859.

W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Montreal, born there, March 22, 1871.

A. E. Cox, General Storekeeper, Western Lines, Canadian National Rys., Winnipeg, born at Huddersfield, Eng., March 12, 1863.

Senator N. Curry, Chairman, Canadian Car & Foundry Co., Montreal, born in King's County, N.S., March 26, 1851.

C. C. Curtis, Manager, Cape Breton Electric Co., Sydney, N.S., born at Battle Creek, Mich., March 27, 1883.

H. G. Dring, European Passenger Manager, Canadian Pacific Ry., London, Eng., born at Easton, Northamptonshire, Eng., March 8, 1881.

Patrick Dubee, Secretary - Treasurer, Montreal Tramways Co., Montreal, born there, March 4, 1876.

W. B. Elsworth, Manager, Marine Department, Imperial Oil Ltd., Toronto, born at Bayonne, N.J., March 3, 1869.

M. P. Fennell, Jr., Secretary-Treasurer and Comptroller, Montreal Harbor Commissioners, Montreal, born there, March 13, 1885.

W. R. Fitzmaurice, Superintendent, New Glasgow Division, Maritime District, Canadian National Rys., New Glasgow, N.S., born at Bedford, N.S., March 19, 1870.

Hon. G. P. Graham, M.P., acting Minister of Railways and Canals, and Minister of National Defence, Ottawa, Ont., born at Eganville, Ont., March 31, 1859.

H. C. Grout, General Superintendent, Ontario District, C.P.R., Toronto, born at Wausau, Wis., March 14, 1881.

J. Halstead, Division Freight Agent, C.P.R., Winnipeg, born at Bracebridge, Ont., March 2, 1877.

R. M. Hannaford, Assistant Chief Engineer, Montreal Tramways Co., Montreal, born there, March 22, 1865.

C. A. Hayes, Vice President, Traffic, Canadian National Rys., Toronto, born at West Springfield, Mass., March 10, 1865.

H. T. Hazen, Chief Engineer, Canadian

Northern Ry. lines east of Port Arthur, Ont., Toronto, born at Truro, N.S., March 14, 1870.

J. I. Hobson, Treasurer, Canada Steamship Lines, Montreal, born at Guelph, Ont., March 30, 1872.

N. J. Holden, President, The Holden Co., Montreal, born at Nobleton, Ont., March 22, 1866.

J. H. Holley, Travelling Passenger Agent, Ocean Traffic, C.P.R., Winnipeg, born at Holyoke, Mass., March 17, 1894.

A. R. Holtby, Master of Bridges and Buildings, Mountain Division, Grand Trunk Pacific Ry., Smithers, B.C., born at Rawdon, Que., March 23, 1859.

Frank Lee, Engineer, Maintenance of Way, Western Lines, C.P.R., Winnipeg, born at Chicago, Ill., March 7, 1873.

J. M. McKay, Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, born at Tiverton, Ont., March 13, 1868.

J. B. McLaren, General Auditor, G.T. R., Montreal, born at Perth, Ont., March 5, 1878.

M. Magiff, Superintendent of Car Service and Telegraphs, Central Vermont Ry., St. Albans, Vt., born at Planks Point, N.Y., March 24, 1852.

H. H. Melanson, Passenger Traffic Manager, Canadian National - Grand Trunk Pacific Rys. and Grand Trunk Pacific Coast Steamship Co., Toronto, born at Scadouc, N.B., March 9, 1872.

W. T. Moodie, Superintendent, Division 3, Central District, Canadian National Rys., Port Arthur, Ont., born at Glasgow, Scotland, March 10, 1882.

L. F. Muncey, Superintendent, Canadian National Rys., Kamloops, B.C., born at Kensington, P.E.I., March 15, 1876.

D. B. Niblock, Special Ticket Auditor, Canadian National Rys., Toronto, born at Point Edward, Ont., March 1, 1875.

Peter Paton, ex Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, now President, Mackenzie, Milne & Co., Ltd., Sarnia, Ont., born at New Lovell, Ont., March 13, 1869.

F. W. Peters, General Superintendent, British Columbia District, C.P.R., Vancouver, born at St. John, N.B., March 25, 1860.

J. W. Pugsley, Secretary, Department of Railways and Canals, Ottawa, Ont., born at Amherst, N.S., March 12, 1861.

E. A. Robert, President, Montreal Tramways Co., and Quebec Ry., Light, Heat & Power Co., and Honorary President, Canadian Electric Railway Association, Montreal, born at Beauharnois, Que., March 3, 1864.

L. G. Roblin, Master Mechanic, Prairie District, Canadian National Rys., Saskatoon, Sask., born in Prince Edward Island, March 24, 1864.

C. J. Smith, Manager and Secretary, Montreal Warehousing Company, Montreal, born at Hamilton, Ont., March 10, 1862.

G. L. Snelling, Secretary - Treasurer, Ottawa Electric Ry., Ottawa, Ont., born there, March 8, 1880.

W. Y. Soper, Vice President, Ottawa Electric Ry. Co., Ottawa, Ont., born at Oldtown, Me., March 9, 1854.

E. F. L. Sturdee, General Agent, Rail and Ocean Traffic, C.P.R., Seattle, Wash., born at St. John, N.B., March 29, 1876.

G. W. Vaux, General Agent, Passenger Department, Union Pacific Rd., Toronto, born at Montreal, March 21, 1866.

A. Watt, Assistant Master Mechanic, Canadian National-Grand Trunk Pacific Rys., Smithers, B.C., born at St. Louis,

Que., March 5, 1874.

A. T. Weldon, Assistant Freight Traffic Manager, Eastern Lines, Canadian National Rys., Montreal, born at Dorchester, N.B., March 6, 1876.

D. O. Wood, General Foreign Freight Agent, Canadian National-Grand Trunk Rys., Montreal, born at Kleinburg, Ont., March 16, 1864.

Railway Finance. Meetings. Etc.

Atlantic & Northwest Ry.—There has been deposited with the Secretary of State at Ottawa, an indenture appointing the Royal Trust Co., Montreal, as trustee under a mortgage, dated July 25, 1894, securing the bonds of the Atlantic & Northwest Ry., extending from Renfrew to Eganville, Ont., in succession to R. B. Angus and G. M. Clark, deceased. This railway is now a portion of the Canadian Pacific Ry.

Canadian Pacific Ry.—The directors on Feb. 12, declared dividends of 2% for the half year ended Dec. 31, 1922, on preference stock, and 2-1/2% for the quarter ended Dec. 31, 1922, on common stock, the latter being at the rate of 7% per annum from revenue, and 3% per annum from special income account.

Interprovincial & James Bay Ry.—There has been deposited with the Secretary of State at Ottawa a mortgage deed dated May 5, 1922, mortgaging the railway and property to the Royal Trust Co. to secure an issue of bonds authorized by the company's acts. There has also been deposited with the Secretary of State, a duplicate original of an agreement between the Interprovincial & James Bay Ry. Co. and the C.P.R. Co., dated May 4, 1922, and sanctioned by the Governor-in-Council, Dec. 15, 1922, leasing to the C.P.R., the Interprovincial & James Bay Ry. Co.'s undertaking for 99 years from July 1, 1922.

Timiskaming & Northern Ontario Ry.—Following are the results of operation for the fiscal year ended Oct. 31, 1922, compared with the year ended Oct. 31, 1921:—

	1921-1922	1920-1921
Gross Earnings	\$4,318,590.55	\$4,680,615.42
Operating Expenses	3,429,047.25	4,165,422.38
Net Earnings	712,505.23	181,778.89

Provisions for \$100,000 for repairs and replacements, and for \$50,000 for the employees' pension fund, was made out of the gross earnings for the year ended Oct. 31, 1922, before the net earnings were reckoned.

The Minneapolis, St. Paul & Sault Ste. Marie Ry., a C.P.R. subsidiary, reports a marked improvement in earnings for Dec., 1922, compared with the corresponding month of the past two or three years. December gross at \$4,204,891 compares with \$2,915,642 for Dec., 1921, and \$3,849,697 for 1920. The balance, after taxation, amounting to \$814,160, compared with a deficit of \$458,416 for Dec., 1921. Net operating income was \$817,671, compared with net operating deficit of \$518,719 for Dec., 1921. Similar improvement is shown in the earnings statement for the year of 1922, with gross at \$47,107,105, comparing with gross of \$42,745,440 for 1921. Balance, after taxes, \$7,595,372, compares with \$154,821 in 1921; \$763,346 for 1920, and \$5,780,041 for 1919. Net operating income was \$7,178,971, compared with a deficit of \$696,584 for 1921.

Canadian Pacific Railway Betterments, Etc., for 1923.

D. C. Coleman, Vice President, Western Lines, on returning recently to Winnipeg, from Montreal, where he had been in consultation with the President and other members of the executive said:—"The company's endeavor in 1923 will be to maintain the property generally at its present standard; to improve on that standard where possible, and to make due provision for the increased traffic resulting from a gradual return to prosperity, which has now passed the stage of prediction." He gave considerable information as to the various works to be undertaken, particulars of which are given below, supplemented by additional official information with which Canadian Railway and Marine World has been supplied:—

Eastern Lines.

Roadways.—Tile drainage works on all districts. Rock ballasting as follows:—25 miles on Three Rivers Subdivision, Quebec District; 150 miles on Trenton Division, between Smiths Falls and Toronto, Ontario District; and 25 miles on the Parry Sound and Cartier Subdivisions, Algoma District. This work will complete the rock ballasting between Montreal and Three Rivers; and will carry the work between Montreal and Toronto to Bowmanville, on the lake shore line. There will also be gravel ballasting on the New Brunswick, Ontario and Algoma Districts.

Bridges.—Replacement of 14 bridges on Lachute Subdivision, Quebec District, to permit of use of heaviest power. It is stated that this will complete the work of bridge reconstruction on this subdivision.

Extension of Passing Tracks on lines in the following districts.—New Brunswick district:—Lakeview, Enniskillen, Canterbury and Deer Lake. Quebec District:—Adamsville, Berthier Jct., and Three Rivers, Bedell, Petewawa, Colden and Meath. Algoma District:—Dalton, Gutelius, Pick and Otter.

Water Tanks.—New Brunswick District, 100,000 gall steel tank at McAdam Jct.; Quebec District, 60,000 gall steel tank at St. Johns. Ontario District, 60,000 gall steel tank at Guelph Jct; renewal of 40,000 gall. wooden tanks at Linwood and Elmira. Algoma District, 60,000 gall. steel tanks at Markstey, Nemegos, and Grasset.

Locomotive House.—Extension to 6 stalls of locomotive house, North Bay, Ont.

Turntable.—A 90 ft. turntable at MacTier, Ontario District.

Coaling Plants.—A 300-ton plant at Megantic, Quebec District, and a 150-ton one at Jackfish, Algoma District.

Additional mechanical and car department equipment will be provided at Hochelaga, Glen Yard, Place Viger, Smiths Falls, Toronto and North Bay.

An electric locker will be installed at Westmount, Que., to control traffic in and out of Glen yard, which will place all movement under the control of an operator in a tower.

Station Improvements.—At Westmount, Que. station a subway will be built so that passengers who disembark there from trains bound for Windsor St. terminal, may leave the station without having to wait for the standing train to draw out, and without having to cross the westbound track. This subway will permit of egress at the side of the present station. A further improvement

will be the construction of umbrella roofs over both platforms, these at present being exposed to the elements. At Montreal West an umbrella shelter will be built over the westbound platform, which is at present exposed. Extensions to station facilities will be built at East London, Maine, and at Mattawa, Hager, Cutler and Dean Lake, Ont.

Relaying Rails.—No decision has been arrived at as to what will be done in the way of rail renewals.

Western Lines.

Track Work. The usual allowance has been made for ballasting and for replacement of rails in the main track and crossing sidings by others of greater weight, to accommodate the heavier type of rolling stock.

Additional Tracks will be provided in Port Arthur yards to accommodate grain consigned to the terminal elevators at Current River. Additional tracks will also be laid to meet increased traffic needs, at the following points:—Manitoba District, Upsala, Dymont, Dryden, Rennie, Ont.; Weston shops, St. Claude, Burnside, Aincer, Murray Park, Springstein, Fannystella, and Tramp, Man. Saskatchewan District:—At Killaly, Frys, Falcon, Dingley, Regina Beach, and Lemberg. Alberta District:—At Coaldale, Coutts, Stirling, Magrath, Raymond, Glenbow, Bankhead, Eldon, Lake Louise, Red Deer, Lacombe, Ponoka, and Strathcona. British Columbia District:—At Mara, Ruby Creek and Yale.

The bridge reconstruction will consist mainly of rebuilding small pile trestles or replacing them with culverts and then filling them. Six bridges on the Shuswap Subdivision will be strengthened to permit operation by heavier power. Most of this work will be done by the company's forces.

Grade Revision.—To provide for the better movement of traffic certain grade revision will be done near Golden, B. C. to reduce the westbound gradient at Leancoil, on the Mountain Subdivision, British Columbia District. The present maximum gradient is 1.4 p. c., which will be reduced to 0.4 p. c., with a maximum curvature of 10 degrees. Surveys for this new piece of line are being made. It will start a few miles east of Leancoil and end immediately west of that point.

Coaling Plants.—The coaling plant at Fort William, which is being extended, will be completed during the year. Plants of the latest type will be built at the following points:—Manitoba District:—Replacement of present 90 ton plant at Ignace, Ont., by a 280 ton mechanical plant; replacement of present ramp docks at Kenora, Ont., by a 280-ton mechanical plant; replacement of present ramp docks at Winnipeg, by one 280-ton and one 100-ton mechanical plant. Saskatchewan District:—Replacement of present ramp plant at Estevan by a 280-ton mechanical plant. Alberta District:—Replacement of present ramp plant at Red Deer by a 280-ton mechanical plant.

Water Supply.—Improvements will be made to the water supply at Birtle and Newdale. Manitoba District:—Frys, Lynch, Wanola, Oxboro, Hirsch, Weyburn, and Sutherland. Saskatchewan District:—Coronation and Kirriemuir, Alberta District:—Steel water tanks will

be erected at Moose Jaw, Outlook and Parkbeg, Saskatchewan District.

Automatic signals for station protection are to be installed at MacGregor, Man., and Petain, B. C., the junction point with the Kettle Valley Ry. Through the Rocking Horse Canyon between Field and Golden, B. C., a system of continuous absolute permissive block signalling for single track, will be installed.

Shops and Locomotive Houses.—Extensive improvements will be made to the mechanical plants at Weston shops, Winnipeg, at Minnedosa and Reston, Manitoba District; Neudorf, Broadview, and Regina, Saskatchewan District; and Calgary and Alyth, Alberta District. These will consist mainly of changes to heating plants, such as renewing and covering steam pipes.

A 3-stall extension will be built to the locomotive house at Hardisty, Alberta District.

Stations will be built at Arden, Darlingford and Carnduff, Manitoba District; Congress, Saskatchewan District, and Lake Windermere, British Columbia District. Luncheon rooms will be built at Ignace, Ont., and Swift Current, Sask. Extensions will be made to station buildings and freight sheds at a number of places on the several districts.

Freight Sheds.—Two freight sheds will be built at Fort William, Ont., to replace those destroyed by fire in 1922. The new No. 3 freight shed will be 80 by 400 ft., one story high; built on pile foundations with concrete caps. The superstructure will be of timber, with corrugated galvanized iron sheeting; continuous sliding doors on both sides; tar and gravel roof; with concrete dock 400 ft. long on the Kaministiquia River. The new No. 5 freight sheds will be 60 by 800 ft., and will be 2 stories, on pile foundations with concrete pedestals. The superstructure will be of timber, with corrugated galvanized iron sheeting, with tar and gravel or other built up roof with concrete dock 800 ft. long, and passenger dock 60 ft. at the west end, on Kaministiquia River. The contract for the pile foundation has been let to Stuart McKenzie, Fort William; and that for the building and dock has been let to the Carter-Halls-Aldinger, Winnipeg.

Stockyards will be provided at Broomhill, Manitoba District; Frobisher, Ambassador, Revenue, Broadacres, and Wolfe, Saskatchewan District; Nightingale, Spring Coulee and Carstairs, Alberta District.

The icing facilities at Winnipeg and Brandon, Man., and Sutherland, Sask., will be changed and extended, to provide for the increased perishable traffic, particularly fruit.

Winnipeg Beach pier will be renewed and enlarged and other improvements will be made there.

Tunnel Lining.—Approximately about 3 miles of the double track Connaught tunnel have been relined but the work is not continuous. There are 2 miles of lining to be done, and this work will be continued during the year by the Sydney E. Junkins Co. At the loop tunnel, mile 4.8, Fernie Subdivision, British Columbia District; the present timber lining is to be renewed.

The new ocean pier at Vancouver, for which a contract has been let, will be rushed to completion.

The steam ferry boat for automobile traffic between Bellingham, Wash., and Sidney, B. C., full description of which has already been given in Canadian Railway and Marine World, and which is being built at Victoria will be completed at quickly as possible.

Victoria Terminal Office Building.—The construction of a terminal office building at Victoria, for the British Columbia Coast Steamship Service is under consideration and a decision will be made as soon as plans have been made and considered.

Branch Lines.—An announcement respecting branch line construction was deferred until March 1, to afford time for the consideration of all aspects of the situation. In preparing the programme, consideration will be given both to the opening up of new territory for settlement, and to the provision of facilities for producers who are located so far from existing lines that they find haulage costs to the railway stations a heavy burden. All data in connection with projected lines have been prepared and is undergoing exhaustive analysis.

Transportation Events of Twenty-five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for March, 1898.

March 1.—Railway and Shipping World, afterwards changed to Canadian Railway and Marine World, first published.

C. W. McMullen appointed City Freight Agent, C.P.R., Toronto.

C.P.R. gross earnings for 1897 were \$24,049,534.65, and net \$10,303,775.89.

C.P.R. completes installation of electric block signals between Windsor Street station and Montreal Jct.

J. E. Mulhfeld appointed General Foreman, Machinery & Car Department, Wabash Rd., St. Thomas, Ont.

Intercolonial Ry. General Freight and Passenger Agents' jurisdiction, extended over Prince Edward Island Ry., by A. H. Harris, General Traffic Manager.

The G.T.R. Jubilee Bridge, at Montreal, stated as having masonry of abutments, and 18 piers out of 24, completed, and one span of superstructure erected.

Canadian Pacific Navigation Co. arranged for shipment of goods direct to Dawson, Yukon, without touching at a U.S. port, by running from Port Simpson up the Stikine River.

Contract made between Dominion Government and Wm. Mackenzie and Donald D. Mann, of Toronto, for building railway from Stikine River to Teslin Lake, B.C. The Senate subsequently refused to sanction this.

Crownest Pass Branch, C.P.R., located from Lethbridge, Alta., to upper end of Kootenay Lake, 287 miles, and preliminary surveys made to Nelson, B.C. H. D. Lumsden was Chief Engineer, and M. J. Haney, Manager of Construction.

G.T.R. Appointments: M. C. Sturtevant, Car Service Agent, Montreal; L. J. Ferritor, Assistant Superintendent, London; A. S. Begg, Trainmaster, Stratford; H. E. Whittenberger, Trainmaster, Stratford; C. S. Cunningham, Trainmaster, London.

Canadian Government Rys. appointments: Jas. Hardwell, Division Freight Agent and Foreign Freight Agent, at Montreal; Owen Cameron, Freight Claims Agent, at Moncton, N.B.; H. H. Schaeffer,

Weighing Inspector, and J. F. Nelles, Assistant Weighing Inspector, at Moncton.

Wabash Rd. secures trackage rights over G.T.R. from Windsor, Ont., to Black Rock, N.Y., via Glencoe Jct., St. Thomas, Welland Jct., and Fort Erie; also from Welland Jct. via Allanburg Jct. to Suspension Bridge, the line to be called the Southern Division, and used jointly by both companies. G. C. Jones appointed Joint Superintendent at St. Thomas.

Canadian Government Railways Exempt From Sales Tax.

The act to amend the Special War Revenue Act, 1915, passed by the Dominion Parliament in 1922, as chap. 27, provides in sec. 13 and 14 for certain taxes to be paid on sales of certain goods, and sec. 15 provides that the taxes imposed by sec. 13 and 14 "shall apply to sales or imputations by His Majesty, whether in the right of His Majesty's Government of Canada, or His Majesty's Government of any province of Canada, for the purpose of resale." As it is hardly to be expected that the Dominion or Provincial Governments would buy or import goods for the purpose of resale, except probably intoxicating liquors, which are imported by certain provinces, the exception practically applies to all other Dominion or provincial government purchases.

In this connection, it was contended some little time ago that goods bought for the Canadian National Rys. should not be subject to sales tax, and the Customs and Excise Department, which had been appealed to, gave a ruling on Dec. 2, 1922, that purchases for the Canadian Government Rys. group, as indicated below, for their own use, and not for resale, are exempt from the payment of the sales tax, as from May 24, 1922. The group embraces the following lines: Intercolonial Railway of Canada, including New Brunswick & Prince Edward Island Ry., International Ry. of New Brunswick and Vale Railway. The following railways are also included in the group: Prince Edward Island Ry., Elgin & Havelock Ry., Caraquet and Gulf Shore Ry., Cape Breton Ry., Moncton & Buctouche Ry., St. Martins Ry., Salisbury & Albert Ry., York & Carleton Ry., Lotbiniere & Megantic Ry., Quebec & Saguenay Ry., National Transcontinental Ry., including Lake Superior Branch, Grand Trunk Pacific Ry., Hudson Bay Ry., and St. John & Quebec Ry.

In order to obtain exemption on purchases, orders for goods must be endorsed with a statement setting forth the name of the line for the use of which they are intended and that they are not for resale. The result of the foregoing is that the only portions of the Canadian National Rys. which pay the sales tax are Canadian Northern Rys., Grand Trunk Ry., and Grand Trunk Pacific Ry., except Lake Superior Branch.

We are officially advised that the Timiskaming & Northern Ontario Ry., owned by the Ontario Government, is also exempt from sales tax. The Pacific Great Eastern Ry., not being entirely owned by the British Columbia Government, is subject to the tax. We were further advised recently that the Customs & Excise Department had under consideration whether the hydro electric railways, operated by the Hydro Electric Power Commission of Ontario, should be exempt from sales tax.

Railway Earnings.

Canadian National Railways.

Following are total operating revenues, total operating expenses, and net operating revenues or deficits, for the Canadian Northern Ry. System (steam lines only), Grand Trunk Pacific Ry., and Canadian Government Rys., the last including the Intercolonial Ry., Prince Edward Island Ry., and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government:—

	Revenue	Expenses	Net deficits	
			1922	1921
Jan.	\$8,210,401	\$10,433,564	\$2,223,163	\$2,863,058
Feb.	7,650,743	10,026,572	2,375,829	2,986,998
March	9,418,100	10,397,547	979,447	2,532,959
April	7,804,222	9,153,738	1,349,516	2,636,639
May	9,678,965	9,726,020	47,055	2,554,540
June	8,235,603	10,199,592	1,963,989	2,595,257
July	8,877,776	10,510,778	1,633,002	1,334,569
Aug.	9,569,780	10,399,617	829,837	17,105
Sept.	11,726,459	11,123,750	*602,709	*467,685
Oct.	14,074,025	11,917,281	*2,156,744	*1,033,321
Nov.	12,737,758	11,983,938	*753,820	*720,515
Dec.	10,626,610	12,735,699	2,109,089	1,116,653

\$118,610,442	\$128,608,096	\$9,997,654	\$16,417,257
Dec'se	\$6,706,090	\$13,125,592	\$6,418,602

*Net revenue.

Approximate gross earnings for Jan., 1923, \$9,214,540; and for two weeks ended Feb. 14, \$3,637,071, against \$3,300,099 for January, and \$3,709,713 for two weeks ended Feb. 14, 1922.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1922, compared with those for 1921. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimaux & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross	Expenses	Net	Decreases
Jan.	\$11,337,975	\$10,854,498	\$483,477	\$157,948
Feb.	11,303,693	10,649,205	654,488	158,904
March	13,847,627	11,427,120	2,420,507	30,402
April	12,331,371	10,782,598	1,548,773	1,097,359
May	13,664,246	11,319,732	2,344,514	949,038
June	13,810,448	11,448,134	2,362,313	742,445
July	14,463,835	12,501,927	1,961,908	92,408
Aug.	15,918,050	12,971,613	2,946,437	*370,297
Sept.	18,149,528	13,563,595	4,585,933	*265,888
Oct.	23,061,548	15,258,803	7,802,745	*1,091,258
Nov.	21,421,078	15,695,285	5,725,793	*2,053,991
Dec.	17,365,640	13,900,835	3,464,805	*1,547,023

\$186,675,036	\$150,373,345	\$36,301,691	*\$2,099,951
Increase		\$2,099,951	
Dec'se	\$6,346,818	\$8,446,769	

*Increase.

Approximate gross earnings for Jan., 1923, \$12,848,000; and for two weeks ended Feb. 14, \$5,230,000; against \$11,066,000 for January, and \$5,379,000 for two weeks ended Feb. 1922.

Grand Trunk Railway.

Following are the total operating revenues, total operating expenses and net operating earnings, or deficits, for 1922 and 1921, of the G.T.R. Co. of Canada lines, including the Champlain & St. Lawrence Ry., United States & Canada Ry., Vermont & Provincial Line Ry., and the Black Rock terminal, in the U.S., but not including other lines in New England, nor lines west of St. Clair and Detroit Rivers.

	Revenue	Expenses	Net revenue	
			1922	1921
Jan.	\$5,354,317	\$4,984,953	\$369,364	*\$701,166
Feb.	5,667,487	4,700,985	966,502	81,874
March	6,118,314	5,153,028	965,286	577,680
April	4,901,367	4,596,666	304,701	382,272
May	5,800,329	5,189,756	610,572	324,185
June	6,503,646	5,519,124	984,523	712,028
July	7,164,085	5,709,652	1,454,433	916,225
Aug.	7,833,340	6,130,841	1,252,499	1,361,924
Sept.	7,046,496	6,191,109	855,387	127,897
Oct.	7,557,284	6,770,677	786,607	921,313
Nov.	7,481,578	6,924,264	557,314	182,896
Dec.	6,721,776	8,446,756	*1,724,982	841,750

\$77,700,019	\$70,317,813	\$7,382,206	\$5,678,739
Increase	\$841,987		\$1,703,467
Decrease		\$861,480	

*Deficit.

Approximate gross earnings for the system for Jan., 1923, \$8,613,348, and for two weeks ended Feb. 14, \$3,823,148; against \$7,339,605 for January, and \$3,847,404 for two weeks ended Feb. 14, 1922.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Abitibi Transportation & Navigation Co.—We are advised that the railway built by this company from the terminus of a Timiskaming & Northern Ontario Ry. branch at Iroquois Falls to Hughes, Ont., on the National Transcontinental Ry., is 15.76 miles long, and was opened for traffic Dec. 23, 1922. A spur line from mile 8, which extends for some 5 miles into the bush, is probably of a temporary character, and will be extended or moved from time to time as logging operations demand. (Jan., pg. 8.)

Alma & Jonquiere Ry.—The railway portion of the Quebec Development Co.'s water power development plans at the Grande Discharge of Lake St. John, Que., is being built under the Alma & Jonquiere Ry.'s charter. This company was incorporated by the Quebec Legislature in 1913, to build a railway from Lebarre or St. Gideon on the old Quebec & Lake St. John Ry., to Little Discharge, the Isle of Alma, the Grande Discharge, and one to Jonquiere, about 30 miles, with branch lines as required. Extensions of time for construction were granted in 1915, 1918 and 1921. The section of the line now under construction will extend from Hebertville station, midway between Lebarre and St. Gideon, to Ile Maligie. The railway will be of standard gauge, with a maximum gradient of $1\frac{1}{2}\%$, and a maximum curvature of 8 degrees. We are officially advised that a contract has been let to Gagnon, Gagnon & Gagne for the excavations, and to the W. T. Bishop Co., for the masonry work. F. H. Cothran, St. Joseph d'Alma, is Resident Manager.

The plans in connection with the power development works are stated to include the erection of a dam across the Little Discharge of Lake St. John, so as to divert the entire flow of water through the Grand Discharge. The railway will be carried across the Little Discharge to Isle d'Alma, and across to Ile Maligne in the Grand Discharge. The first power development plant will be located there, and is estimated to produce 350,000 h. p. The second power development plant will be some miles lower down, near the mouth of the Shipshaw River. It was reported recently that 500 men were engaged on the works. (Feb. 1921, pg. 82. See also Quebec Development Co., Jan. pg. 9.)

Burrard Inlet Tunnel & Bridge Co.—Bylaws were submitted to a vote of the ratepayers of the City of North Vancouver, and North Vancouver Municipal District, Dec. 20, 1922, in connection with the proposal to build a bridge over the Second Narrows of Burrard Inlet, at North Vancouver. Four separate bylaws were submitted in the city, these being necessary for the purpose of carrying out the proposal, and the present proposals with former ones. The first bylaw authorized the city to enter into an agreement with the bridge company, to guarantee debentures; the second provided for the purchase of shares in the company; the third authorized the issue of \$120,222 of city debentures, for purchasing shares, and the fourth authorized the issue of \$100,000 of city debentures for purchasing shares. Only one bylaw was necessary in the case of the North Vancouver Municipal District, viz., authorizing the guarantee of debentures. The authority to purchase shares is contained in the Municipal Act governing the division of the district and

the incorporation of West Vancouver. The bylaws are reported to have been carried practically unanimously, the total vote in the two municipalities, it is stated, being 2,441 in favor, and 83 against.

The tentative construction contract entered into between the company and the Northern Construction Co. provides for the erection of the bridge for \$1,250,000, payable in city, district and bridge company bonds at par. The bridge company is to put up \$630,000 of bonds guaranteed by North Vancouver City and District, and the three municipalities of Vancouver and North Vancouver Cities and North Vancouver District are to provide the balance.

Sketch plans of the proposed bridge have been sent to Ottawa for approval by the Government. It is stated that the foundation work may be widened so that additional tracks may be carried at some future date as traffic develops, and that if this is done, the extra cost will be borne by the Dominion Government.

The officers of the company are Reeve Loutet, North Vancouver District, President; Mayor Donaghy, North Vancouver City, Vice President, and P. Ward, Assistant Secretary. (Jan. pg. 8.)

Calgary and Southwestern Ry. Co.—The Alberta Legislature has been asked to grant a two years extension of time within which the Calgary and Southwestern Ry. Co. may build its projected railway from Calgary to Sheep Creek coal fields district. P. Burns, Calgary, Alta., is the principle promoter. (May 1921, pg. 241.)

Canadian-American Collieries Limited, a company incorporated under the Alberta Companies Act, with office at Edmonton, has applied to the Alberta Legislature, for authority to build a standard gauge railway from its collieries in Sec. 20, Tp. 52, Range 4, west of 4th Meridian, to connect with the Canadian National Rys. at mile 835, from Winnipeg; and to enter into an agreement with the C.N.R. or any other railway for the operation of the line. It is stated that the colliery is just south of Lake Waubamun, and that the junction with the C.N.R. would be near Duffield, on the Grand Trunk Pacific Ry., 37 miles westerly of Edmonton.

Canadian Niagara Bridge Co.—The Dominion Parliament is to be asked to extend the time for the construction of the projected railway and general traffic bridge across the Niagara River, from not less than two miles upstream from Chippawa Creek and Fort Erie, Welland County, Ont., to the opposite side of the Niagara River, New York State. (Aug., 1921, pg. 419.)

Canadian Terminal Ry.—We are officially advised that the project referred to in the first paragraph under Canadian Pacific Ry. Construction, etc., in Canadian Railway and Marine World for January, pg. 24, is for the construction of a railway to link up the four harbors of Blacks, Deadman's, Beaver and L'Etang with the C.P.R., and incidentally give transportation and freight facilities to the various islands along the Charlotte County coast of New Brunswick. The Canadian Terminal Co. was incorporated by the New Brunswick Legislature in 1907, and was given extensions of time on subsequent occasions. In 1915, it was reported that surveys had

been made for the line over a route from Pennfold, on the C.P.R., to Beaver Harbour, L'Etang and Blacks Harbour, 8 miles, and it was stated that construction would not be expensive. The promoters had an interview with the New Brunswick Government in 1921, and received an assurance of support whenever affairs should reach the stage when construction would be possible. Lewis Connors, Blacks Harbor, N.B., is the principal promoter. (Feb., 1915, pg. 49, and Jan., 1922, pg. 22.)

Edmonton, Dunvegan and British Columbia Ry.—Central Canada Ry.—The C. P. R. Co. operates these railways under an agreement with the Alberta Government, to which J. D. McArthur and his associates are parties, the Union Bank being interested as a creditor. The Alberta Government provides funds for the extension of the lines and in 1921, an extension of 25 miles was built from the Peace River to Berwin. In 1922, an appropriation was made for a further extension of 12 or 15 miles from Berwin, and for a 12 mile extension of the branch line now ending at Grande Prairie. The Union Bank intervened, raising some difficulties in connection with the security for its claims, and no construction was put in hand. Negotiations have been carried on between the Government and the Union Bank, and we are advised that these have not been completed. Should a satisfactory arrangement be arrived at the Alberta Legislature will have to authorize any further construction. When Grant Hall, Vice President, Montreal, and D. C. Coleman, Vice President Western Lines, Winnipeg, were in Edmonton on Feb. 5, they had a conference with the Government, and a further conference was expected to take place later, after which an announcement as to whether construction will be gone on with will probably be made.

The lines which the settlers desire to have built are the completion of the Edmonton, Dunvegan and British Columbia Ry., from Spiri River to the Alberta-British Columbia boundary, 50 miles to which point grading was completed in 1916; the construction of a 45 mile extension of the Grande Prairie Branch; and a 35 mile extension of the Central Canada Ry., from Berwin westward. (May, 1922, pg. 236.)

Esquimalt & Nanaimo Ry.—The Mayor of Victoria, B.C., in his report for 1922, stated that the outstanding feature of the engineering department was the completion of one unit of the Johnson St. bridge. The work had been done in a very satisfactory manner. The total cost of the bridge to the city, when the bridge is fully completed, will be \$1,130,130. The City Engineer expected that the further work to be done by the city in connection with the railway part of the work would be completed Feb. 28, and that the Canadian Bridge Co. would then start the erection of the superstructure of the railway span.

D. C. Coleman, President, on returning to Winnipeg, at the end of January, after conferring with the President and other members of the C. P. R. executive said that the programme of bridge replacement on the E. and N. R. will be continued, that additional tracks will be furnished to provide for the constantly growing timber traffic and that provision will be made for improvements to passenger train equipment.

Mr. Coleman visited Vancouver Island with Grant Hall, Vice President C.P.R., shortly afterward and is reported to have stated there that the relaying of the line with heavier steel, 12 miles of which were put in during 1922, will be continued; that additional trackage will be provided at Qualicum, Hayward Jct., and Cowichan Lake; that the bridge over the Englishman River will be replaced that five other bridge structures will be rebuilt; that new water tanks will be built at Duncans and Nanoose Bay; that considerable new machinery will be installed in the Victoria shops, and that experiments will be made on one train with a new storage system of electric light, which, if successful, will be adopted for all trains. Certain additional work, including a start on terminal rearrangements at Victoria is under consideration and a decision as to what will be done will be reached later on. (Jan. pg. 8.)

The Essex Terminal Ry. is applying to the Dominion Parliament for an extension of time for completing the line from the Detroit River, near Ojibway, to Pelton, Ont., authorized to be built by the statutes of 1917, chap. 51. (May, 1921, pg. 241.)

Fecunis Limited, which was incorporated by the Ontario Legislature in 1921, to carry on an exploration and mining business and to build a tramway, to be operated by steam or electric power, from the C.P.R. in Dowling Tp., Sudbury District, to the Canadian National Rys. in Wisner Tp. has applied to the Ontario Legislature for an extension of time for construction. Young and McEvoy, Toronto, are the solicitors. (June 1921, pg. 305.)

Kettle Valley Ry.—We are officially advised that track laying has been completed on the southerly section of the line from Penticton to the B.C. Government Experimental Farm at Olivia, and that it will be completed and put in operation this year. This section runs from Okanagan Falls, at the south end of Dog Lake, to the farm, 16.6 miles. The first section, from Penticton to the north end of Dog Lake, 2.4 miles, was completed in 1921. A car-barge is used to connect the two sections. Surveys are, we are advised, being made for the extension of the line from the Experimental Farm to the International Boundary, 12.3 miles but it is not intended to do any construction on it at present.

The betterments proposed to be done this year consist of improvements to the facilities at Princeton and Penticton, and the reconstruction of the following bridges:—Mile, 28.4; Merritt Subdivision, the present 150 ft. Howe truss bridge will be replaced by steel spans, the dimensions of which have not been decided; mile 21.4, Merritt Subdivision, the present 150 ft. Howe truss span will be replaced by one 106 ft. pony through span and one 50 ft. half deck plate girder span; mile 30.8, Merritt Subdivision the present 100 ft. Howe truss span will be replaced by a 106 ft. steel span; mile 39, Merritt Subdivision, the present 84 ft. Howe truss span will be replaced by an 84 ft. half deck plate girder span, removed from another place, mile 33.7, the present 100 ft. Howe truss span will be replaced by a 106 ft. second hand steel span. (Aug. 1922, pg. 409.)

Manitoulin Island.—A large body of residents on Manitoulin Island, Lake Huron, have signed a petition to the Ontario Government asking for the construction of a colonization railway from

Little Current to some central point on the island. The petition is reported to have been approved of by the Sault Ste. Marie City Council and Board of Trade. Little Current is the second most populous place on the island and is the terminus of the Algoma Eastern Ry.

Michigan Central Rd.—A letter from the company's Toronto solicitors was read at a St. Thomas City Council meeting, Feb. 6, asking for the city's approval of plans for yard extension there and stating that the company desired to proceed with the work in the spring. The plans for the extension have already been submitted to the Board of Railway Commissioners, and have been discussed by Yarmouth Tp. Council, which objects to the closing of Park Ave., and desires to have a general traffic bridge erected instead of the foot bridge offered by the company. The matter was referred by the St. Thomas City Council to the finance committee. (Jan. pg. 8.)

The Montreal Central Terminal Co. will apply to the Dominion Parliament this session for a revival and extension of the powers granted by its act of incorporation. The company was incorporated as the Montreal Bridge Co. in 1890, to build a bridge across, or a tunnel, under the St. Lawrence River, from Montreal to the south shore in Longueuil. In 1907, the title was changed to Montreal Bridge and Terminal Co.; in 1909 the title was further changed to Montreal Terminal Ry. Co., and in 1912, an extension of time for construction was granted and the title changed to Montreal Central Terminal Co. In 1917 it was granted a five year extension of time for construction, and in 1921, a further application for an extension of time fell through. Application was made to the Board of Railway Commissioners, July 6, 1921, for approval of a route map showing the general location of the proposed tunnel and railway. The C.P.R., the G.T.R., the Montreal City Council, and the Montreal Harbor Commission opposed the application, which was refused. (Aug., 1921, pg. 420.)

The Montreal, Joliette and Transcontinental Junction Ry. Co. has asked the Dominion Parliament to extend the time for the construction of its projected railway from Montreal to a junction with the National Transcontinental Ry. at Parent, Que. G. D. Kelly, Ottawa, is solicitor for applicants.

Pacific Great Eastern Ry.—Nothing definite was settled as to future construction by the British Columbia Legislature prior to prorogation, but it is said that Government supporters expressed themselves as being in favor of the completion of the line into Prince George. The Minister and the Deputy Minister of Railways for British Columbia, and T. Kilpatrick, the newly appointed General Manager, completed a trip of inspection over the line from Squamish to Quesnel, Feb. 3. The Minister is reported to have stated at Vancouver, that as soon as possible in the spring an extensive survey of the resources and possibilities for business of the country between Quesnel and Fort George will be made, and if the reports justify it, the Government will proceed with the completion of the line between these points. (Aug. 1922, pg. 410.)

Quebec Central Ry.—The Dominion Parliament is to be asked to extend the time for construction of the line authorized in 1906, to be known as the Quebec Central Ry. Chaudiere Extension, by diverting and rebuilding the portion of the present line from Beauce Jct. to

Beauceville, and building a line from Beauceville to the Famine River, and along that river to Langeville; thence along the St. John River watershed, through the southern portions of Beauce, Dorchester, Bellechasse, Montmagny, L'Islet, Kamouraska and Temiscouata counties to connect with the Temiscouata Ry. near Cabano, Que., about 175 miles. An extension of time is also to be asked for the construction of a line from Leeds to a connection with the branch from Scotts, at near St. Lambert, Levis County, about 35 miles. (Oct., 1922, pg. 516.)

Quebec, Montreal & Southern Ry.—The station building at Contrecoeur, Que., was burnt recently, but the freight shed was saved.

Reid Newfoundland Co.'s Ry.—We are officially advised, in reference to the reported building of a branch line from Junction Brook to Grand Lake station, that it is really a diversion of the present main line, rendered necessary by the putting in of a permanent dam at Grand Lake. This dam will raise the level of the lake and flood the present main line track. (Jan., pg. 8.)

Rouge River Ry.—The Quebec Legislature has extended for one year the time within which the company may build the part of its projected railway from Huberdeau, to the Canadian-China Clay mines, and from its immediate prolongation to St. Remi d'Amherst, Labelle county.

Rutland & Noyan Ry.—The Dominion Parliament is to be asked to authorize the company to lease its railway and undertaking to the Rutland Rd. Co., or any corporate successor thereof, and to authorize the lessee to operate the line. The Rutland & Noyan Ry. is 3.39 miles long, and connects the Rutland Ry. at the International Boundary with the G.T.R. at Rouses Point, N.Y.

Sydney and Louisburg Ry.—A press report stated that the station at Victoria Jct., N. S., is to be moved several hundred yards from its present location, in order to meet the requirements of the increasing passenger traffic between Sydney, Glace Bay and New Waterford. (Jan. pg. 9.)

Timiskaming & Northern Ontario Ry.—The contract for the construction of the extension from Cochrane to opposite New Post on the Abitibi River, 70 miles, which was let in Jan., 1922, to Grant Smith & Co. and McDonnell, Ltd., called for the completion of the line from Cochrane to the second crossing of the Abitibi River by Dec. 31, 1922. We are officially advised that track was laid to the second crossing, 44.40 miles, before Dec. 31. The Lieut.-Governor's speech at the opening of the Ontario Legislature recently referred to the Act mentioned above, and said that it is the Commission's intention to have the work in hand on this extension completed during this year. The Premier, in answer to a question in the Legislature on Feb. 7, stated that the general contractors for the extension, Grant Smith and Co. and MacDonald Ltd., had let subcontracts to McDonnell Ltd., had let subcontracts to Nochem and Mannix, Calgary, Alta., C. nan and Egan, Montreal.

With reference to the proposed extension of the line from near New Post, on the Abitibi River, to James Bay, the Lieut.-Governor in his speech at the opening of the Legislature said: "A survey is being carried on with a view to extending the railway to a suitable port on tidal waters, which will open

up a vast undeveloped area, and give the province a new outlet." We are officially advised that two engineering parties are working, from the end of the extension now under construction, toward Moose Factory. The parties are in charge of A. A. Fraser and J. A. Toy, assistant locating engineers and are working under the direction of W. R. Maner, Chief Location Engineer.

We are officially advised that a member of the Commission's engineering staff spent some days in the Kirkland Lake mining area recently in connection with a projected branch from Swastika, which a press report states will extend to the Argonaut mine. No instrumental survey for this branch, has been made. (Jan. pg. 9.)

The Vancouver, Victoria and Eastern Ry. and Navigation Co. has been authorized by the Board of Railway Commissioners to appeal against the Board's order of Oct. 15, 1922, granting the Vancouver Harbor Commissioners the right to operate trains over the V., V. and E. Ry. tracks at Burrard Inlet, Vancouver.

Victoria Lumber & Manufacturing Co.—We are officially advised that this company, which has its headquarters at Chemainus, B.C., is building 26 miles of logging railways up the Chemainus River; 10 miles from Oyster Bay to Haslam Creek, and has located about 8 miles from branch lines at Robertson River, Cowichan Lake. The lines will be built to standard gauge, and the track will be laid with 50 or 60 lb. rails. On Dec. 31, 1922, grading on the Haslam Creek line had been completed and 3 miles of track had been laid. On the Chemainus River line, 5 miles of grading had been completed, and 3 miles of track laid. When the construction of the lines mentioned above is completed, if conditions are favorable, the company can put in the necessary equipment to log 1,000,000 ft. of timber a day. (Jan., pg. 9.)

Canadian Railway Club Dinner and Meeting.

The Canadian Railway Club dinner was held at the Windsor Hotel, Montreal, Jan. 27, the President, G. M. Wilson, Superintendent Motive Power, G. T. R., being in the chair. The principal guest, Hon. Charles Stewart, Minister of the Interior, in reply to the toast of the railways, said that he had started his career as an employee of the old Nickel Plate Rd. The Government is determined to give Sir Henry Thornton a fair chance to make good as President of the Canadian National Rys., and to give public ownership of these lines a fair show. He had every hope that Sir Henry would make the railways a success, and if he did it would mean not only the success of the national railways but also of the C. P. R. He felt vitally interested in the success of both lines and would do everything he could to work to that end. In order to increase the flow of immigrants to Canada he was trying to co-ordinate the best efforts of all the transportation companies not only to bring people to Canada, but to keep them in the country. He was astonished to find that these railways required more money to finance them than the Dominion Government spent during the war.

At the club's monthly meeting in Montreal, Feb. 13, W. S. Cookson, General Passenger Agent, G. T. R. dealt with the preparation of railway tickets, their printing and handling.

British Columbia and Alberta's Appeal of Freight Rates Decision.

As stated in Canadian Railway and Marine World for February, pg. 51, the Province of British Columbia gave notice of appeal to the Dominion Government from that part of the Board of Railway Commissioners' decision in the equalization of rates case which affected the western rate scale, which was given in full in Canadian Railway and Marine World for Aug. 1922, pg. 398. We also stated in our February issue that the Province of Alberta had become convinced that its interests were identical with those of B. C. in this matter, and that its Government was taking action to join the B. C. Government in its appeal. The Alberta Legislature on Feb. 5, after a debate lasting intermittently from Jan. 31, passed a resolution reading in part as follows: "That this Legislature approves and endorses the action already taken by the Government in joining with the British Columbia Government in its petition to the Governor General in council by way of appeal from the Board of Railway Commissioners for Canada, the petition having for its purpose removal of the present differential in freight tolls on transportation of commodities eastward and the tolls for transportation on the same or similar commodities westward."

Previous to this resolution being passed, A. Chard, freight rate and tariff officer for the Alberta Government, had left for Ottawa to join Premier Oliver of British Columbia and G. G. McGeer, counsel for the latter province, in presenting the appeal to the cabinet, and on Feb. 3, a preliminary presentation of the western provinces' case was made before Premier King, Finance Minister Fielding, and seven other cabinet members. In his argument for removal of the differential as between mountain and prairie rates, Premier Oliver traced the history of the case from as far back as 1869, and claimed that B. C. was entitled to as favorable rates as any other part of Canada. He met the argument as to higher operating costs in the mountains by stating that the Dominion Government built the C. P. R. from Port Moody to Kamloops, and that the value of the land grants given the C. P. R. by B. C. more than offset high operating costs in the mountains. He also stated that the C. P. R. abandoned the Yellowhead Pass, through which it had contracted to build and which would have given more favorable grades and lower operating costs, in favor of the Kicking Horse Pass, and claimed that the province had guaranteed Canadian Northern Ry. bonds for the express purpose of getting control of rates in the province, but had been legislated out of control of the rates. Mr. McGeer replied to questions put by cabinet members, and in answer to his request that a general hearing be held on the matter in the near future, received assurance that such would be done.

Following this preliminary hearing, Messrs. McGeer and Chard had a conference with Sir Henry Thornton, and C. A. Hayes, President and Traffic Vice President, Canadian National Rys., and are reported as having expressed great satisfaction with the progress they and Premier Oliver were making in their fight to remove what they allege to be undue and unjust discrimination against both British Columbia and the Alberta grain shippers.

Two notices of motion were placed on

order paper on Feb. 15, in the House of Commons in connection with these rate matters, one by J. A. Clark, Conservative, Burrard, B. C., and the other by D. M. Kennedy, Progressive, Edmonton West, Alta. Mr. Clarke's resolution was as follows: "That in the opinion of this House, railway rates westward from the prairie provinces should be reduced to an equality with railway rates eastward from said provinces for similar goods and distances." Mr. Kennedy's resolution after a lengthy preamble was in part as follows: "That action should be taken by the Government, with a view to rescinding and varying the Board of Railway Commissioners' order to the extent that the rates charged in Alberta and British Columbia shall be no higher than for the same or similar distances elsewhere in Canada, and so that the excessive charges now being exacted by the railway companies under the Mountain Scale may be removed, unless the said differences are justified upon the ground of actual water competition. That the Government should establish a scale of rates in western Canada that shall provide for the movement of grain and grain products from points in prairie territory to Pacific coast and British Columbia points upon the same basis as fixed in the Crows Nest Act, for movement of grain and grain products east-bound. And that the Government should establish a scale of rates in western Canada that shall provide for the movement of all commodities from Pacific coast and British Columbia points to prairie points, for the same or similar distances, on the same basis that the said commodities are moved for the same or similar distances from eastern Canadian points to points in prairie territory."

U.S. Rates on Grain to Lake Ports for Forwarding.—Tariffs were filed with the U.S. Interstate Commerce Commission, to be effective Jan. 12, by the Chicago, St. Paul, Minneapolis & Omaha Ry., Great Northern Ry., Minneapolis, St. Paul & Sault Ste. Marie Ry. and Northern Pacific Ry., for carrying grain and flaxseed from St. Paul and Minneapolis, and adjacent territory, to Lake Superior ports for ship movement beyond. The schedules made certain reductions in existing rates. The Commission, on Jan. 11, ordered that the schedules in the tariffs filed be inoperative until May 12, that a hearing be held in Chicago on Feb. 10, and that the tariff schedules in force prior to the issuance of the new tariffs remain in application until the period of suspension or any extension thereof expires, and until the enquiry has been concluded, unless authority to change them be granted specially by the Commission.

Railway Accidents Throughout Canada.—The total number of accidents on railways throughout Canada, reported to the Board of Railway Commissioners, for Nov. and Dec., 1922, was 620, in which 2 passengers, 16 employees and 18 others were killed, and 90 passengers, 526 employees, and 84 others were injured. Included in "others" are 9 persons killed and 46 injured in 43 highway crossing accidents, the crossings being unprotected in 36 cases, and protected in 3 cases by gates, 1 by a watchman, and 1 by a flagman. Automobiles and trucks were concerned in 24 of the accidents, other vehicles in 10, and pedestrians in 8.

Mainly About Railway People Throughout Canada.

W. R. Baker, C. V. O., ex-Secretary, C. P. R., and Mrs. Baker, expect to leave Montreal in March for Europe.

E. W. Beatty, K. C.,—President, C. P. R., has been elected a governor of the Royal Victoria Hospital, Montreal, vice the late R. B. Angus, who was also a C. P. R. director.

G. N. Beatty, who died at Toronto, Jan. 29, aged 43, was a brother of E. W. Beatty, K.C., President, C.P.R., and Dr. H. A. Beatty, Chief Medical Officer, Eastern Lines, C.P.R., Toronto.

Arthur Bernard Buckworth, who has been appointed Deputy Minister of Railways for British Columbia, Victoria, was born at Birmingham, Eng., Mar. 2, 1876, entered transportation service in 1896, and was to 1897, engaged in loading freight cars for C.P.R. at Vancouver, B. C.; 1898 to 1906, ticket agent, C.P.R., and land agent, Great Northern Ry., Ymir, B.C.; 1906 to 1912, engaged in timber contracting for railways; 1912 to 1918, representative at Vancouver, for E. R. C. Clarkson & Sons, Toronto, trustees and liquidators; 1918 to Aug. 1, 1920, Manager, under E. R. C. Clarkson & Sons, Spokane & British Columbia Ry., Vancouver, B.C.; Aug. 1, 1920, to Jan., 1923, General Manager, Pacific Great Eastern Ry., Vancouver, B.C. He was presented with an engraved gold fountain pen, pencil and penknife, by the railway staff at Vancouver, Feb. 5.

Fred J. Buller who has been appointed Treasurer, Central Region, Canadian National Rys., Toronto, was born at Lindsay, Ont., Jan. 30, 1875 and entered transportation service in Sept. 1893, since when he has been, to Oct. 1896, messenger, Canadian Express Co.; Nov. 1896, to June 1899, clerk, same company, Toronto; June, 1899, to July, 1901, clerk and relieving cashier, Dominion Express Co., Winnipeg; July 1901, to Dec. 1902, clerk and timekeeper, General Superintendent's office, Canadian Northern Ry., Winnipeg; Dec. 1902, to Nov. 1906, cashier, same road, Toronto; Nov. 1906, to Jan. 1919, Cashier and Paymaster, same road, Toronto; Jan. to Oct., 1919, Local Treasurer, Eastern Lines, Canadian Northern Ry., Toronto; Oct. 1919 to Jan. 1920, Vice President, Canadian Steel-Tire and Wheel Co., Montreal; Jan. 1920 to Feb. 19, 1923, Assistant Treasurer, Canadian Northern Ry. System, Toronto.

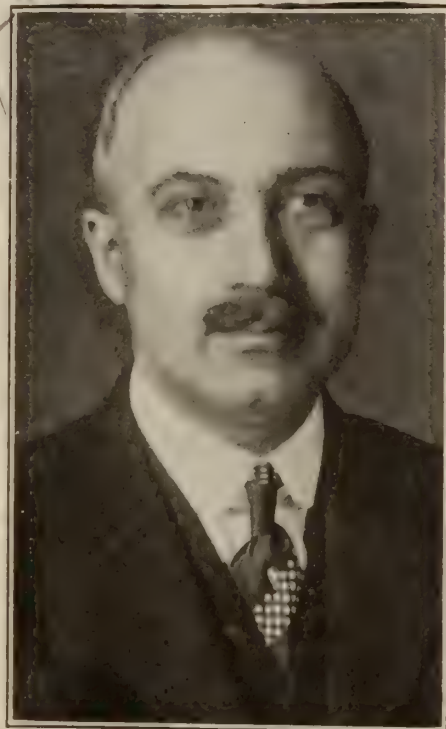
J. S. Byrom, was referred to in Canadian Railway and Marine World for February in "Birthdays of Transportation Men" as General Superintendent, Sleeping, Dining and Parlor Car and New Service, Eastern Lines, C. P. R. Montreal, which was a mistake, as that position was abolished Dec. 31, 1917 since when he has been with the C. P. R. British Columbia Coast Steamship Service at Vancouver.

F. S. Cahill, Pontiac, Que., has been re-elected Chairman of the House of Commons' railways, canals and telegraph lines committee.

Mrs. Cantlie, wife of Lt. Col. G. S. Cantlie, D.S.O., formerly General Superintendent of Car Service, C.P.R., died at Montreal, Feb. 3, following a short illness and an operation.

William Craig Chisholm, K. C., who has been appointed Assistant General Counsel, Canadian National Rys., Montreal, was born at Port Hope, Ont., Aug. 20, 1864, and educated at Port Hope High

School, and Toronto University, graduating with the degree of B.A., in 1885. He was admitted to the Ontario bar in 1888, and appointed K.C., in 1908. From



F. J. Buller,
Treasurer, Central Region, Canadian National
Railways.



H. G. Foreman,
Assistant General Treasurer, Canadian National
Railways.

1891 to June 1905 he was Assistant City Solicitor for Toronto, June 1905 to Oct. 11, 1909, City Solicitor there; Oct. 11, 1909 to July 1913, in private practice; July 1913 to Feb. 19, 1923, General Solicitor,

and from Aug. 1922, head of Legal Department, G. T. R., Montreal.

Charles Durno Cowie, who has been appointed Assistant to Vice President, of Finance, Canadian National Railways, Montreal, was born at Inch, Aberdeenshire, Scotland, July 25, 1887. From Jan. 13, 1904 to Jan. 13, 1908, he was clerk in the Town and County Bank, Aberdeen; Feb. 10, 1908 to Jan. 8, 1910, ledger keeper, Home Bank, Toronto; Jan. 8, to May 23, 1910, accountant, Home Bank, Sandwich, Ont., May 26, 1910 to May 1, 1911, clerk, Mackenzie, Mann and Co. Ltd., Toronto; May 1, 1911 to July 1, 1916, cashier, same company, Toronto; July 1916 to July 1917, on special work in connection with the royal commission appointed to make a valuation of, and enquire into the affairs of, the Canadian Northern Ry. Co.; July 1917 to Sept. 1918, on special work in connection with the Canadian Northern Ry. arbitration; Sept. 1918 to Feb. 19, 1923, Assistant to Vice President, Finance and Accounting, Canadian National Rys., Toronto.

Senator N. Curry, Chairman of the Board, Canadian Car & Foundry Co., and Mrs. Curry; Sir Arthur Harris, formerly of the C. P. R. Freight Department and Lady Harris, all of Montreal were among the guests at a garden party given at Hamilton, Bermuda, lately, by the Governor and Lady Asser.

Col. J. S. Dennis, C.M.G., Chief Commissioner of Colonization & Development, C.P.R., Montreal, and Mrs. Dennis, sailed from St. John, N.B., Jan. 26, to visit several European countries, expecting to return in March. Col. Dennis was confined to bed in London for some little time after his arrival there.

Gustave F. Diekroeger who has been appointed District Freight Agent, C.P.R., St. Louis, Mo., was born there, Sept. 11, 1871, and entered C. P. R. service Feb. 14, 1897, since when he has been, to May 15, 1898, stenographer; May 15, 1898 to Sept. 1, 1901, Contracting Freight Agent; Sept. 1, 1901 to June 1907, Travelling Freight Agent; Sept. 1, 1907 to May 1, 1922, Westbound Agent; May 1, 1922 to Feb. 1, 1923, acting District Freight Agent, all at St. Louis, Mo.

Anthony C. Egan who has been appointed Comptroller, Western Region, Canadian National Rys., Winnipeg, was born there Oct. 6, 1883, and entered railway service in 1901, since when he has been, to 1904, accountant, C. P. R., Winnipeg; 1904 to 1909, in accounting department, Canadian Northern Ry., Winnipeg; 1909 to 1911, Chief Travelling Auditor, same road, Winnipeg; 1911 to Dec. 31, 1918, Auditor of Agencies, same road, Winnipeg; Jan. 1 to Jan. 13, 1919, Auditor of Agencies, same road, Toronto; Jan. 13, 1919, to Dec. 1, 1920, Assistant Comptroller, Canadian Northern Ry., Toronto; Dec. 1, 1920 to Feb. 19, 1923, General Auditor, Canadian Northern Ry. System, and Grand Trunk Pacific Ry., Toronto.

John M. Egan, who was the first General Superintendent of the C. P. R., at Winnipeg, having been appointed Jan. 1, 1882, by Wm. C. Van Horne, when the latter became General Manager, celebrated his golden wedding at Amboy, Ill., Jan. 20. He was born at Springfield, Mass., March 26, 1848, and entered railway service in May 1863, since when he has been, to Apr. 1867, machinist apprentice, Illinois Central

Rd., Amboy, Ill.; Apr. 1867 to Apr. 1868, clerk in freight office, and from July to Dec. 31, 1869, clerk in engineer's office, same road; from Jan. 1, 1870 to Jan. 1877, consecutively, clerk, engineer's department, assistant engineer, division engineer, and chief engineer's assistant, Northern Missouri Rd.; Jan. 1877 to Dec. 1881, Chief Engineer, Assistant Superintendent, Superintendent, Southern Minnesota Rd.; Jan. 1, 1882 to Sept. 1, 1886, General Superintendent, C. P. R., Winnipeg; Sept. 1, 1886 to Feb. 1888, General Superintendent, St. Paul, Minneapolis and Manitoba Ry.; Feb. 1888 to Sept. 9, 1890, General Manager, Chicago, St. Paul and Kansas City Ry.; Sept. 9, 1890 to May 1, 1894, President and General Manager, same road; March to Nov. 1896, Assistant to President, Lake Superior and Ishpeming Ry., Marquette, Mich.; Nov. 1896 to Apr. 1900, Vice President, Central of Georgia Ry., and Ocean Steamship Co.; Apr. 1900 to 1904, on his retirement, President, same company.

Harry Gray Foreman, who has been appointed Assistant Treasurer, Canadian National Rys., Montreal, was born at Toronto, Sept. 2, 1882, and entered railway service Sept. 15, 1898, since when he has been, to June 15, 1902, clerk, General Auditor's office, Lake Erie & Detroit River Ry., Walkerville, Ont.; June 15, 1902, to Feb. 15, 1903, clerk, Accountant's office, Engineering Department, Pere Marquette Rd., Detroit, Mich.; Feb. 15, 1903, to June 15, 1909, clerk, Accounting Department, Canadian Northern Ry., Toronto; June 15, 1909, to Nov. 1916, chief clerk, Accounting Department, Canadian Northern Ry., Toronto; Nov. 1916, to Dec. 31, 1918, Chief Accountant, Canadian Northern Ry., Toronto; Dec. 31, 1918 to Feb. 19, 1923, Treasurer, Canadian Northern Ry. System, Toronto.

Cecil Edward Friend, who has been appointed Assistant General Comptroller, Canadian National Rys., Montreal, was born at Brighton, Eng., Oct. 12, 1871, and entered railway service in Dec. 1893, since when he has been, to 1896, secretary to Traffic Manager, C. P. R., Winnipeg; 1896 to 1897, stenographer to Superintendent, Canadian Northern Ry., Winnipeg; 1897 to 1901, chief clerk and accountant, same road, Winnipeg; 1901 to 1910, Auditor, same road, Winnipeg; 1910 to 1918, General Auditor, same road, Winnipeg; 1918 to Feb. 19, 1923, Comptroller, Canadian National Rys., Toronto.

J. Murray Gibbon, General Publicity Agent, C. P. R., was chairman at an Audit Bureau of Circulations dinner at Montreal, Feb. 17. He is a member of the Bureau's Canadian advisory committee.

C. S. Gowans, who has resigned as Foreign Freight Agent, C.P.R., Montreal, to join the firm of Thomson & Earle, grain brokers, Montreal, entered C.P.R. service, March 25, 1901, since when he has been, to Sept., 1906, in Auditor of Agencies' office; Sept., 1906, to Sept., 1908, stenographer to Vice President; Sept., 1908, to Sept., 1911, Contracting Import Freight Agent; Sept., 1911, to Oct., 1918, chief clerk, Import Freight Department; Oct., 1918, to March, 1919, acting Import Freight Agent; March to Nov., 1919, Import Freight Agent; Nov., 1919, to Jan. 1923, Foreign Freight Agent, all at Montreal.

Hon. G. P. Graham, Minister of National Defence, who has been acting as Minister of Railways and Canals since the late Hon. W. C. Kennedy had to give

up the duties, has also been appointed acting Postmaster General, during the Hon. C. Murphy's absence on account of illness.

Mrs. G. P. Graham, wife of the Minister of National Defence, and acting Minister of Railways and Canals, and Lady Thornton and Miss Thornton, wife and



W. S. Harrison,
General Auditor of Revenues, Canadian National Railways.



J. B. McLaren,
Comptroller, Central Region, Canadian National Railways.

daughter of the President of the Canadian National Rys., attended the drawing room given by the Governor General and Lady Byng in Ottawa, Feb. 4.

Casimir S. Gzowski, who died in Tor-

onto, Dec. 16, was a son of the late Colonel Casimir S. Gzowski, C.E., who had important construction contracts in the early days of Canadian railroading especially on the G.T.R. He left an estate valued at \$483,386, which is to be divided into 100 shares, 22 of which are left to his son Casimir S. Gzowski, Assistant to Vice President, Construction Department, Canadian National Rys.

Robert Wetmore Hannington, who has been appointed Assistant Regional Counsel, Western Region, Canadian National Rys., Vancouver, B. C., was born at Dorchester, N. B., graduated from Dalhousie University in law, and was called to the bar in 1892. He is a son of the late Hon. D. L. H. Hannington, a former Premier of New Brunswick, and at the time of his death, Senior Judge of the New Brunswick Supreme Court. He went to Nelson, B. C. in 1897 and commenced practice there. In 1908 he moved to Vancouver, B. C., and in 1915, was appointed City Solicitor of Victoria, B. C., which position he held until Oct. 1919, when he was appointed Solicitor for British Columbia, Canadian National Rys., Vancouver.

George H. Ham, of the C. P. R. headquarters staff, was visiting in Florida during February, and attended the South Florida Fair and Gasparilla Carnival at Tampa, where there was a Canadian exhibit.

William Smith Harrison, who has been appointed General Auditor of Revenues, Canadian National Railways, Montreal, was born at Gresley, Eng., April 3, 1880, and entered G. T. R. service in 1899, since when he has been, to 1900, junior clerk, Mimico, Ont.; 1900 to 1904, operator and relieving agent, Middle and Northern Division; 1904 to 1908, agent, Campbellford, Ont.; 1908 to 1910, Travelling Auditor, Montreal; 1910 to 1913, in office of Auditor of Revenue, Montreal; 1913 to 1918, chief clerk, same office; 1918 to Sept. 25, 1919, Assistant to Auditor of Revenue, Montreal; Sept. 25, 1919 to Feb. 21, 1923, Auditor of Revenue, G. T. R., Montreal.

Mrs. Hays, widow of C. M. Hays, formerly President, G. T. R., and her daughter, Mrs. Thornton Davidson, have left Montreal to spend the rest of the winter in California.

Samuel J. Hungerford, who has been appointed Vice President in charge of Operation and Maintenance, Canadian National Rys., Montreal, was born near Bedford, Que., July 16, 1872, and entered railway service in May, 1886, since when he has been, to Feb. 1891, machinist apprentice, South Eastern Ry. and C. P. R., Farnham, Que.; May, 1891, to Aug. 1894, machinist at various points in Quebec, Ontario and Vermont; Sept. 1894, to Aug. 1897, charge man, C.P.R., Windsor St., Montreal; Aug. 1897, to April 1900, Assistant Foreman, C. P. R., Farnham, Que.; April 1900, to Feb. 1901, Locomotive Foreman, C. P. R., Megantic, Que.; Feb. to Sept. 1901, General Foreman, C. P. R.; Sept. 1901, to Feb. 1903, Locomotive Foreman, C. P. R., Cranbrook, B. C.; Feb. 1903, to Jan. 1904, Master Mechanic, Western Division, C. P. R., Calgary, Alta.; Jan. 1904, to Dec. 1907, Superintendent, Locomotive Shops, C. P. R., Winnipeg; Jan. 1908, to Feb. 1910, Superintendent of Shops, C. P. R., Winnipeg, Man.; Mar. 1910, to April 1915, Superintendent of Rolling Stock, Canadian Northern Ry., Winnipeg; May 1915, to Nov. 1, 1917, Superintendent of Rolling Stock, C.N.R., Toronto; Nov. 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, C.N.R.,

Toronto; Dec. 1918, to Sept. 1920, Assistant Vice President, Operation, Construction and Maintenance, Canadian National Rys., Toronto; Sept. 1920, to Oct. 10, 1922, Vice President, Operation and Maintenance, Canadian National Rys., Toronto; Oct. 10, 1922 to Feb. 19, 1923, Vice President and General Manager, Canadian National Rys., Toronto.

L. Stewart Irvine, whose appointment as Soliciting Freight Agent, Canadian National Rys., Calgary, Alta., was announced in our last issue, was born at Glengarnoch, Scotland, April, 14, 1878, and entered railway service in July, 1887, since when he has been, to Sept. 1893, telegraph operator, ticket clerk and chief clerk, Glasgow and Southwestern Ry., Elderslie, Johnstone and Glengarnoch, Scotland; April 1896 to Oct. 1899, Inspector, Joint Rate Inspection Bureau, Chicago, Ill.; Oct. 1899 to March 1904, rate clerk, Claims Department, Chicago and Northwestern Ry., Chicago, Ill.; during the winters from 1904 to 1906, chief clerk, yard office, C.P.R., Moose Jaw, Sask.; Jan. 1908 to April 1911, rate clerk, Claims Department, Chicago and Northwestern Ry., Chicago, Ill.; April 1911 to Jan. 1916, train agent, Freight Traffic Department, Grand Trunk Pacific Ry., Biggar and Regina, Sask.; Feb. 1916 to Oct. 1920, Soliciting Freight Agent, G.T.P.Ry., Regina, Sask.; Oct. 1920 to Dec. 31, 1922, Soliciting Freight Agent, Canadian National-Grand Trunk Pacific Rys., Regina, Sask.

Thomas Kilpatrick, who has been appointed General Manager and General Superintendent, Pacific Great Eastern Ry., Vancouver, B. C., was born at Simcoe, Ont., April 27, 1857, and entered railway service in May 1884, since when he has been, to May 1885, on C. P. R. construction along the north shore of Lake Superior; June to Dec. 1885, on C. P. R. construction, Mountain Section, B. C.; April 1886, to April 1887, bridge-man, Mountain section, C. P. R.; April 1887 to Aug. 1893, bridge foreman, Mountain section, C. P. R.; Aug. 1893 to May 1901, Bridge and Building Master Mountain Section, C. P. R.; May 1901 to Dec. 1912, Superintendent, District 1, British Columbia Division, C. P. R., Revelstoke; Dec. 1912 to Aug. 1915, in private business; Aug. 1915 to Jan. 31, 1923, Inspector and Superintendent of highway bridges for B. C. Government.

W. B. Lanigan, General Freight Traffic Manager, C.P.R., was reported in a recent press dispatch, as quoted in Canadian Railway and Marine World for February, to have stated at Regina that he would retire from the service in the near future. Enquiry shows that the report was not justified, and there does not seem to be any probability of Mr. Lanigan's retirement shortly, owing to the railway traffic situation. Should he continue until 1924, he will have reached his 40th year of service.

T. J. Macabe, Assistant Treasurer, Canadian National Rys., Toronto, has resigned to become President of the Buntin Reid Co., wholesale paper dealers, etc., Toronto.

George E. MacDonald, at one time a partner in MacDonald-Marpole Co., coal merchants, Vancouver, B.C., and from April, 1919, to March, 1920, General Manager, Pacific Great Eastern Ry., there, died at Ottawa, Ont., Feb. 7, of pneumonia, after an illness of three days. On resigning as General Manager, Pacific Great Eastern Ry., he joined the Blackstone Coal Co., of Edmonton, Alta.

William McNab, formerly Chairman,

Valuation Committee, G. T. R., Montreal, died there Feb. 23, after a short illness. He was born at Irvine, Scotland, entered G. T. R. service in 1870, and served as draftsman, chief draftsman, principal assistant engineer, valuation engineer, and subsequently Chairman of the Valuation Committee. The



J. M. Rosevear,
General Comptroller, Canadian National Railways.



J. A. Yates,
General Treasurer, Canadian National Railways.

Montreal, Feb. 26, was attended by a large number of Grand Trunk and other railway officials.

Sir Donald Mann, ex-Vice President, Canadian Northern Ry., Toronto, has re-

funeral service at Knox Crescent Church, covered from a severe influenza attack.

William Thomas Marlow, who has been appointed Foreign Freight Agent, C.P.R., Montreal, was born at Limerick, Ireland, Oct. 25, 1872, and entered transportation service in Sept., 1886, since when he has been to Apr., 1888, junior in dispatcher's office, C.P.R., Toronto; May, 1888 to March, 1889, junior clerk, Assistant Superintendent's office, C.P.R., Toronto; March, 1889, to Feb., 1896, clerk, Assistant Freight Traffic Manager's office, C.P.R., Toronto; Feb. 1896, to March, 1897, chief tariff clerk, C.P.R., Montreal; March 1897 to Nov. 1902, clerk, General Freight Agent's office, C.P.R., Hong Kong, China; Apr. 1903, to March, 1904, Assistant to Foreign Freight Agent, C. P. R., Montreal; March 1904, to Aug. 1914, Import Freight Agent, C.P.R., Montreal; Aug. 1914, to Sept. 1918, Assistant Director, Overseas Transport, Dominion Government, Montreal; Sept. 1918, to March 1919, Deputy Director General, British Ministry of Shipping (Canada), Montreal; March 1919 to Jan. 1923, General Freight Agent, Canadian Pacific Ocean Services, Ltd., and latterly, General Freight Agent, Ocean Traffic, C.P.R., Montreal.

A. McGovern, Toronto, has been re-elected Chairman, Brotherhood of Railroad Trainmen, Eastern Lines, Canadian Pacific Railway.

James Bower McLaren, who has been appointed Comptroller, Central Region, Canadian National Rys., Toronto, was born at Perth, Ont., Mar. 5, 1878, and entered transportation service Dec. 26, 1892, since when he has been to May, 1898, clerk, Freight Department, G.T.R., Brockville, Ont.; May to Nov. 1898, accountant, Canada Atlantic Transit Co., Canada Atlantic Ry.; Nov. 1898 to Sept. 1901, accountant, cashier, chief clerk, agent, and General Yardmaster, consecutively, G. T. R., Durand, Mich.; Sept. 1901, to Aug. 1913, clerk, travelling auditor, assistant chief clerk, consecutively, Audit Department, G. T. R., Montreal; Aug. 1913, to Jan. 1916, Auditor of Freight Accounts, G. T. R., Montreal; Jan. 1916, to Sept. 25, 1919, Auditor of Revenue, G. T. R., Montreal; Sept. 25, 1919 to Feb. 19, 1923, General Auditor, G. T. R., Montreal.

Sir Augustus Nanton, one of the C.P.R. directors, and President, Winnipeg Electric Ry., left Winnipeg, Feb. 25, with Lady Nanton, to join their daughters, who are spending most of the winter in Switzerland.

Alfred Price, who retired from the position of General Manager, Eastern Lines, C.P.R., Montreal, last year, on account of ill health, and went to Torquay, Devonshire, Eng., has spent some time in Italy, recently. He wrote a friend in Calgary, Alta., recently, that he hoped to visit Western Canada in the near future.

W. D. Robb, who has been appointed Vice President in charge of Insurance, Lands, Express, Telegraphs, Colonization, Development and General Matters, Canadian National Rys., Montreal, was born at Longueuil, Que., Sept. 21, 1857, his father having come to Canada from Scotland, some time before, to engage in the early construction work on the G. T. R. He was educated at Sherbrooke Academy and St. Francis College, Richmond, Que., and entered G.T.R. service in 1871, since when he has been, to July 1882, machinist apprentice, Montreal; July, 1882, to Jan. 1883, charge hand, Montreal; Jan. to Aug. 1883, Night

Locomotive Foreman, Montreal; Aug. 1883 to Jan. 1897, Locomotive Foreman, Belleville, Ont., Jan. 1897 to July 1901, Master Mechanic, Middle Division, London, Ont.; July 1901 to Sept. 1, 1917, Superintendent of Motive Power, Montreal; Sept. 1, 1917 to Oct. 1918, Vice President in charge of Motive Power Equipment and Machinery, Montreal; Oct. 1911 to Aug. 17, 1922, Vice President, Transportation, Construction and Maintenance, Montreal; Aug. 17, 1922 to Feb. 19, 1923, Vice President and General Manager, G. T. R., Montreal.

J. M. Rosevear, who has been appointed General Comptroller, Canadian National Rys., Montreal, was born at St. Lambert, Que., Aug. 9, 1869, and entered G. T. R. service in 1897, since when he has been, to 1905, clerk in Accounting Department; 1905 to 1907, travelling accountant; 1907 to Sept. 1, 1908, chief clerk to Auditor of Disbursements; Sept. 1, 1908 to Oct. 1918, Auditor of Disbursements; Oct. 1918 to Sept. 25, 1919, General Auditor, G. T. R. and Grand Trunk Pacific Ry.; Sept. 25, 1919, to Feb. 19, 1923, Comptroller, G.T.R., Montreal.

W. LeB. Ross, who has been appointed Treasurer, Western Region, Canadian National Rys., Winnipeg, was born at Ottawa, Aug. 9, 1868, and entered railway service in 1887, since when he has been, to July 1890, in Audit Department, Canada Atlantic Ry., Ottawa, Ont.; 1890, in freight accounting office, same road, Ottawa, Ont.; 1890 to 1892, in Treasurer's Department, same road, Ottawa, Ont.; 1892 to 1906, cashier and paymaster, same road, Ottawa, Ont.; 1906 to 1919, Local Treasurer, Grand Trunk Pacific Ry., Winnipeg; 1919 to Feb. 19, 1923, Local Treasurer, Canadian National Rys., Winnipeg.

Mrs. Scoles, widow of C. R. Scoles, a former General Manager of the Atlantic, Quebec & Western Ry., has arrived in Honolulu on a trip round the world, and is expected to return to Montreal early in the summer.

Samuel Leonard Shannon, Comptroller and Treasurer, Intercolonial Ry., Moncton, N.B., who has been given six months leave, preparatory to superannuation, was born at Halifax, N.S., Jan. 18, 1862. He entered civil service as a clerk in Railways & Canals Department, Ottawa, in Jan., 1881, was appointed Chief Accountant, Oct. 18, 1889, and held that position until Nov., 1906, when he was appointed Comptroller and Treasurer, Intercolonial Ry., Moncton, N.B., which position he has held since.

Lady Shaughnessy and the Hon. Marguerite Shaughnessy expect to leave Montreal about the middle of March to spend some time in Europe, where Lord Shaughnessy will join them later.

C. M. Sinclair, local freight agent, Toronto, Hamilton & Buffalo Ry., and C.P. R., Hamilton, Ont., died there, Jan. 18. He entered the company's service in 1895 as clerk, and had been local freight agent at Hamilton since June, 1907.

W. H. Smith, Manager, Canada Atlantic Transit Co. and Ontario Car Ferry Co., Montreal, who died suddenly at Detroit, Mich., Jan. 31, was born at Ogdensburg, N.Y., Apr. 9, 1858. He entered transportation service in 1876, and during that year was clerk, Audit Department, Ogdensburg & Lake Champlain Ry., Ogdensburg, N.Y.; 1876 to June 1, 1877, clerk, Freight Department, same company, Malone, N.Y.; June 1 to Dec. 1, 1877, clerk, Accounting Department,

same company, Ogdensburg, N.Y.; Dec. 1, 1877, to July 1, 1878, agent, same company, Bangor, N.Y.; July 1, 1878, to Oct. 31, 1880, agent, same company, Lawrence, N.Y.; Nov. 1, 1880, to Oct. 31, 1883, ticket agent, same company, Ogdensburg, N.Y.; Nov. 1, 1883, to Dec. 31, 1884, Car Accountant and ticket agent, same company, Ogdensburg, N.Y.; Jan. 1, 1885 to Jan. 31, 1886, City Passenger Agent, West Shore Ry., Auburn, N.Y.; Feb. 1, 1886, to Dec. 31, 1888, accountant, Central Vermont Ry. and Ogdensburg Transit Co., Ogdensburg, N.Y.; Jan. 1, 1889, to May 31, 1892, chief clerk to Agent and accountant, same companies, Ogdensburg, N.Y.; June 1, 1892, to March 15, 1898, accountant, same companies, St. Albans, Vt.; March 19 to Dec. 31, 1898, General Agent and accountant, Canada Atlantic Ry. and Canada Atlantic Transit Co., Depot Harbor, Ont.; Jan. 1, 1899 to Dec. 31, 1904, General Agent, Canada Atlantic Ry., Canada Atlantic Transit Co., Ottawa, Ont.; Jan. 1, to Oct. 31, 1905, Auditor, same companies, Ottawa, Ont.; and from Nov. 1, 1905, to Oct. 31, 1907, Manager, Canada Atlantic Transit Co. and from Nov. 1, 1907, until his death, also manager, Ontario Car Ferry Co., Montreal. He left Montreal, Jan. 30, to attend a meeting of G.T.R. officials at Detroit and was, apparently, in the best of health, when he retired to his hotel the next evening. The body was removed to Montreal, Feb. 1, and the funeral took place at Malone, N.Y., Feb. 3.

Lt.-Col. Onesiphore Ernest Talbot, who has been appointed a director, Canadian National Rys., was born at St. Arsene, Temiscouata County, Que., and while young, his family moved to St. Michel, Bellechasse County, where he has lived since. Later in life, he was associated with a brother, on surveys for the Mississippi and Ouachita Ry. and Little Rock, Pine Bluff and New Orleans Ry., in Arkansas, and a few years later represented Quebec interests in a tour of the territory between Winnipeg and Victoria, B. C., to report on the possibilities of a trans-Canada railway, the information gained being used to a considerable extent during the construction of the Grand Trunk Pacific Ry. He was also engaged for some time in the location of some 60,000 square miles of coal area in the Brazeau district. He was, for some time a commercial traveller, and took an interest in agricultural and military affairs, was Colonel of the 17th Battalion of Levis and Bellechasse, and conducted a successful recruiting campaign in the province, during the war. He was Adjutant of the 1906 Bisley team, and also President of the Quebec Civil Employes Association, of which he is now honorary President. A few years ago he was appointed Collector of Provincial Revenue, at Quebec, which position he still holds.

R. C. Vaughan, who has been appointed Director of Stores and Purchases, Canadian National Rys., Montreal, was born at Toronto, Dec. 1, 1883, and entered railway service Oct. 3, 1898, since when he has been, to Mar. 1902, office boy, clerk and stenographer, General Freight Agent's office, C. P. R., Toronto; July to Dec. 1902, in Freight Department, G. T. R., Toronto; Jan. 1903, to July 1, 1910, clerk, secretary to Third Vice President and General Manager, and chief clerk to Third Vice President, Canadian Northern Ry., Toronto; July 1, 1910, to Oct. 1918, Assistant to Third Vice President, C.N.R., Toronto; Oct.

1918 to Nov. 1920, Assistant to President, Canadian National Rys., Toronto; Nov. 1920, to Feb. 1923, Vice President in charge of Purchases, Supplies and Stores, Canadian National Rys., Toronto.

Mrs. Vaughan, wife of H. H. Vaughan, formerly Assistant to Vice President, C. P.R., Montreal, is spending part of the winter in Florida with her son and mother.

James A. Virtue, who has been appointed local freight agent, Toronto, Hamilton & Buffalo Ry., and C.P.R., Hamilton, Ont., was born at Beechburg, Ont., in 1875 and entered railway service in 1892, since when he has been, to 1898, in local freight office, C.P.R., Montreal; 1898 to 1905, in Freight Claim Agent's office, Montreal; 1905, to April, 1914, Freight Claim Agent's office, C.P.R., Toronto; April, 1914, to Jan. 31, 1923, chief clerk, local freight office, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont.

Paul Wadsworth, who died at Albany, N. Y., Feb. 13, was well known to Canadian railway traffic men. He was born at Auburn, N. Y., June 13, 1854, was from 1869 to 1871, with the Atlantic and Pacific Telegraph Co., entered transportation service in 1871, and was from that time to 1889, consecutively, telegraph operator, ticket agent and operator, Binghamton, N. Y.; cashier, Freight Department, and operator, Oneonta, N. Y.; local freight agent, train dispatcher, Albany, N. Y.; for Delaware and Hudson Canal Co., West Shore Rd., and Line agent, West Shore and Hoosac Tunnel Lines; 1889 to 1896, Assistant General Freight Agent, Delaware and Hudson Canal Co.; 1896 to 1918, consecutively, General Freight Agent, and Freight Traffic Manager, Delaware and Hudson Co., Albany, N. Y. He was retired on superannuation in 1918.

Edward Wanklyn, a general agent in Mexico City, who died there, Feb. 5, aged 61, was a brother of F. L. Wanklyn, General Executive Assistant, C. P. R., Montreal.

Miss Gyneth Wanklyn, only daughter of F. L. Wanklyn, General Executive Assistant, C. P. R., Montreal, was married there Feb. 21 to W. D. McLennan, of that city.

Frederick Ernest Whelpley, who has been appointed acting Treasurer, Atlantic Region, Canadian National Rys., Moncton, N.B., was born at St. John, N. B., Aug. 20, 1861, and entered transportation service May 1, 1893, since when he has been, to Dec. 1, 1893, clerk, Hamburg-American Steamship Co., Montreal; Dec. 1, 1893, to May 1, 1903, outward freight clerk, Dock Department, same company, Hoboken, N.J.; May 1, 1903, to June 1, 1915, cashier, Canadian Government Railways, Moncton, N.B.; June 1, 1915, to Feb. 19, 1923, Assistant Treasurer, Canadian Government Rys., Moncton, N.B.

James A. Yates, who has been appointed General Treasurer, Canadian National Rys., Montreal, was born there, Nov. 30, 1876, and entered G.T.R. service in Feb., 1891, since when he has been, to Dec., 1906, clerk, Treasurer's office, Montreal; Jan., 1907, to Dec., 1911, chief clerk, Treasurer's office, Grand Trunk Pacific Ry., Montreal; Jan. 1912, to July, 31, 1914, chief clerk, Treasurer's office, G.T.R., and G.T.P.R.; July 31, 1914, to Aug. 31, 1922, Assistant Treasurer, G.T.R., and Secretary, Montreal and Southern Counties Ry.; Aug. 31, 1922, to Feb. 19, 1923, Treasurer, G.T.R., Montreal.

Canadian Pacific, Canadian National and Grand Trunk Railways' Earnings.

The railway operating results in Dec. 1922, were not equally favorable for the larger Canadian systems. The C. P. R. net earnings were larger than in Dec. 1921. The Canadian National Rys. incurred a much larger operating deficit than in Dec. 1921. The Grand Trunk Railway System, all lines, had an operating deficit in December which was nearly as large as that in Dec. 1921, and the G. T. R. Canadian lines had an operating deficit in Dec. 1922, compared with an operating surplus in Dec. 1921.

Figures for the individual roads show that in Dec. 1922 the C. P. R. gross earnings were \$17,365,639, an increase of \$1,608,716 over Dec. 1921. Operating expenses, \$13,900,835, were but \$61,692 greater than in Dec. 1921, so that the net earnings, \$3,464,805, were \$1,547,023 more than in Dec. 1921. The result on the complete year's operations was that gross earnings were \$186,675,036, a decrease of \$6,346,819 from 1921; operating expenses, \$150,373,345, were \$8,446,769 less than in 1921, and, on account of the greater decrease in expenses than in gross earnings, the net revenue for the year, \$36,301,691, was \$2,099,951 more than in 1921. Up to the end of October, as stated in preceding issues of Canadian Railway and Marine World, the company suffered a decrease in net, compared with the same period in 1921, and it was only due to the very large gross and net earnings consequent on the heavy traffic in the last three months of the year, that it was able to show better results for 1922 as a whole than for 1921. The net earnings for 1922 are the most favorable since 1917.

While the C. P. R. was able to turn December operations to such good account in increasing its lead in net earnings over those of 1921, the Canadian National Rys., including the Canadian Northern, Canadian Government, and Grand Trunk Pacific Rys., steam lines only, were not so fortunate. For December, Canadian National Rys. gross earnings were \$10,626,610, compared with \$11,573,140 in Dec. 1921; and operating expenses were \$12,735,699, compared with \$12,689,793 in Dec. 1921, which made the Dec. 1922 operating deficit \$2,109,090, compared with \$1,116,653 in Dec. 1921, an increase of \$992,437. For the year, Canadian National Rys. operating revenues were \$118,610,442, compared with \$125,317,431 in 1921; and operating expenses were \$128,608,096, compared with \$141,733,688 in 1921, resulting in an operating deficit of \$9,997,655 compared with \$16,416,257 in 1921. While the results for December were discouraging, it is evident that for the year as a whole the 1922 results were a great improvement over those of 1921.

On the G. T. R., all lines, December gross earnings were \$9,358,856, compared with \$7,170,541 in Dec. 1921; and operating expenses were \$10,494,074, compared with \$8,333,468 in Dec. 1921, which left a deficit of \$1,135,217 in Dec. 1922 as compared with \$1,162,927 in Dec. 1921. For the Canadian lines, gross earnings for the month were \$6,721,776, compared with \$5,668,995 in Dec. 1921; and operating expenses were \$8,446,758 compared with \$4,827,245 in Dec. 1921, leaving an operating deficit of \$1,724,981 in Dec. 1922 compared with

an operating surplus of \$841,750 in Dec. 1921. For the year 1922, the G. T. R., all lines, gross earnings were \$106,348,507, compared with \$101,961,805 in 1921; operating expenses were \$93,525,166, compared with \$97,412,480, leaving net earnings of \$12,823,341, compared with \$4,549,324 in 1921. For the Canadian lines only, gross earnings for 1922 were \$77,700,019, compared with \$76,858,032 in 1921; operating expenses were \$70,317,813, compared with \$71,179,293, leaving net earnings of \$7,382,206 in 1922, compared with \$5,678,739 in 1921.

As the Canadian National Rys. operating deficit in 1922 was \$9,997,655, and the G. T. R.'s net earnings were \$12,823,341, it is evident that the Government owned roads as a whole got through the year with an operating surplus of almost \$3,000,000. Since this represents such an improvement over the results in 1921, when the operating deficit for the Government lines as a whole was in the neighborhood of \$12,000,000, and since the C. P. R. was able to secure net earnings greater than in 1921 by over \$2,000,000, it is evident that in 1922 Canadian railway industry as a whole made some progress in getting the railway business in Canada on a financially self supporting basis.

The mere fact of results in 1922 having been as above indicated, however, does not constitute any reason for supposing that the progress made will be the forerunner for still greater progress, nor that the ground gained will not be lost, for the reason that the railway industry is still faced with conditions which make the future seem very uncertain. In view of the fact that the C. P. R. was behind in its net, as compared with 1921, until the end of Oct. 1922, and as the Canadian National Rys. owe a large part of their deficit reduction to the heavy autumn traffic, it must be evident that if the railways are to continue to enjoy some degree of financial prosperity, they must have heavy traffic, for with the greatly reduced rates now in effect, any net earnings without large traffic would be next to impossible. Not only must they continue to have heavy traffic, but in addition they must be protected from the agitation for rate reductions which is all too prevalent, and which threatens to disregard the Board of Railway Commissioners and go direct to Parliament to get results. The preliminary January figures, show that the railways had somewhat greater earnings than in Jan. 1922, but preliminary statements for the first two weeks in February show a falling off tendency. Since the average rates are much lower now than in Jan. and Feb. 1922, it stands to reason that the railways must be moving more traffic now than they did then, to derive the same gross earnings, and as operating expenses were not reduced to the same extent as rates, it is also a reasonable proposition that net earnings will not be so good now as in Jan. and Feb. 1922. It may be argued, and is, that any deficit the Canadian National Rys. make may be paid from the proceeds of taxation, but it must be remembered that the national debt, bearing interest, is swelled by every deficit which these railways are responsible for, and this condition is not good for the country. The privately owned roads must have

adequate earnings if efficient transportation in the future is to be provided for, so that when all conditions are taken into consideration, agitation for rate reductions at present seems badly out of place.

Maritime Provinces Railway Traffic Demoralized.

Owing to heavy snowstorms at the end of January, and again early in February, railway traffic in the maritime provinces was badly disorganized for a considerable period on the Kent Northern between Kent Jct. and Richibucto, N.B., the first train to get through from Richibucto for nine days reached Kent Jct., Feb. 6; the Prince Edward Island car ferry, on Feb. 6, was unable to get nearer to Borden, than three miles owing to ice, and had to put back to Tormentine, N. B., while trains all over were hours late in reaching their destinations. On Prince Edward Island, railway traffic generally was suspended, and on Feb. 11, the Associated Boards of Trade telegraphed the Dominion Government asking that an aeroplane service be operated between the mainland and Charlottetown until ice conditions in Northumberland Strait improved. The Reid Newfoundland Co's regular steamship service between North Sydney, N.S., and Port aux Basques, Nfld., has been suspended for some time owing to the Newfoundland Ry. being practically closed down consequent upon the weather. A temporary service was put in operation between St. John's, Nfld., and Louisburg, N. S., and during the stormy weather early in February the s. s. Kyle which left St. John's, Feb. 3, was forced to lie to in the vicinity of the St. Pierre and Miquelon Islands for several days, and only reached Port aux Basques, the first port on Feb. 8. Train service on the Newfoundland Ry. from St. John's to Millartown Jct., 309.57 miles was resumed Feb. 18.

Grant Hall's Western Inspection Trip.

Grant Hall, Vice President, C. P. R. left Montreal, Jan. 20, on a trip over the company's lines to the Pacific coast, accompanied by D. C. Coleman, Vice President, Western Lines, who had been in Montreal discussing appropriations for betterments and by F. H. Anson, President, Abitibi Power and Paper Co. From Winnipeg he was also accompanied by J. W. Allan, K. C., ex-M. P. for Winnipeg South; Andrew Kelly, President, Western Canada Flour Mills, and R. R. Dobell, Western Manager, Ogilvie Flour Mills. The general superintendents accompanied him over their respective districts and the superintendents over their respective divisions.

Mr. Hall's principal stops were at Fort William, Winnipeg, Regina, Calgary, Vancouver and Victoria and he went over the recently completed Weyburn-Lethbridge line, during which, while near Manyberries, Sask., he shot from the standing train killing a coyote at 350 yards. He returned to Montreal early in February.

The Transportation Club of Toronto held its monthly luncheon at the Queen's Hotel, Toronto, Feb. 26, about 100 members attending. W. T. Jackman, Professor of Political Economy, Toronto University, spoke on the economics of transportation.

Freight Car Locations on Canadian Railways.

The Railway Association of Canada has issued a report on the location of freight cars on Canadian railways on Feb. 1, 1923, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton Dunvegan & British Columbia; Grand Trunk; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo; Wabash, in Canada; Central Vermont, in Canada; Michigan Central, in Canada; and Pere Marquette, in Canada, as follows: cars owned by reporting railways, 220,369; home cars on Canadian foreign lines, 17,325; home cars on U.S. lines, 59,235; home cars on home roads, 143,809; Canadian owned foreign cars on home lines, 16,362; U.S. owned foreign cars on home lines, 30,707; total cars on lines, 190,873; per cent on lines to total owned, 86.6; deficiency on lines to total owned, 29,491; home cars in bad order, 10,434; foreign cars in bad order, 518; total cars in bad order, 10,952; per cent in bad order 5.7; privately owned U.S. cars on lines, 1,837; privately owned Canadian cars on lines, 919.

Traffic Orders by Board of Railway Commissioners.

Interswitching Rates to Armstrong, Whitworth of Canada, Ltd.

33,311. Jan. 19.—Re application of Armstrong, Whitworth of Canada, Ltd., for an order, under sec. 3, 4 and 317 of the Railway Act, 1919, declaring the legal rates from and to their siding at Longueuil, Que., under existing tariffs, effective from Jan. 1, 1917, to date; and for a ruling affecting all other lines under the Board's jurisdiction, connecting with the Quebec, Montreal & Southern Ry. at St. Lambert, Que. Upon hearing the application at Montreal, Oct. 2, 1922, the applicants, the Quebec, Montreal & Southern, and the Grand Trunk Railways, being represented, and what was alleged, the Board declares that its general order 252, Oct. 26, 1918, prescribed interswitching rates for distances not exceeding 4 miles, which, when added to the line carrier's rates to or from the interchange point, fixed the legal maximum joint rates in respect of the traffic covered by the said order.

Paper Rates from Sturgeon Falls and Espanola.

33,344. Jan. 31.—Re complaint of Spanish River Pulp & Paper Mills, Ltd., that the rates on group A descriptions of paper from Sturgeon Falls and Espanola, Ont., to Toronto and other destinations in Ontario, are higher, distances considered, than from Montreal, Lachute and other origin stations named in tariffs of Canadian Pacific Ry. (C.R.C. no. E-3807) and Canadian National Rys. (C.R.C. no. E-326). Upon hearing the complaint in Sault Ste. Marie, July 27, 1922, the complainants and the C.P.R. being represented at the hearing, and what was alleged; and upon reading the further written submissions filed, and the report of its Chief Traffic Officer, the Board orders that the complaint be dismissed.

Building Sand, Gravel and Crushed Stone Rates.

33,355. Feb. 1.—Re application of Great West Sand & Gravel Co. and Braid &

McCurdy, of Winnipeg, for a reduction in rates on building sand, gravel and crushed stone from Birds Hill to Winnipeg. Upon hearing the application at Winnipeg, Oct. 2, 1922, the applicants, the C.P.R. Co. and the Building Products & Coal Co. being represented, and what was alleged; and upon the report and recommendation of its Chief Traffic Officer, the Board orders that the application be refused.

Galvanized Sheets Rates.

33,362. Feb. 7.—Re complaint of Dominion Sheet Metal Corporation, of Hamilton, Ont., against rate on galvanized sheets to Winnipeg. Upon hearing the complaint at Ottawa, Nov. 21, 1922, the complainant and the Grand Trunk and Canadian Pacific Railways being represented, and what was alleged; and upon the report and recommendation of its Chief Traffic Officer, the Board orders that the complaint be dismissed.

Telegraph, Telephone and Cable Matters.

At a meeting of Commercial Telegraphers' Union of America, at Montreal, Jan. 12, it was charged that the C.P.R. and the Canadian National Telegraphs managements had violated agreements made as to working conditions, but press reports do not give any details of the alleged violations.

The Canadian National Telegraphs branch office opened in the new Mount Royal Hotel, Montreal, recently, is equipped with a teletype for handling messages between the branch and main offices. It is said to be the first instrument of this type installed in a public telegraph office in Canada.

Canadian National Telegraphs has completed its new automatic department at its Toronto office, with a 4-channel mux to Montreal, 2-channel muxes to Winnipeg, Chicago, Buffalo and New York, and single channels to Quebec, Ottawa, Hamilton and Detroit. It is also installing a pin jack switchboard and high speed repeater equipment for the main office at Toronto.

The Marconi Wireless Telegraph Co. is reported to have decided to erect a radiotelegraph station at Vancouver, B.C., at an approximate cost of \$2,000,000. It is stated that it is intended to make it the most powerful station in the world, for a direct service to England and Australia. The company will also, it is reported, erect another station at Montreal, for direct communication to England and other European points.

R. Lavoie, Moncton, N.B., who retired on pension recently, after 52 years service, entered the Montreal Telegraph Co's employ at the age of 17, and continued when that company's property was taken over by the Great Northwestern Telegraph Co., and again when the latter company's property was taken over by Canadian National Telegraphs. He was employed on the first pole line built from Riviere du Loup to Halifax, and also on the erection of G.T.R. telegraph lines between Montreal and Toronto, Toronto and Buffalo, and Detroit and Chicago. He was presented with a club bag by a number of his associates.

Dominion Government Telegraphs in Saskatchewan.

Minister of Public Works King gave the following information in the House of Commons recently, in answer to questions by T. Sales, Saltoats, Sask. Be-

tween Qu'Appelle, and Fort Qu'Appelle, there is pole line 17 miles and wire 17 miles; between Fort Qu'Appelle and South Humboldt, there is pole line 162 miles, and wires 163 miles; between South Humboldt and Battleford there is pole line 127 miles, wire 171½ miles; east of Battleford there are 7 offices, Qu'Appelle, Fort Qu'Appelle, Lipton, South Humboldt, Saskatoon, Henrietta and Baljennie. The proportion of general average of outlay, aside from salaries, for all lines and offices in Saskatchewan is \$18 a mile (wire). For the section embracing the 7 offices mentioned above, the cost of maintenance, exclusive of salaries, is \$6,327. There are 7 agent-operators and 1 lineman employed on these lines, the total salaries being \$10,980. Two linemen are employed, 1 at Fort Qu'Appelle, salary \$1,476 a year, and one at Saskatoon, salary \$1,620 a year. The outlay for keep of horses is included in the general average given above, and the cost of material used in maintaining the line is also included in the general average. During the last year, 5,762 messages were sent over these lines. With the exception of Baljennie, the Canadian Pacific Telegraphs and the Canadian National Telegraphs lines serve all the points in the territory covered by the Government lines mentioned above, in consequence of which the latter lines and offices east of Baljennie, along with some other sections farther west in Saskatchewan and in Alberta, are to be discontinued by March 31.

Among the Express Companies.

George Parker, Superintendent, Dominion Ex. Co., Toronto, died there, Feb. 25, aged 47.

A. F. Schimnoski, President, Dominion Ticket and Financial Corporation, Winnipeg, was arrested there, Feb. 8, on the failure of his company, and charged with the theft of \$11,000 from the Dominion Ex. Co.

Canadian National Ex. Co's Eastern Division officials met at Moncton, N.B., Feb. 5, and were addressed by F. C. Salter, Manager, Foreign Department. Events of the past year were reviewed, and the future outlook discussed.

W. L. Purvis, alias D. L. Curtis, was sentenced at Regina, Sask., Feb. 3, to 8 years in the penitentiary for holding up Canadian National Rys. train 6, Feb. 1, near Regina, and stealing papers and \$1,334.50 in cash from the Canadian National Express Co's safe, after gagging and binding the express messenger.

The Canadian National and Dominion Ex. Cos. have extended the delivery limits into the Moore Park district, Toronto, in compliance with the conditions as to express delivery limits set out in the Board of Railway Commissioners' judgment of July 17, 1919, on express rates, a summary of which was given in Canadian Railway and Marine World for Aug., 1919, page 441.

The Independent Cariboo Stage & Express Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$10,000 authorized capital, and office at Ashcroft, B.C., to take over as a going concern, the business operated by A. W. Jervis and L. H. Schamerhorn, at Ashcroft, as the Independent Cariboo Stage & Express Co., and to carry on bus, stage and express service between Ashcroft, Williams Lake and Quesnel, and elsewhere in the province.

Electric Railway Department

The Toronto Railway Arbitration Award.

The arbitration as to the amount to be paid by the City of Toronto for the Toronto Ry. Co's properties, etc., taken over by the city on Sept. 21, 1921, which commenced June 28, 1921, and the taking of evidence and counsel's arguments in which ended Nov. 28, 1921, after 168 sessions, was concluded, as far as the arbitrators are concerned, on Jan. 31, when the chairman, Hume Cronyn, and the company's arbitrator, Sir Thomas White, awarded the company \$11,188,500 with interest at 5 p. c. from Aug. 31, 1921, from which the city's arbitrator, Sir Adam Beck dissented.

The majority award gave particulars of the acquisition of the Toronto St. Ry. Co's system by the city in 1891, and of its subsequent transfer, first to Kieley, Mackenzie, Everett and Woodworth, and then by them to the Toronto Ry. Co. One clause of the agreement which was to be in force for 30 years from Sep. 1, 1921, was as follows:—

"At the termination of this contract the city may, in the event of the council so determining, take over all the real and personal property necessary to be used in connection with the working of the said railways, at a value to be determined by one or more arbitrators (not exceeding three) to be appointed as provided in the Municipal Act and the acts respecting arbitrations and references, and to have all the powers of arbitrators appointed under such acts, and each party shall bear one-half of the cost of the necessary arbitration at conclusion of term of lease, but the city shall only pay for the land conveyed by them to the purchaser, what it is worth, without reference to its value for the purpose of operating a street railway or railways."

Another clause provided that: "In arriving at such value the arbitrators are to consider and award only the value of the said several particulars to the city at the time of the arbitration, having regard to the requirements of a railway of the best kind and system then in operation and applicable to the said city."

On June 21, 1920, the city passed a bylaw, reciting the provisions of the agreement and statute and the intention to take over all the real and personal property necessary to be used in connection with the working of the railway under the terms of the agreement, conditions and statute, and authorizing the mayor and city treasurer to give the company notice that it was the city's intention at the termination of 30 years from Sept. 1, 1921 to take over all the real and personal property necessary to be used in connection with the working of the railway.

The two arbitrators, Hume Cronyn and Sir Thomas White made the following majority award:—"We adjudge that the following parcels of property, namely:—(1) That portion of the power house property on Front St. East which the city claims to be entitled to reject, consisting of land, building, plant, tools, equipment, and furniture; (2) The storage battery properties, viz:—(a) Battery and garage property on corner of Front and Frederick Sts., (including

land, buildings, structures, storage battery, and equipment), together with battery booster and equipment; (b) Harrison St. storage battery property (including land, building, structures, storage battery, and equipment), together with battery booster and equipment situate in the Harrison St. substation; (c) Storage battery in the Yonge St. substation with motor generator set and exciter motor generator set. (3) Sherbourne St. storage yard and carpenter shop parcel situate at the northwest corner of Front and Frederick Sts.; All as more particularly

Canadian Electric Railway Association.

Honorary President, E. A. Robert, President, Montreal Tramways Co., and Quebec Ry., Light, Heat & Power Co.

Honorary Vice President, Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co.

Honorary Council: Thos. Ahearn, President, Ottawa Electric Ry.; Acton Burrows, Proprietor, Canadian Railway and Marine World; Geo. Kidd, General Manager, British Columbia Electric Ry.; Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., and director, Quebec Ry., Light, Heat & Power Co.

President, Major F. D. Burpee, Manager and director, Ottawa Electric Ry.

Vice President, H. H. Couzens, General Manager, Toronto Transportation Commission.

Executive Committee: The President, the Vice President, the immediate past President (G. Gordon Gale, Vice President and General Manager, Hull Electric Co.) and D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; D. W. Houston, Superintendent, Regina Municipal Ry.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; R. Mayne-Reade, Superintendent, Quebec Railway, Light & Power Co.; W. R. Robertson, General Superintendent of Railways, Hydro-Electric Power Commission of Ontario; W. L. Weston, Manager, Nova Scotia Tramways & Power Co.; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

Treasurer, W. S. Hart, Managing Director, Three Rivers Traction Co.

Auditor, Lt.-Col. G. C. Rovee, General Manager, Toronto Suburban Ry.

Secretary, D. N. Gill, Comptroller, Ottawa Electric Ry., Ottawa, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

described in Schedule B to this award are necessary to be used in connection with the working of the railway within the meaning of the agreement.

All as more particularly described in Schedule B to this award are necessary to be used in connection with the working of the railway within the meaning of the agreement.

"We adjudge that the remainder of the property real and personal set out in said Schedule B is not necessary to be used in connection with the working of the railway and that the city is not obliged to take it over from the company under the terms of the agreement and statute." This included main office buildings, Scarboro Beach Park and King St. and St. Lawrence St. property, certain rolling stock valued at \$10,000; patterns, \$5,000; and materials in store and rolling stock supplies out of stores \$50,000.

"We award, adjudge the value of the real and personal property set out in Schedule A, together with the parcels of property included in Schedule B which, herein we find to be necessary to be used in connection with the working of the railway to be \$11,188,500. And we further adjudge that the city pay the company interest upon the \$11,188,500, at 5 p. c. per annum from Aug. 31, 1921, to the date of this award."

Sir Adam Beck presented the following brief minority report:—"I have had the opportunity of considering the award and reasons for award, of my colleagues and am unable to concur in their conclusions as to the method which should be adopted in ascertaining the value of the railway, plant, and equipment and in the valuation which they have placed upon it. I also dissent from their views as to the necessity of certain of the property which the company claimed should be valued as property required for the operation of the railway."

"With regard to the matter of depreciation I would follow all that the city has contended for by reason of obsolescence. Much of the track is antiquated and required to be replaced when the railway was taken over. Much of the rolling stock is out of date and costly to operate as compared with modern cars. I agree entirely with the contention of the city that the question of economy in operation is of vital importance in estimating obsolescence. The statute expressly provides that the arbitrators shall award only the value to the city, having regard to the requirements of a railway of the best kind and system in operation and applicable to the city, and in my opinion, the basis of valuation as fixed by the agreement between the city and the company, does not admit of any allowances being made for cars and equipment which are useless for the purpose of such a railway and should be valued only at what they can be sold for. For these and other reasons I am unable to agree with the majority finding as to a fair valuation, of the property, and under the circumstances it does not appear to me that any useful purpose can be served by the fixing of values by me."

Mr. Cronyn and Sir Thomas White gave the reasons for their award at great length. Following are extracts:—"At the outset the question arises as to the method or principle to be adopted in making the valuation of all these properties. Clause 7 of the conditions declare that the city may take over 'all the real and personal property necessary to be used in connection with the working of the railways' at a value to be determined by arbitration. There is a qualification to the effect that 'the city shall only pay for the land conveyed by it to the purchaser, what it is worth, without reference to its value for the purpose of operating a street railway or railways.' This proviso refers to land which the city had acquired from the Toronto St. Ry. Co., and was used in connection with the operation of the railway at the time the agreement was entered into.

"The statute and clause 7 of the conditions contain important provisions

already quoted relating to the arbitration and the method of valuation to be adopted. These provisions lay down the following definite qualifications which have been kept prominently in view in making the valuation:—(1) As to the land actually taken over from the city under the agreement the city is to pay only what it is worth, without reference to its value for the purpose of operating a street railway or railways. (2) In determining the value the franchise and earnings, present and future of the railway are not to be taken into consideration, but the arbitrators are to consider only the actual value of the actual and tangible property, plant, equipments, and works. (3) The arbitrators are to consider and award only the value of the several particulars (property, plant, equipments, and works) to the city at the time of the arbitration, having regard to the requirements of a railway of the best kind and system then in operation and applicable to the city.

"The question as to the time as of which the valuation is to be made is important because of the decline which has taken place in prices of commodities and in rates of wages since 1920. Clause 7 of the conditions makes no explicit reference to this although it might be inferred from its language that the valuation would be as of about the date at which the railway was taken over by the city. Sec. 4 of the statute, however, while it provides that the award of the arbitrators shall be made, if possible, not later than the time named by the city for taking over the property, provides also that the arbitrators shall consider only the value to the city at the time of the arbitration. It appears to us that the express language of the statute must govern, and therefore that the time as of which the valuation is to be made is the time of the arbitration.

"Counsel for the company laid stress upon the words 'value to the city' appearing in subsec. 4 of sec. 4 of the statute, and contended that by reason of them the arbitrators should take into account the advantage which the city enjoyed through being in a position to take over a running system and to continue to operate it without interruption of service to citizens as contrasted with the position in which it would have been had it been obliged to construct a new railway and create an operating organization. We think this is a mistaken view of the construction to be given to the words 'value to the city.' It appears to us that they must be related to the last words of the subsection in which they appear, viz.: 'having regard to the requirements of a railway of the best kind of system then in operation and applicable to the said city.'

"There was considerable controversy during the proceedings as to the meaning to be attached to the expression 'best kind and system' appearing in this subsection. It was established in evidence that the system under which the company was operating up to Sept. 1, 1921, viz., the electric overhead-trolley system, is the best system in use for the operation of surface street railways and that it is applicable to the city. We are, therefore, in our valuation, to have regard to the requirements of an electric overhead-trolley railway of the best kind now in operation and applicable to the city.

"The principal question, it seems to us, is, what is the actual value as of

the time of the arbitration of the actual and tangible property, plant, equipments, and works connected with and necessary to the operation of the railways. The several qualifications referred to above must be kept constantly in mind in making the valuation. There was considerable discussion by counsel as to the meaning of 'actual' in the expression 'actual values.' Webster's International Dictionary defines 'actual' as the equivalent of 'real' and opposed to such words as potential, possible, speculative, conceivable, theoretical, or hypothetical. From this the meaning of the word in its plain sense seems sufficiently clear. How are we to arrive at such actual value? The property in question is, as already stated, of varied character. A considerable portion is in structures such as the tracks overhead and underground system—property in situ, as it is called, available for use in the operation of the railway. One method by which property of this kind may be valued is approved in judicial decisions of our own courts, by the judicial committee of the privy council, and by the House of Lords. A considerable number of these cases were quoted.

"As to all plant in situ, such as track with substructures, overhead and underground distribution system, machinery and equipment fixed in place for use in the operation of the railway, it seems clear from the foregoing decisions and judicial utterances that an approved method of determining their value is cost of reproduction at the time as of which the valuation is to be made less a proper allowance for depreciation. Counsel for the company contended that the word 'depreciation' as used in these decisions means only physical wear and that obsolescence, unless so complete as to require or justify immediate removal of the item of plant under consideration, is not to be considered. We do not concur in this view. We understand the word 'depreciation' occurring in the decisions cited to include obsolescence and deterioration from whatever cause, and not as confined to physical wear and tear and to what might be called obsolescence as distinguished from obsolescence at the time of valuation. The fact and degree of obsolescence must be determined from the evidence upon the point having regard to good practice in railway administration and to the qualification of the above-recited subsec. 4 of sec. 4 of the statute.

"With respect to immovable plant in situ, this method of valuation seems the most practicable and convenient. In applying it, however, care must be taken to make full deduction for depreciation as defined. Take the case of a section of track which has become so worn that it should, having regard to good practice, be taken up and replaced by new construction. The cost of reproduction of the section in question might be quite large, but there would have to be deducted an amount for depreciation which would leave only scrap value remaining. In cases of parts or articles connected with plant in situ, which, although useful are not now being manufactured, value may be estimated by reference to prices of parts and articles which can be bought today, taking into account, of course, comparative utility, depreciation, and all other relevant considerations.

"The same method (reproduction cost less depreciation) may, we think, be useful also in valuing the rolling stock

as was done by the arbitrator in the Melbourne tramway case. In the case before the board, where so many of the cars taken over are of older type, it would, however, be most difficult to make the valuation solely by reference to cost of reproduction now, less depreciation. We have had placed before us, however, a great deal of evidence as to the character of this rolling stock, its original cost of construction, reproduction cost, physical deterioration, degrees of obsolescence, and as to alleged defects and advantages from the operating standpoint. All this evidence has been given its due weight in reaching conclusions as to the value of the rolling stock.

"The principle of reproduction cost, less depreciation, is also of service in valuing buildings, such as car-barns, car constructions and repair shops, substations and the plant and machinery which they contain. Care must be taken here also to make full deduction for depreciation (including obsolescence) and to take into account the evidence adduced bearing upon the question of the suitability of such buildings, plant, and machinery for the purposes for which they are being used, and generally, all factors bearing upon the matter of their usefulness and fair value, subject to the qualifications of the agreement and statute.

"With regard to tools, stores, and small chattels (fixed or unfixed) generally, it is not necessary to go to the trouble of considering what it would cost to reproduce them new and then deduct an amount for depreciation. We have had evidence as to the market value of such chattels or of others which would serve as well or better, and from such market value and comparison and other evidence relating to use, condition and extent of depreciation a conclusion as to value may be reached.

"As to land (other than land acquired from and now retaken by the city) it seems to us that it should be valued at its fair values as of the time of the arbitration. In estimating its fair value, we are, we think, entitled to consider, in addition to other relevant factors of value of individual parcels, their suitability (having regard to size and location) for street railway purposes. As to the land (including buildings) acquired from the city by the purchasers and particularly referred to in clause 7 of the conditions, the question is, what is its fair value without reference to its value for the purpose of operating a street railway. With regard to the former class of land, counsel for the company adduced evidence not only as to its present value for commercial purposes, but also as to its value for street railway purposes. To establish the combined value they brought forward testimony as to what it would cost to obtain property as suitable if the land in question had not been acquired and was not available for the city's use in the operation of the system. This testimony showed that in some instances a price two or three times the commercial market value of the land in question (considered without special reference to its suitability for railway purposes) would have to be paid in obtaining parcels of equal size and suitability. It does not appear to us that this is the true method of valuing this land. The land has been acquired by the company and the city is entitled to take it over as it is.

The real question is, what is its fair value having regard to all proper factors, including the factor of suitability for railway purposes.

"Speaking generally, we have had before us an immense amount of evidence dealing with the suitability, physical condition, depreciation, original cost of construction or purchase price, cost of reproduction and overhead costs connected with reproduction, of all the properties real and personal taken over by the city. All this evidence has been considered in its bearing upon the question of value. In this connection we have kept before us the language of the judgment of Chief Justice Meredith delivered Dec. 16, 1921, upon a case stated by the board for the opinion of the court upon a point as to the relevancy of certain evidence. He says: 'There is no law which limits arbitrators to one method of determining value; any and every method that may be helpful may be applied. Actual cost, reproduction cost and market value—direct or indirect—or actual value, may each and all give assistance; or only one may be useful, according to the nature and circumstances of the particular enquiry.' All evidence adduced by both sides has been carefully considered and given its due weight in its bearing upon the question of actual value at the time of the arbitration, having regard to the provisos and qualifications of the agreement and statute. The board has also had the advantage of an inspection of the land and buildings, railway, plant, and equipment of the company.

"With respect to the question of value 'to the city at the time of the arbitration' two special lines of evidence were adduced by counsel for the parties respectively which it is desirable should be dealt with. Counsel for the company placed in evidence figures showing what it would cost to reproduce the railway property over a period of three years prior to Sept. 1, 1921. This evidence was offered on the assumption that if the city had been obliged to construct a railway system it would have had to begin three years before to be in as good position as it was on Sept. 1, 1921, when it took over the railway without interruption of operation. As the cost of construction was higher on the average of this three-year period, the adoption of this theory would have materially added to the valuation of the board. We are unable to conclude that this would be a sound principle of valuation, nor do we know of any judicial decision in a purchase case which sustains it. It seems to us that, so far as the principle of reproduction cost, less depreciation is availed of, it must be reproduction cost as of 'the time of the arbitration.' We have therefore rejected this intention of the company. If we had adopted this method our valuation in respect of the property real and personal actually taken over by the city, and as to which there is no dispute as to right or liability to take would amount to \$11,088,000.

"In addition to adducing evidence to show reproduction cost less depreciation as of the time of taking over the property, counsel for the city introduced testimony of a theoretical character based upon comparative statistics as to prices of material and rates of wages prevailing before the war, and designed to show what it would have cost to reproduce the system had there been no

war, and had the trend of prices and wages in progress before the war continued down to the present time. This basis was called the 'Trend Basis.' The method is particularly described and referred to in Mr. Tilley's argument. With respect to new construction and replacements during and since the war, actual cost is taken into account and land is valued as of Sept. 1, 1921. It was contended that, under the terms of the agreement, value should be determined upon this 'trend basis' rather than by reference to the cost of reproduction (less depreciation) as of the time of the arbitration, because of the rise which, owing to the war and post-war conditions, has taken place in prices of material and in wages as compared with those of the pre-war period. In this connection the board has had before it statistical charts as to wages and prices covering periods before and after Sept. 1, 1921. We are unable to give weight to this contention, which, in effect, disregards entirely current prices and rates of wages. Value means value in lawful money of Canada at the time at which the valuation is made, not in lawful money of Canada as of an imaginary period. We are unable to find anything in the agreement or in judicial decisions sustaining this view. In our opinion it would be impossible to determine the 'actual value at the time of the arbitration' upon such a hypothetical basis, which has no reality in fact, and consequently seems opposed to the meaning 'actual' in the expression 'actual value.' We do not conceive that the valuation as of the time of the arbitration should have precise regard to the prices of labor or of material as of a specific date such as Sept. 1, 1921. Where the method of reproduction cost less depreciation is used or market prices are considered, regard should be had to the evidence as to construction cost and prices generally as of the time of the arbitration. In view of the stress laid by counsel for the city upon wartime costs and speculative prices, it may be pointed out that the war has been over for more than four years, and that since the date of taking over the railway prices of commodities and cost of labor have, according to the evidence, become fairly stabilized. If we had adopted the trend basis theory of valuation put forward by the city and made the deduction for depreciation which we think proper from reproduction cost estimated upon this basis, the amount of our valuation for the property actually taken over by the city would be \$7,180,000.

"An important question which arose during the hearing of evidence and on the argument, related to the items of overhead expenditure which might properly be included in estimating the cost of reproduction of the railway, and as to whether interest upon capital during construction should be taken into account. Counsel for the company contended for a very wide range of overhead expenditure, including engineering fees, legal expenses, expenses of organizing a company to construct and operate the railway, cost of raising capital, and other items under the general classification 'Construction contingencies.' They also claimed that a substantial by reason of the property and plant having been in running condition with a completely organized staff, which

immediately entered the service of the city or its agent, the Toronto Transportation Commission, with the result that no interruption occurred in street railway service upon the taking over of the railway. As to this latter item, while it was no doubt a great advantage to the city to be enabled to take over a well-trained organization, the benefit it derived in this regard does not, in our view, come within the meaning of the expression 'actual and tangible property,' which alone forms the subject matter of this arbitration.

"With respect, however, to the items of overhead expenditure in connection with the method of reproduction cost valuation, it seems clear under the decisions that allowance of certain items should be made, subject to proper abatement, having regard to the age and degree of depreciation of the property and plant to which they severally relate. The Oldham case deals specially with items of this character. It was held by the divisional court in that case that there must be allowed (1) remuneration of the engineer who constructed the tramway, subject to depreciation, and (2) interest on capital during construction, subject or not to depreciation, according as the capital was spent on depreciating items, for example, rails, or non-depreciating, for example, excavation, but that (3) the cost of raising capital must be disallowed. In view of the evidence and the decisions, we have felt justified (in considering reproduction cost) in taking into account engineers' remuneration (where it is applicable), subject of course to proper depreciation. The amount which we have taken into account under this head is \$375,000. We have thought it also proper to make a reasonable allowance for interest during construction of the several parts of the system subject also to proper depreciation. The amount which we have allowed for this item is \$525,000.

"We have allowed nothing for the preliminary expenses of organizing a company for the purpose of constructing and operating a railway, nor for the cost of raising capital, that is for brokerage, discount, and other charges connected with the issue of securities to provide capital to construct the railway. Witnesses for the company placed discount as high as 10% which (on an assumed financing of \$27,000,000 or \$30,000,000) ran up to the very high figure of \$2,673,000 (Mr. Morrow) and \$3,000,000 (Mr. Mackenzie) representing the discount upon 7% bonds issued upon an 8% basis. While the testimony of these witnesses is entirely reliable as to the cost of raising capital (discount and underwriting), such cost is not, in our view, legally allowable in this case. Securities may be sold at a discount, at par, or at a premium, depending upon the rate of interest, which they bear as compared with the current yield-rates upon securities of like character. The evidence of these witnesses and of Mr. Ross for the city as to interest rates prevailing about the time of the taking-over of the railway is of value in its bearing upon the question of allowance for interest during construction.

"We have also excluded from consideration such items as contingencies and omissions, administration, organization and legal expenses, and cost of placing the physical property in operation appearing in Mr. Drum's appraisal

and like items in that of other witnesses for the railway company. These embrace allowances for organization built up over a series of years, for business system, for going plant value, etc. While items of this character are frequently taken into account for rate-making purposes they must be regarded as so-called intangibles and as not capable of being included within the meaning of the words 'actual and tangible property' in the agreement and statute. In arriving at fair cost of construction all ordinary construction contingencies have received such consideration, as seemed to us proper.

"Among the items which counsel for the company contended should be included in the valuation of the track were payments made by the company towards the cost of construction of a subway on Avenue Road under the C.P.R. tracks, and of a bridge over the steam railways on Queen Street East. These payments were made by the company in pursuance of orders of the Board of Railway Commissioners, the object being the elimination of dangerous level crossings and consequent protection and convenience of the public. It does not appear to us that these payments constitute actual and tangible property within the meaning of the statute, and we have been unable to agree with the argument put forward by counsel for the company that these payments became, so to speak, attached to or inherent in the cost of construction of the tracks of the company carried through the subway and over the bridge, respectively. By mandatory orders the Board of Railway Commissioners assessed these payments against the company and we cannot see that they may be taken into consideration by the board in estimating the cost of reproduction of the railway track. If we had taken them into account in connection with such cost of reproduction, then our valuation of the property described in schedule A to the award would have been increased by \$125,000 representing these payments properly depreciated.

"The question as to whether it is within the power of the board to allow interest at the legal rate upon the amount of the award from the time the railway was taken over by the city until the date of the award was argued at length by counsel for the parties. While we are not free of doubt as to the jurisdiction of the board in this respect we are of opinion that we should allow such interest, as the city has had possession of the railway since Aug. 31, 1921, and the company has not received payment. If we are mistaken as to our jurisdiction to deal with this item the court will be able to make such order as may be just.

"Having regard to all the considerations hereinbefore mentioned, we find the value of the property, plant, equipment, and works actually taken over by the city on Sept. 1st, 1921, for which as to the liability of the city to pay there is no dispute between the parties.

"With respect to the various items of property and plant about which there is a dispute between the parties as to the liability of the city to take them over under the terms of the agreement and the statute relating thereto, and which are set out in detail in schedule B to the award, we make the following preliminary observations:—The liability of the city to take over any one of these disputed items of property depends upon

the question whether it is necessary to be used in connection with the working of the railway. It was admitted by counsel for the city and is clear, upon the authorities cited, that the word 'necessary' is not of equivalent meaning with indispensable. Counsel for the company argued that it was, under legal decisions, the equivalent of useful or convenient. It seems to us that if property, plant, or equipment was, in accordance with good railway practice in use in the operation of the railway, and if such use promoted efficiency or economy of operation, we may regard such property, plant, or equipment as 'necessary to be used in connection with the 'working of the railway' within meaning of the agreement.

"The city bylaw, passed on June 1, 1920, and notified to the railway company on June 26, 1920, covered all the real and personal property of the Toronto Railway Company necessary to be used in connection with the working of the railways which the corporation is entitled to take over, under the provisions of the act of incorporation, agreement and conditions therein mentioned. After serving this notice of intention, the city became entitled, and in our opinion bound, to take over, and the company became compellable to deliver, all the real and personal property necessary to be used in connection with the working of the railway. The obligations to take and deliver were reciprocal and the quantity of property involved must depend, as stated above, upon the question of fact as to necessity for the purpose of working the railway.

Appeal From the Award.

The city having decided to appeal against the award filed its reasons as follows:—"It is excessive in amount; it is contrary to law and evidence and the weight of evidence; it includes matters not within the arbitrators' jurisdiction; it is erroneous for mistakes of fact appearing on the face of the award and in the reasons for award delivered therewith. It is erroneous for mistakes in the principles of valuation adopted by the arbitrators appearing on the face of the award and in the reason for award. It is erroneous on the ground of irregularity appearing in the evidence and proceedings and on the face of the award and in the reasons for award delivered herewith. It is erroneous because property is included which is not necessary to be used in connection with the working of the railway. It is erroneous because the arbitrators took into account evidence of certain elements of value which should not have been considered, particularly with regard to current prices of labor and material and government taxes and exchange."

Mainly About Electric Railway People.

W. J. Curle, General Superintendent, Chatham, Wallaceburg and Lake Erie Ry., Chatham, Ont., has resigned.

James Grace, Secretary, Toronto Ry. Co., and Mrs. Grace, are spending a month in Florida.

W. F. Graves, Chief Engineer, Montreal Tramways Co., having resigned, R. M. Hannaford, Assistant Chief Engineer, is acting as Chief Engineer.

Lt. Col. J. E. Hutcheson, General Manager Montreal Tramways Co., left Montreal at the end of January for a trip,

expecting to return about the end of February.

R. Keemle, heretofore Assistant to President, Chatham, Wallaceburg and Lake Erie Ry., Chatham, Ont., has also been appointed Manager.

A. W. McLimont, Vice President, Winnipeg Electric Ry., was to have addressed the Brandon, Man., Board of Trade's annual meeting on power development matters, Jan. 30, but the meeting was postponed owing to his inability to be present.

Walter R. McRae, Superintendent of Rolling Stock and Shops, Toronto Transportation Commission, has been elected President of the Engineer's Club, Toronto.

D. M. Morrison, engineer, London & Port Stanley Ry., London, Ont., is reported to have resigned, and it is said that the London Railway Commission will not appoint a successor.

E. B. Reesor, of New York, President, Moncton Tramways, Electricity & Gas Co., was in Moncton, N.B., Feb. 7, to discuss matters affecting the company's interests with the city council.

W. G. Ross, formerly General Manager, and still a director, Montreal Tramways Co., and Mrs. Ross, left Montreal Feb. 25 for a visit to Augusta, Georgia.

M. C. Smith, heretofore Superintendent Lighting Department, Nova Scotia Tramways and Power Co., Halifax, N.S., has been appointed Superintendent of Tramway and Power Departments, and in addition to his former duties, will perform those heretofore done by Ira P. McNab, Superintendent, Tramways Department, whose resignation was announced in our last issue.

G. H. Smithers, formerly a Toronto Ry. director, has been elected a Detroit United Rys. director.

M. W. Wales has been appointed Engineer of Way and Structures, Winnipeg Electric Ry., vice S. Wilkins.

Suit for Royalties on Toronto Transportation Commission Cars.—Canadian Railway and Marine World for Nov. 1922, gave particulars of an action against Canadian Brill Co., by Peter Witt, of Cleveland, Ohio, and C. S. Wright of Toronto, claiming \$2,500 royalties on 50 Toronto Transportation Commission cars built by defendants. Plaintiffs secured an order giving them possession of Canadian Brill Co.'s plant at Preston, Ont., and the Canadian Brill Co. then paid the claim into court. A hearing of the matter was fixed for the latter part of January or early in February, but we are advised that Canadian Brill Co. has paid plaintiffs the money claimed, both parties paying their own costs. Before the Brill Co. decided on this action, it had applied to the Master in Chambers for permission to enter a suit for \$5,000 damages against Witt and Wright on account of their action in taking measures against it in the bankruptcy court, and such permission was granted. This however, was reversed by Mr. Justice Middleton, and consequent on this the settlement mentioned above was arrived at.

Two-thirds of the mileage of all electric railway extensions laid in Canada last year was the work of Toronto's Transportation Commission within the City of Toronto. Probably nowhere else in the world has a street railway been rehabilitated and extended with the same speed and skill which have marked the achievements of the T.T.C. — Toronto Star.

The Toronto Suburban Railway's Proposed Sale.

The following questions were asked in the House of Commons Feb. 13, by T. L. Church, North Toronto, the answers being given by acting Minister of Railways G. P. Graham.

Q. 1. "What legal agreements and options have been made by the Government from time to time to date for the sale in whole or part of the Toronto Suburban Ry. between Guelph and Toronto to the Hydro Electric Power Commission of Ontario, and why were these agreements for the whole road not carried out and acted on in view of this road being an inactive asset of the Canadian National?" Q. 2. "No legal agreement or option was given."

Q. 2. "Is it the Government's intention to enable the City of Toronto to acquire the part in the city limits in accordance with an agreement made between the city and the Toronto Suburban Co. validated by the Ontario Legislature many years ago, by which the city, at the expiration of the company's franchise, which expired over a year ago, could acquire this road within the city limits by arbitration?" A. "The question is not one for the Government, but for the management of the Toronto Suburban Ry."

Q. 3. "Was any agreement prepared for sale of the part within the city limits and on what terms, and is the announcement correct of Gerard Ruel, Vice President of the National Railways, in a letter to the Toronto Board of Control in January last that such an agreement existed for sale of part? If so, with whom was it made?" A. "No agreement has been prepared for the sale of the lines within the city. The agreement which Mr. Ruel referred to was an operating agreement."

Q. 4. "Under what terms and conditions of purchase of this road by the Government a few years ago, and its absorption by the National Railways System, can the Government sell part and not all of this railway without the consent of the bond holders?" A. "The Government has not purchased this road. The stock was merely acquired by the Canadian Northern Realities Ltd. The question of sale is one for the management of the railways."

Q. 5. "Why was the agreement and options legally given for the sale of the whole road to the Hydro Electric Power Commission of Ontario not carried out, and has the policy of the old board of directors of the National Railways to dispose of this whole road which never paid, been abandoned by the present directors, in view of a favorable vote of the ratepayers of Toronto to sanction such purchase agreement for the whole road?" A. "See answer to question 1."

The Toronto City Council on Feb. 5, appointed a special committee to negotiate with the Dominion Government, and the Canadian National Rys. management, for the purchase of the Toronto Suburban Ry.'s lines within the city. The company's predecessors in title, built certain electric railway lines in the old Town of Toronto Jct., and York Tp., under franchise agreements. These areas have been incorporated in the City of Toronto for some years, with the exception of a strip in the York Tp., through which the Dundas St. line runs to Lambton. The City Council gave the necessary notice of its intention to take over these lines under the

terms of the agreement, prior to their expiration in Sept. 1921. Since that time the matter has been complicated by the plans discussed for the purchase by the city of all the lines owned by the Toronto Suburban Ry., and the operation of those outside the city by the Hydro-Electric Power Commission of Ontario. A bylaw providing for this purchase was voted upon by the ratepayers Jan. 2, 1922, and carried by a 16,087 to 13,580. The agreement provided for the purchase of the lines by taking over \$2,628,000 of outstanding bonds; paying \$202,000 in cash for the lines in the city, and raising \$150,000 for betterments within the city. No definite action was taken upon this vote by the city council, in fact the bylaw was only read a third time towards the end of 1922. Shortly afterwards the matter was taken up with Sir Henry Thornton, President, Canadian National Rys., who declined to sign an agreement for the sale of the lines, until he had looked thoroughly into the whole situation and had ascertained whether they should be retained or not. This question is being looked into by a committee which Sir Henry has appointed to look into the whole question of electrification in the Toronto district, and which consists of R. A. C. Henry, C. E., of the Railways and Canals Department; C. A. Hayes, Vice President, Traffic, Canadian National Rys., and C. G. Bowker, Operating Manager, Grand Trunk Ry. Mr. Henry met the city council's special committee in Toronto on Feb. 21, to discuss the question of the sale of the lines within the city.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies:—

	Dec. 1922	Dec. 1921	6 mos. to Dec. 31, 1922	6 mos. to Dec. 31, 1921
Gross	\$923,922	\$940,113	\$5,190,572	\$5,192,915
Expen's	628,137	653,566	3,657,997	3,819,533
Net	295,785	286,547	1,532,575	1,373,382

Calgary Municipal Ry.—Receipts for January, \$76,930, against \$78,907 for Jan. 1922.

Cape Breton Electric Co.—

	Dec. 1922	Dec. 1921	12 mos. to Dec. 31, 1922	12 mos. to Dec. 31, 1921
Gross	\$64,962	\$63,748	\$626,238	\$694,596
Ex. & Taxes	54,532	52,442	552,684	583,209
Net	10,430	11,306	73,554	111,387
Interest	5,603	5,596	67,196	68,768
Surplus	4,827	5,710	6,358	42,619

Dominion Power & Transmission Co.—The report for the calendar year 1922 shows gross earnings, \$3,830,558.60; operating expenses, \$2,810,923.86; bond and other interest, \$442,883.22; New York exchange, \$24,600.45; leaving surplus earnings of \$552,151.07. Profit and loss account stands at \$1,624,073.70. At the annual meeting in Hamilton, Feb. 19, the old directors were re-elected as follows:—J. R. Moodie, President; C. A. Birge, Vice President; James Dixon, Treasurer; W. C. Hawkins, Managing Director and Secretary; John Dickenson, Sir John Gibson, Lloyd Harris, Robert Hobson, C. E. Neill, and W. E. Phin. E. P. Coleman is General Manager.

Hamilton St. Ry.—The City Treasurer is reported to have received from the company \$23,226.09 for percentage and mileage for the three months ended Dec. 31, 1922, making a total of \$87,974.06

for the year against \$87,929.70 for 1921.

Montreal Tramways Co.—A press report states that the company has paid the City Treasurer on account of rental and arrears up to Dec. 31, 1922, \$1,158,126.49, of which \$500,000 was the rental for 1922.

Regina Municipal Ry.—Passenger receipts for January, \$34,470; passengers carried 561,999; against \$32,306 passenger receipts, and 537,870 passengers carried in Jan. 1922. Operating profit for January approximated \$2,500, against approximately \$1,900 for Jan. 1922. During 1922, there was a monthly operating surplus in January, February, November and December, deficits being shown in the other months.

Winnipeg Electric Ry.—An issue of \$3,250,000 20-year 6% general mortgage and collateral trust gold bonds was placed on the market towards the end of February, at 95. The proceeds of this issue are to be used to retire current indebtedness created for capital expenditures, and for general corporate purposes.

Winnipeg Electric Ry. Co. paid the city \$174,954.20 Feb. 9, being 5% on the company's railway lines revenues within the city; and the tax of \$20 a car or motor bus in service during 1922. Since 1902, when these taxes were first levied, the company has paid the city \$1,904,905.14.

	Dec. 1922	Dec. 1921	12 mos. to Dec. 31, 1922	12 mos. to Dec. 31, 1921
Gross	\$524,338	\$507,447	\$5,443,748	\$5,539,116
Expenses	333,789	340,459	3,901,175	4,072,158
Net	190,549	166,988	1,542,573	1,466,958
Surplus	113,499	78,495	734,415	727,915

Winnipeg Electric Railway Franchise.

The Winnipeg Electric Ry. Co.'s franchise agreement, which was negotiated by the Winnipeg City Council's public safety committee last year, but which did not reach the final reading stage, has been discussed in city council circles since the election of S. J. Farmer, independent labor candidate, as mayor, on a platform for submitting the agreement to a vote of the people. Several meetings were held, and a new bylaw was prepared to approve the agreement. This was read a first time, Feb. 12, and notice was given of an amendment to provide for its submission to a vote of qualified ratepayers.

A press report states that on Feb. 13, the Winnipeg Electric Ry. Co. wrote the City Clerk, stating that, on the advice of its bankers, and due to conditions, it did not wish to deal with the extension of the franchise beyond 1927, and that it would arrange to settle amounts outstanding and due to the city. It is stated that company owes the city approximately \$912,000, including taxes, paving charges, property taxes, percentages and penalties.

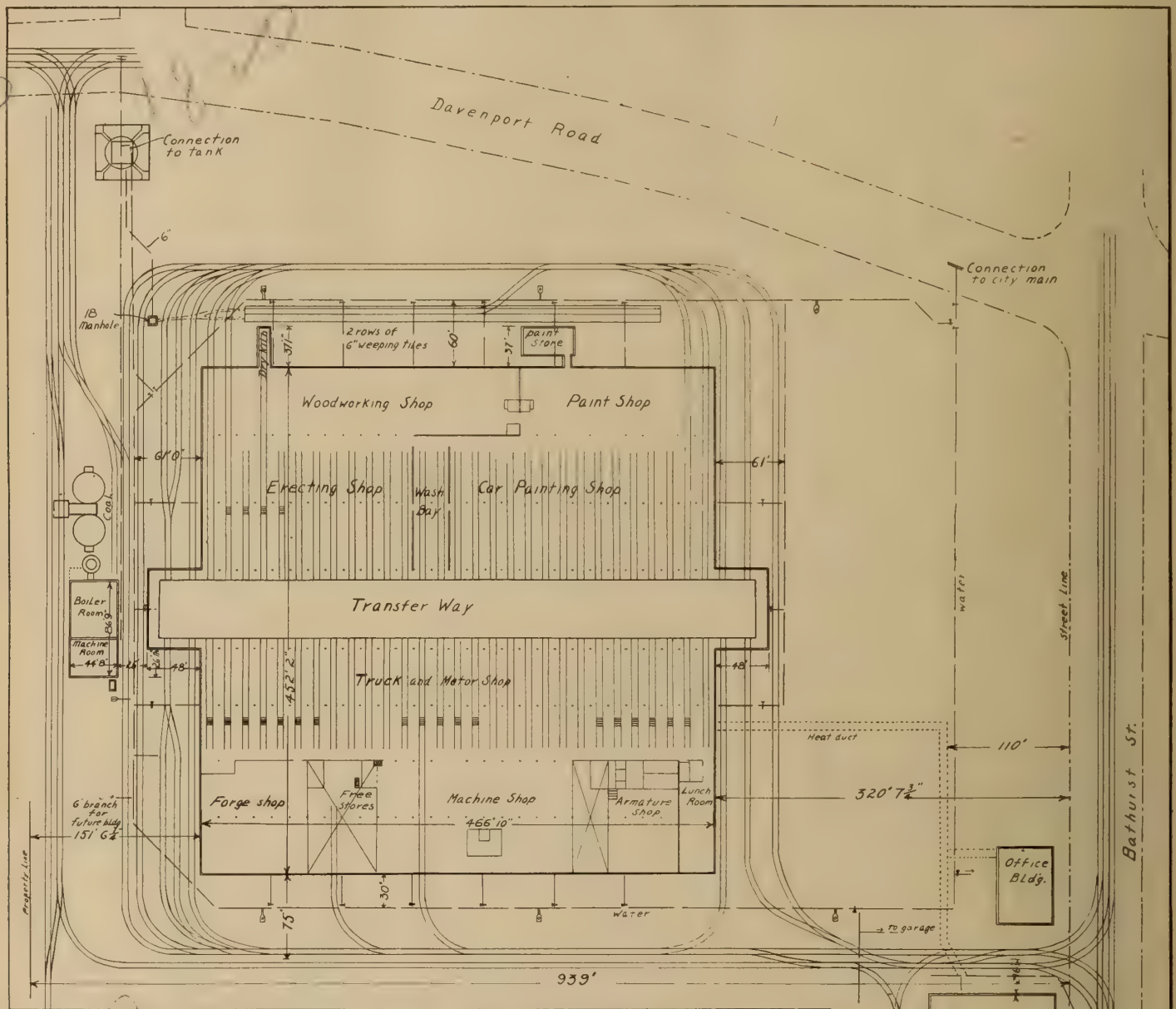
Toronto Transportation Commission Cars.—As stated in Canadian Railway and Marine World for February, pg. 85, the Canadian Car and Foundry Co. had delivered the 50 motor cars ordered by the Commission. We were advised on Feb. 21, 20 trailers, out of the 100 ordered at the same time as the motor cars, had been delivered, and that delivery of the remaining 80 trailers was expected during the next three weeks. Detailed descriptions of both motor cars and trailers were given in Canadian Railway and Marine World for Sept., 1922.

Repair Shops and Stores Building, Toronto Transportation Commission.

As stated in Canadian Railway and Marine World for February, the Toronto Transportation Commission awarded contracts for the construction of large repair shops, together with auxiliary build-

cast, and will be equipped with sawtooth monitors, with fixed sash on one side, arranged to give north light. This arrangement, together with ample window space on all sides, will afford good natural

each group of tracks with pits, the tracks being elevated on structural steel columns, and the floor at track level being of reinforced concrete, supported on structural steel sections. The pits will be



Repair Shops and Stores Building, Toronto Transportation Commission.

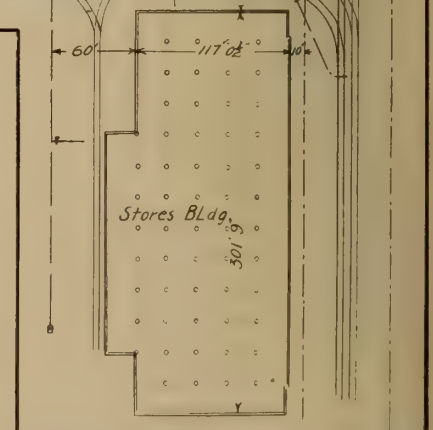
ings, for a large stores building, and for some of the chief equipment for the repair shop and auxiliary buildings. The buildings will be erected near the intersection of Bathurst St. and Davenport Road, on property obtained for the purpose some time ago, and construction has been started. The accompanying plan shows the location of the building in relation to Bathurst St. and Davenport Road, the arrangement of the buildings in relation to each other, the track layout, the distribution of water mains for the fire protective system, and the division of the main shop building into machine shop, truck and motor shop, forge shop, and woodworking, paint and other shops.

The main repair shop will be 466 ft. 10 in. x 452 ft. 2 in., and will be a one story brick building, with structural steel frame, steel sash and concrete foundations. It will have a gypsum roof, pre-

lighting conditions. Mastic flooring will be provided in the erecting shop, truck and motor shop, lunch room and locker room, and wood block flooring in the machine shop, armature shop and free stores room, the remainder of the flooring to be of cement finish, with the exception of the woodworking shop, where maple flooring will be installed. A transfer table will extend all the way across the shop, and will be connected to the outside trackage system by two through tracks at each end. The repair tracks will be arranged transversely to the transfer table runway, the repair tracks to be equipped with pits being indicated on the plan by the groups of short horizontal lines drawn across each track having a pit. The pits will be arranged in the same manner as at the Commission's new Eglinton carhouse, described in a recent number of Canadian Railway and Marine World, i.e., they will be continuous across

finished in concrete. All machinery and equipment to be installed will be of thoroughly modern design.

The boiler house, 86 3/4 ft. x 44 ft. 8 in., will be of the same type of construction as the main shop building, and will be



equipped with 4 large boilers. It will be divided into boiler room and machine room, in which the boiler feed pumps, air compressors and similar equipment will be located. The boilers will be fired by automatic stokers, and the coal supply will be handled by an overhead conveyor into a bunker feeding the stokers. Heat will be supplied from the boiler house to the entire plant; the main shop building, with the exception of the paint shop, will be heated by hot air, the paint shop to be heated by radiators. Fans will be located at strategic points throughout the main shop building, forcing air through vento-radiator coils located in the fan-rooms, and the steam to supply these coils will be piped from the boiler house through ducts located to give the greatest economy consistent with the best results. The boiler house stack will be of brick, radial type, 150 ft. high and 6 ft. inside diameter at the top.

The coal and ash handling plant, adjacent to the boiler house, and served by both a standard gauge steam railway spur, and the Commission's 4 ft. 10% in. gauge tracks, will have as the chief units 2 cylindrical concrete tanks, each of 500 ton capacity. The coal will be unloaded from steam railway cars into a pit below the tracks and elevated by bucket conveyors, electrically driven, and a belt conveyor will serve the boiler house from storage. In addition to the supply for the boiler house, coal for the street cars will be stored here, and the coaling plant will be fitted with hoppers, so that the flat cars for distributing coal to the various car houses throughout the city will be supplied by gravity. Ash handling equipment will be of the most modern type, the ashes being elevated from a pit by bucket hoist and discharged through a chute to a cinder car outside the building.

The fire protective system will be a feature. As shown on the plan, a system of piping, with 2 connections to the city water mains, will encircle the main shop building, and will have branches to all other buildings, supplying the hydrants and sprinkler system. In addition, a 100,000 gall. steel tank, set on a 100 ft. steel tower, will be built to provide for an emergency water supply in case of failure of the supply from the city mains. The 6 in. pipe from the tower will be tied in with the system, so that the tower may supply water to any point desired, while the sprinkler system in the shop and stores building, the strategic location of hydrants, and a comprehensive system of control valves will, it is felt, provide an entirely adequate protection against fire loss.

The stores building will be 117 x 302 ft., and present plans call for the construction of a 3 story and basement building, although provision is to be made to increase the height to 8 stories when necessary. It will have brick walls, on concrete foundations, and will be equipped with steel sash. The roof will be of concrete, reinforced and arranged so that it may become the floor of the fourth story without material alteration. On the Bathurst St. side, the building will have Queenston limestone to the first floor windows, and the trim above that will be of artificial stone. The basement will be the full size of the building. One passenger and 2 freight elevators will be installed. In addition to being the central stores depot for the Transportation Commission, the new stores building will also serve the Toronto Hydro Electric Commission. The building will be heated by steam, piped from the boiler house

through the shop building and thence through the duct shown.

The office building, for which designs are not completed, will be occupied by the Commission's Superintendent of Rolling Stock and Shops and his staff, and will also house the employment office staff. A complete first aid room will also be fitted up therein.

In a bulletin addressed to Toronto citizens, recently, the Commission said: "The Commission decided to build these shops only after experience had clearly shown it was absolutely necessary to abandon the old shops, and construct new ones, to secure efficient and economical car repair facilities. Facilities in the existing shops are totally inadequate for efficient handling of the repair work of the present day street car system. The old shops are fire traps. There is danger of the system being paralyzed, through fire destroying a number of cars, and removing the only available repair facilities. The old shops afford no facilities for repairs to steel car bodies, which have been adopted as standard equipment. Work can be done in the old shops only in a most inefficient manner, due to ill planned layout and lack of centralization, the buildings not being all in one place or even one story structures. The new shops will be located in almost the exact geographical center of the city, saving much time and expense in the moving of cars from barns to shops. This means a great reduction each year in the length of time cars are out of revenue service. Finally, the economies effected by means of the new shops, through more efficient handling of repairs, will more than provide for all carrying charges, making the new shops an asset instead of a liability."

Contracts have been awarded as follows: Construction of repair shop building, stores building and boiler house, John V. Gray Construction Co., Toronto; boilers, Engineering & Machine Works, St. Catharines, Ont.; boiler settings, J.H. Wenting, Toronto; feed pumps, J.T. Hepburn, Toronto; fans and fan motors, Canadian Blower & Forge Co., Toronto; stokers, Jones Underfeed Stoker Co. The total amount involved in all contracts is about \$1,335,000.

The buildings have been designed by the Commission's building department, under the general supervision of W. E. P. Duncan, Engineer of Structures, with J. B. Carswell, Consulting Engineer, and with A. T. Spencer, Engineer of Way in charge of track layout, and W. R. McRae, Superintendent of Rolling Stock and Shops, in charge of repair shop layout. Designs for the plumbing, heating and lighting installations were made by Ewart, Jacob, Armer & Byam, consulting engineers, Toronto.

Interference with Street Car Traffic.—The Toronto Transportation Commission has issued an advertisement, stating that it "earnestly seeks the co-operation of all vehicle drivers in preventing street car delays and accidents. Analysis of one week's street car delays showed 75% were due to interference by vehicles—mainly from vehicles stalled or broken down while on the track allowance. In addition to the actual delays, the whole service was slowed up by vehicles on the tracks. Drivers who 'camp' on the track allowance not only hinder the proper operation of street cars, but run grave risks. Greasy rail conditions often make it almost impossible to bring street cars to an instantaneous stop. Remember! In an emergency a street car cannot dodge."

Electric Railway Passenger Fares.

Calgary Municipal Ry.—The Calgary Alta., City Council authorized the putting on sale on and after Feb. 10 of 5 tickets for 25c. and 21 tickets for \$1.

Hamilton St. Ry.—At the Dominion Power and Transmission Co.'s annual meeting in Hamilton, Ont., recently, President J. R. Moodie said:—"In March, with the city council's permission the Hamilton St. Ry. began charging a straight 5c fare. The effect of this change was no doubt beneficial, as compared with what might have taken place. This rate, under present conditions, apparently will not suffice. This is only saying again what has been decided for many street railways in this region, indeed for the whole continent. Our neighboring cities are mostly at 6 or 7 cents, and it would be surprising to find any peculiarities in Hamilton that would enable us to furnish cheaper transportation than most other cities in its class, and it is unreasonable to look for it."

Hamilton and Dundas St. Ry.—We are officially advised that as a result of negotiations between the Dominion Power and Transmission Co.'s officials and Dundas Town Council, the company decided not to discontinue operating the line after Jan. 31. The fares in force up to that date, as authorized by bylaw, were as follows:—Between Hamilton and Dundas, 15c single, 25c return; 20 single trip books, unlimited, \$2; workmen's 12 trip tickets, limited to 2 weeks, 75c. Between Hamilton and West Hamilton, 10c single, 15c return; 20 single trip books, unlimited, \$1; workmen's 12 trip tickets limited to 2 weeks, 50c; local cash fare 5c, for any distance not exceeding 3 miles; city tickets, within Hamilton limits, 6 for 25c. The workmen's tickets between Hamilton and Dundas were provided for in the original bylaw under which the line was electrified in 1897, and the issue of workmen's tickets between Hamilton and West Hamilton at a proportionate rate was a voluntary act by the company. The 5c cash fare within the 3 mile limit is in accordance with the Railway Act; and the sale of 6 tickets for 25c within the City of Hamilton was provided for in the city bylaw when the line was electrified.

The new arrangement entered into between the company and the Dundas Council is in fact a cancellation of all the workmen's tickets, and a provision for a 10 trip ticket between Hamilton and Dundas, unlimited, for \$1. The arrangement is to be in force for 6 months, at the end of which the company will decide whether or not it will be wise to continue operating the line.

Sarnia St. Ry.—Arrangements are reported to have been made with the company, under which pupils from Point Edward, Ont., attending the Sarnia Collegiate, will be enabled to use their school tickets on the cars at the noon hour, instead of only in the morning and evening when going to and from school.

St. Thomas Municipal Ry.—St. Thomas, Ont., City Council committee has recommended recently that the council authorize a return to the sale of 5 street car tickets for 25c, in order to endeavor to increase the traffic. Some months ago the fare was increased to 7c cash, with 4 tickets for 25c. This change is reported to have resulted in a decrease of patronage, although it is said that the operat-

ing deficit for 1922 was \$8,352 against \$20,425 for 1921.

Toronto Transportation Commission.—The Toronto Star says: "Detroit's municipal car lines, with their 5c fare, are in bad shape financially. Toronto's, with a fare averaging only a little over 6c, are on a sound financial basis. Toronto would like a 5c fare, but not at the expense of the system's financial soundness."

What Will Toronto Railway Company Shareholders Get?

Sir William Mackenzie, President, issued the following circular to shareholders on Feb. 6:—"Your directors by circular sent to shareholders on Sept. 22, 1921, outlined the proposals for the acquisition by The Hydro-Electric Power Commission of Ontario, of the company's power and radial interests. These proposals, which were approved in principle by the shareholders on Sept. 30, 1922, were subsequently embodied in an agreement, the terms of which have been carried out. The circular referred to, stated that, after making provision, so far as could then be foreseen, for all of the liabilities of the railway company proper and of its subsidiary companies, there would be a balance of \$1,008,823, which, added to the amount of the arbitrators' award fixing the price to be paid by the city for the company's street railway system, would represent approximately the capital value of the company's outstanding shares. At the time the prediction was made, your directors could not foresee the future difficulties to be overcome, which resulted in over a year's further negotiation with The Hydro-Electric Power Commission, involving heavy additional expense in connection with the sale of the power and radial interests, and, in order to bring about a successful termination, the abandonment of certain claims which it had been hoped might have been established. These unforeseen contingencies, together with the very prolonged arbitration in connection with the taking over by the city of your company's street railway system, extending over the past 17 months, entailing heavy additional expense which no one could reasonably anticipate, have caused the estimated surplus mentioned above to be seriously diminished. Notwithstanding this your directors are glad to be able to state that there will still be an available surplus of about \$1,000,000 to be added to the amount of the street railway award, as the sale of property owned by the company other than that taken over by the city under the award will make good the shrinkage in the estimate referred to.

The arbitrators have delivered their award for \$11,188,500, with interest at 5% from Sept. 1, 1921. It must be borne in mind, however, that the award is not necessarily final; an appeal may be taken from it by one or the other of the interested parties, or by both, and in the result it might be either increased or decreased. Your directors cannot, therefore, advise what the value of the company's capital stock will be until the award is finally determined and the company's remaining properties disposed of, but if the award stands, and no further unforeseen contingencies arise, it should be worth par and perhaps better. While, as indicated in the circular of Sept. 22, 1921, a cash distribution by way of return of capital to as large an amount as possible will be made to the shareholders immediate-

ly after payment of the award, they should remember that \$4,000,000 or roughly \$33 for each \$100 share, represented by bonds of the city, must remain deposited in the hands of a trustee until after July 1, 1924, by reason of the outstanding guarantee by your company of \$4,103,200 of bonds of the Toronto Power Co., due on that date. Payment of these bonds was assumed by the Hydro Commission as part of the sale agreement, but until they are actually paid the deposit referred to must remain, after which final distribution to the shareholders will be made as quickly as possible. As soon as there is any additional information available, it will be communicated to the shareholders."

Hydro Electric Railways, Toronto & York District, Improvements.

As stated in Canadian Railway and Marine World for February, the Toronto Board of Control has authorized the raising of \$600,000 to be paid to the Hydro Electric Power Commission of Ontario for expenditures on improvements on the Metropolitan, Scarborough and Mimico Divisions of the Hydro Electric Railways, Toronto and York District, formerly corresponding divisions of the Toronto and York Radial Ry. Of this sum, approximately \$250,000 will be required for the new terminal at the north city limits, details of which were given in Canadian Railway and Marine World for February pg. 85. The remainder will be for additions to power house equipment, trackage facilities, and possibly cars, for the three divisions, but at the time of writing (Feb. 20) details are not available.

As stated in our February issue, a press report credited Sir Adam Beck with saying that the following improvements were under consideration for the Metropolitan Division, which runs along Yonge St. from the North Toronto city limits to Mulock's Corners; a 100 ft. highway from Toronto to Mulock's Corners; double track railway line with safety zones for passengers and parcel freight; two-way traffic road surface; sidewalks for pedestrians; high level steel viaduct at York Mills; large cars of modern type to be run on limited schedule during rush hours; commutation fares; mail boxes on through cars. We are officially advised that this ambitious programme was initiated by the Yonge St. Improvement Association, made up of several ratepayers' associations having in their membership people living along Yonge St. from Toronto to Newmarket. A deputation from the association waited on the Ontario Minister of Highways, on Feb. 7, when the plans were laid before him and consideration was promised. Sir Adam Beck has stated that if the plans for north and southbound vehicular traffic are adopted, with a double track railway line between them, he would be favorable to having the Metropolitan Division's line rebuilt in accordance with these plans. In view of the fact that the Ontario Highways Department has invited tenders for the surfacing of several miles of Yonge St., it would appear that some action on the improvement association's plans must be taken soon, for it would be very inadvisable to surface the road as a single two-way one with the radial track at one side, and then tear it up after to make two roadways

with a double track railway line between. The improvements to be undertaken on the Metropolitan Division must depend on the disposition made of the plans concerning Yonge St.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—A press report states that the B. C. Government is negotiating with the company for the construction of a line to the B. C. University, Vancouver.

The Chairman of the Victoria City Council works committee and the City Engineer had a conference with A. T. Goward, local Manager, B. C. E. R. Co., Victoria, recently to ascertain the company's plans with regard to laying tracks over the new Johnson St. bridge. The city is anxious to have the tracks laid at once in order that the paving can be fully completed, but Mr. Goward was unable to give any assurance that the work will be done this year. It is stated that in the event of the company operating a line over the bridge, it will have to pay the city \$50,000 towards the cost of the bridge. (Jan. page 36.)

Chatham, Wallaceburg and Lake Erie Ry.—We are officially advised that the company has bought 5,000 ties from C. and J. Hadley.

Edmonton Radial Ry.—We are officially advised that while the Edmonton, Alta., City Council has made large provision in this year's estimates for maintenance of track and equipment, it is not intended to buy any new rails or equipment, or to make any further extensions of track. The existing track is not in very good condition and the greater part of the appropriation will be expended on new ties and ballast. (Feb., pg. 81.)

Fort William Municipal Ry.—The Board of Railway Commissioners has authorized the city to built its line across the Grand Trunk Pacific Ry. tracks on Montreal St., Fort William, Ont.

Hamilton Radial Ry.—The Board of Railway Commissioners was reported on Feb. 14, to have reserved their decision on the City of Hamilton's application for the removal of the company's tracks from Birch Ave. (July, 1922, pg. 375.)

Hamilton St. Ry.—The city council works committee has approved the proposal to build an extension to the junction of Sterling and King streets, in connection with the opening up of the McKittrick building estates. The matter is under consideration by the special street railway committee in connection with some other proposals for improving the lines in the west end. (Feb., page 81.)

New Brunswick Power Co.—A press report states that the company proposes to rebuild its electric railway lines on Dock, Mill and Main Streets, St. John. (Nov., 1922, pg. 581.)

Quebec Ry., Light & Power Co.—The Board of Railway Commissioners has authorized the installation of safety appliances at the crossing of the Canadian National Rys., on Canardiere Road, Quebec, to enable the Q. R., L. & P. Co's cars to cross the tracks and run over the Beauport Road extension. (Jan., pg. 36.)

Three Rivers Traction Co.—A press report, states that the company intends making a \$75,000 extension of its electric railway in Three Rivers, Que. This probably refers to the extension of the line on Norman Boulevard, Bellefeuille and St. Phillippe Streets, the construc-

tion of which Canadian Railway and Marine World, was advised in Sept. 1922, would likely be undertaken in 1923. (Oct. 1922, pg. 534.)

Toronto Suburban Ry.—Sir Henry Thornton, President, Canadian National Rys. is reported to have advised the Guelph Chamber of Commerce that he will be glad to confer with the Chamber's executive on his first visit to Guelph regarding the extension of the Toronto Suburban line from Guelph to Hespeler.

Toronto Transportation Commission.—The new cross town line to be provided, by building an extension of the Dundas St. line from Bay St. east across Yonge St. to Victoria St., will be gone ahead with early in spring. The right of way has been prepared by the city by the acquisition of property east of Yonge St., and north of Dundas St. East, and the removal of buildings therefrom. The new connection will give a through line from the west to the east end of the city, on Dundas St.

Electric Railway Employees' Wages, Working Conditions, Etc.

London St. Ry. Co.—An agreement is reported to have been made between the company and its motormen and conductors under which men chosen to operate one-man cars will be paid 5c an hour extra, which will give them a maximum rate of 51c an hour.

Toronto Transportation Commission.—P. W. Ellis, Chairman, is reported to have stated in an interview as to the possibility of a reduction of fares to 5c; that the only method to obtain them would be by reducing employees' wages, and that was the last thing the Commission had in mind.

British Columbia Electric Railway's Vancouver Bus Service.

By Sec. 11 of the franchise agreement entered into between the British Columbia Electric Ry. Co., and the City of Vancouver, Nov. 8, 1922, the company agreed to provide a bus service in any given outlying section of the city, which is not adequately served by street car service, when requested to do so by the city council. The company agreed to provide all vehicles necessary, and to charge the same fares as on the street railway lines, with transfers to and from the latter. One-half of the fares collected, a transfer being counted as a fare, it to be allocated to meet the cost of operating and maintaining the service; the company to absorb half of any deficit in the operation of the service up to \$5,000, and the balance to be deducted from the percentages of gross annual street car receipts payable by the company to the city. The company is to assume all liabilities in connection with the operation of such services and is not relieved of any liability to build extensions to its street car lines in such areas, if called upon to do so under the Vancouver Incorporation Act of 1921. The schedule of service and timetable of operation, and the territory to be covered by such services, are to be subject to the council's reasonable satisfaction.

Under this arrangement a motor bus service is to be operated to serve the Grandview-Hastings townsite area. The route starts from Commercial Drive, and extends east along Grandview Highway

to Renfrew St., along that street to 22nd Avenue, and along that avenue to the terminus at Rupert St. An order has been given for two buses for the route, each having a seating capacity for 21 passengers, and standing room for 14 more. They will be 16 ft. 1 in. long with 6 ft. 2 in. headroom, with folding door and step at the front similar to the street cars, and an emergency door at the rear. They will be fitted with 30 h.p. engines capable of making 25 miles an hour, and will be provided with tanks capable of carrying sufficient gas for one day's operation.

Electric Railway Notes.

Saskatoon Municipal Ry., has ordered 2 G. E. 80 motors, complete with gears and pinions, from Canadian General Electric Co.

The New Brunswick Power Co. is stated in a press report as intending to place 10 or more new cars on its electric railway in St. John.

The Toronto Transportation Commission is contemplating adding 60 more motor cars, of its original pattern, and 65 trailers to its rolling stock.

Winnipeg Electric Ry. is in the market for 300 tons of steel rails, 15,000 ties, 50 tons of tie plates, 50 tons of joint plates, bolts, spikes, etc., and probably some miscellaneous maintenance equipment.

The Toronto Transportation Commission has given the following orders recently:—70 gross tons 7 in. T. rail; 30,000 lb. Cadmium copper trolley wire; 20,000 lb. weather proof cable; 50,000 lb. bare copper cable and 1,800,000 granite blocks.

Windsor, Ont. City Council refused recently to pass motions expressing confidence in the principle of municipal ownership, and condemning the Ontario Government for sending a commission to enquire into the operation of the Hydro Electric Railways, Essex Division.

The Manitoba Government is said to have finally settled on a policy with regard to the Public Utilities Commissioner and that it will be placed directly under the Provincial Secretary, who will decide as to what matters are to be dealt with by its head, who, however, will not have the status of a commissioner.

The Seattle, Wash., City Council is considering an ordinance providing for the lease of not less than 100 nor more than 200 new 58 seat passenger cars, with option of purchase, at the end of any 12 months period. This plan of providing additional rolling stock, urgently required, has been devised as the management has not accumulated a replacement fund sufficient to buy the cars needed.

The Brantford, Ont., Municipal Railway Commission has complained to the police commission relative to the operation of private bus lines in the city, and along the route served by the Brantford Municipal Ry., which, it is stated, are cutting heavily into the railway receipts. The matter is being looked into by the City Solicitor to see what can be done to protect the railway interests.

Montreal City Council special committee, which is studying the transportation question with a view of securing an improved electric car service, has held several meetings, at which a number of plans were suggested and discussed. One plan suggested is for high speed lines, either elevated or underground, radiating north, east and west from the centre of the city, and

another suggestion is that the electric lines be linked up with the Mount Royal tunnel.

London, Ont., City Council has been giving some consideration to a plan for the establishment of a motor bus service in the city, to relieve the transportation situation. The suggestion is that 62 buses, with capacity for 25 passengers each, be provided at a cost of \$800,000; and it is claimed that with a 5c. fare the service would pay for itself in four years. The matter will be further considered and it is expected that a bylaw will be submitted to the people during the summer.

The Montreal Tramways Co. was the defendant in three separate suits brought in the Quebec Superior Court, at Montreal, recently by J. McClary, to recover damages totalling \$14,810 for deterioration in value of his house on Notre Dame St., Maisonneuve, assigned to have been caused by vibration from the company's cars. The court dismissed the three actions holding that the company was operating under a charter and was not liable for damages done in carrying out its privilege unless negligence was shown. This had not been proved and it was shown that the building was an old one, having been built in 1883, and of poor materials.

The London St. Ry. began the operation of one-man safety cars in London, Ont., Feb. 10, on the Rideout line. Last year's City Council authorized the company to place five of these in service. It is claimed by some aldermen that the Rideout line is not one of those on which it was intended to permit one-man cars to be operated, but the company's officials state that they are unaware of any limitation having been placed upon the lines to be operated over. At an informal meeting of the Council Feb. 7, it was stated that a decision had been reached to ask the company to sell 6 tickets for 25c, in return for the privilege of operating one-man cars.

Hydro-Electric Railway Propaganda.

In the investigation being held at Toronto, by a commission appointed by the Ontario Government, and headed by W. D. Gregory, K. C., it was shown in evidence recently that the Hydro-Electric Power Commission of Ontario took \$1,119,000 out of the Commission's general funds and spent it on right-of-way and materials for a radial railway between Toronto and St. Catharines, the Commission's Auditor, G. T. Clarkson, stating that there was no legal authority for the expenditure. It was also elicited that \$11,000 was incurred illegally in connection with the recent hydro-electric railway campaign in Hamilton, and that the Commission has been paying T. J. Hannigan, of Guelph, Secretary of the Ontario Hydro-Electric Railway Association, \$4,000 a year, to carry on campaigns.

Trackless Trolleys for Stratford.—Last autumn the Stratford City Council asked the Hydro Electric Power Commission of Ontario to send an engineer there to look over the city and advise as to the possibility of establishing a trackless trolley service. As the council was informed that it would have to bear the expense of an investigation, it decided not to have one made, but sent representatives to Windsor to see the trackless trolleys in operation there, the report made by the delegation being that it would be premature to establish trackless trolleys in Stratford.

Marine Department

Shipping Federation of Canada's Annual Report and Meeting.

At the Shipping Federation of Canada's annual meeting in Montreal, Feb. 14, the President, R. W. Reford, presented the following report for the calendar year 1922:—

Navigation at Montreal opened with the arrival of the s.s. Bilbster on April 24. The last departure for the sea was the s.s. Mapledawn on Dec. 6. During the season 1,194 ships visited the port from overseas ports and maritime provinces with a total tonnage of 3,932,637 compared with 964 ships of 2,891,956 tons for the previous season.

The total grain shipped exceeded the 1921 record, totalling 147,775,593 bush., of which 91,557,117 were carried by ships consigned to regular line agents, and 56,218,476 by tramps. Exports of agricultural products showed up well compared with 1921. Cheese shipments were 1,166,147 boxes, compared with 1,441,779 for 1921; eggs, 208,700 cases compared with 214,203; flour, 4,605,793 sacks compared with 3,326,806; butter, 318,144 boxes compared with 70,369. Owing to the heavy shipments of grain, and the large imports of coal from European ports, a certain amount of congestion occurred at times during the season.

World Shipping Condition.—I have no hesitation in saying that 1922 was one of the worst years experienced in shipping annals. It is true that traffic was a little more brisk than in 1921, but the low and unprofitable freights, together with the strong competition for the trade offering, brought about by the supply of tonnage exceeding the demand, made no improvement. The depression which has existed in the shipping industry for the past two years is not an ordinary one. It is a slump brought about by the over-production of ships, many of them built under the new policy of government ownership adopted by several countries, and the under-production of commodities to be carried. Both these factors are attributable to the war. The quantity of laid-up tonnage, while less than in the early part of the year, still amounts to a considerable figure. A great deal of this consists of ships of 3,000 to 4,000 tons d.w. for the account of the different governments which will be difficult to place profitably in any trade. It is hard to foresee any permanent prospects of revival in either the passenger or freight carrying trade until the European countries become more stabilized. The high cost of shipbuilding and the surplus unemployed tonnage are having their effect on the shipbuilding industry, which for some months has been in a stagnant condition. Shipbuilders are now quoting an average of £9 a ton for new tonnage, but until some trade improvement appears on the horizon shipowners will hold off before placing orders.

Operating costs are still very much above pre-war figures. On the other hand, ocean freights have steadily fallen during the year, and at times it was impossible to obtain cargoes to fill the ships, owing to the congestion of grain at the terminal ports and in transit, thus entailing heavy cost to steamers on the voyage. This, combined with the heavy costs of tonnage built since the war, made it imperative that a reduction should be

made in wages of dock labor at this port, and I am pleased to say that, after somewhat prolonged negotiations, satisfactory agreements were concluded with our shipliners on Aug. 13, and with the long-shoremen on Sept. 6, both agreements continuing until Dec. 31, 1923.

Wireless Telegraph Stations on the St. Lawrence.—Last year I had occasion to mention in our last report the action taken by the authorities in closing down certain wireless stations in the River and Gulf of St. Lawrence. Much to the regret of all concerned, the Government during 1922 closed down the stations at Harrington and Point Riche, which they claimed was necessary in the interests of economy. I think I am voicing the opinion of all shipmasters trading to the St.

It has made the approach to Halifax possible, when, without it, ships would have suffered long delays, awaiting improvement in weather conditions. In addition to Halifax, stations have been erected at Canso, Red Head (St. John harbor) have also given excellent results.

For the past three years, your executive has repeatedly impressed on the Government the necessity of providing direction finders at Belle Isle, Point Amour, Heath Point, Cape Ray, Fame Point, Grand Manan and Cape Sable, and I understand the Government now has the matter under consideration. I would again urge the immediate necessity for the installation of same. We cannot afford to take any chances with ships trading to the St. Lawrence.

Hours of Labor on Shipboard.—The second session of the International Maritime Commission, appointed by the Genoa Conference in 1920 to act in an advisory capacity to the International Labor Office in all matters appertaining to the shipping industry, was held in Paris on March 7 and 8 last, when questions were discussed dealing with the carriage of deck loads; International Seamen's Code; unemployment insurance for seamen; protection of health of seamen; and lastly, but most important of all, hours of labor on shipboard. Ever since this last item was voted down at the Genoa Conference in 1920, the seafarers' delegates have been endeavoring to have it resuscitated. The Maritime commission at the last session took the position that, in view of the present impoverished conditions, world freight charges could not be increased, and, therefore, the 8-hour day question would have to be shelved indefinitely. Perhaps in the future it may be opportune to reopen this controversial question, but the time has not yet arrived.

Smoke fumes conditions on the St. Lawrence river in the vicinity of Three Rivers, arising from the pulp and paper mills, were very bad throughout the season, and two accidents were reported from this cause. The number of pulp and paper mills in this vicinity has been increasing rapidly during the past few years, and the nuisance today constitutes a grave menace to navigation. The Government is fully cognizant of the danger that exists and I understand is planning some definite action to abate the nuisance. In the interest of life and property, I feel that steps should be taken immediately to end this nuisance once and for all, and any action the authorities may take in this direction will have the unanimous support of all those who are interested in the welfare of the St. Lawrence route.

Federation Tonnage.—Both the liner and tramp tonnage entered in the Federation during the season showed a considerable increase over 1921. The combined tonnage from liners and tramps was 1,321,329 gross tons, compared with 1,043,313 for 1921. The liner tonnage entered was 804,437 tons, an increase of 142,625 over 1921, and tramp tonnage was 516,892, an increase of 135,651. Canadian registered tonnage also showed an increase, amounting to 186,898 tons, compared with 135,740, an increase of 51,158. The following table

Dominion Marine Association.

Honorary President, A. A. Wright, President, Tidewater Shipbuilders, and Vice President and Managing Director, Davie Shipbuilding & Repairing Co., Montreal.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Montreal.

First Vice President, Hon. L. C. Webster, President, Webster Steamship Co., Montreal.

Second Vice President, G. J. Madden, George Hall Coal Co. of Canada, Ogdensburg, N.Y.

Executive Committee, The President, First and Second Vice Presidents, and W. E. Burke, Canada Steamship Lines, Montreal; Yvon Dupre, Sincennes-McNaughton Line, Montreal; M. J. Haney, Canada Steamship Lines, Toronto; A. E. Mathews, Mathews Steamship Co., Toronto; W. J. McCormack, Algoma Central Steamship Co., Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; John Waller, Keystone Transports, Montreal; Honorary members, L. L. Henderson and A. A. Wright, Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

Lawrence when I say that such action on the part of our authorities was retrogressive. The improvements which have been made to aids to navigation in the Gulf and River St. Lawrence during the last two decades have resulted in a very general decrease in marine insurance rates, and as a consequence there has been a very great increase in tonnage seeking the Canadian trade. We cannot afford to call a halt in improvements of this kind. Cheap transportation of our farm products and manufactures is essential for the building up and development of Canada. Science is producing, and will continue to produce, new aids to navigation. Once their merit has been proved, the Government must be prepared to spare neither time nor money in installing them.

Direction Finder Stations.—Halifax has been equipped with a direction finder station which has well proved its worth. Shipmasters report it as more satisfactory than similar stations, both on the British and United States coasts.

shows the tonnage entered during 1922 and 1921:

	1922	1921
Regular liners	804,437	662,072
Transient ships	516,892	381,241
	1,321,329	1,043,313

The regular line, as well as tramp tonnage, entered with the Federation has been steadily growing since incorporation. In 1904, the regular line tonnage entered was 438,076 tons, in 1922 it was 804,437. Tramp tonnage, which rarely exceeded 100,000 tons a year between 1904 and 1912, in 1922 had increased to 516,892 tons, the highest on record.

Death of J. R. Binning.—It would not be fitting for me to close without making a kindly reference to the sad loss sustained during the year through the death of our esteemed colleague, J. R. Binning, who passed away on Sept. 30. He was one of the incorporators of the Federation, and since incorporation acted as its Treasurer. He always took a keen and energetic interest in its affairs as well as in the development of the trade and commerce of the St. Lawrence route, and his passing away leaves a vacancy hard to fill.

Departmental Relations.—As in the past, our relations with the various Government departments continue to be most amicable, and our thanks are again due to the respective officials, all of whom gave courteous attention to the many matters which we have had occasion to draw to their attention.

The following officers etc., were elected:—President, R. W. Reford; Treasurer, E. W. Foulds; other members of executive committee, D. W. Campbell; A. E. Cook; P. A. Curry; W. R. Ekin; A. M. Irvine; A. Mackenzie; J. W. Nicoll; R. B. Teakle. Sub-committees on bills of lading, and on harbor equipment, P. A. Curry and W. I. Gear.

Damage to Esquimalt Drydock Cofferdam.

As mentioned in Canadian Railway and Marine World for February, a portion of the outer cofferdam at the additional drydock being built at Esquimalt, B.C., collapsed and was carried away early in January. About 300 ft. of the cofferdam, which consists of a loose rubble mound, with a watertight core of interlocking steel sheet piling, subsided, owing to a blowout of the soft material between the bottom of the rock mound and the rock bed of the harbor, when unwatering of the enclosed area had proceeded to a depth sufficient to give a head of approximately 33 ft. on the dam. No loss of life or injury to workmen occurred, as the work inside the enclosed area had not been commenced. The only plant within the enclosed area consisted of pumping equipment, which was all on floats, and was uninjured.

Two dredges were put to work towards the end of January preliminary to undertaking repairs, and the repair work commenced early in February, after arrangements had been made by A. D. Swan, Consulting Engineer, and H. M. Scott, Construction Manager, P. Lyall & Sons Construction Co., the general contractors. The cost of repairing the damage will be at least \$50,000.

J. B. Williams, Traffic Agent, J. Spencer Turner Co. Canadian, Ltd., Hamilton, Ont., writes: "Having subscribed for Canadian Railway and Marine World for a couple of years, I have come to count considerably upon the information it contains."

The Eastern Steamship Co's Lake Ships.

Canadian Railway and Marine World for February mentioned the incorporation of the Eastern Steamship Co., and its order for 10 full Welland Canal size steamships, for operation between Buffalo, Port Colborne and Montreal. The order as stated was divided amongst 5 builders in Great Britain, as follows, Samuel White and Co., Cowes, Isle of Wight; Earle's Shipbuilding and Engineering Co. Hull; Furness Shipbuilding Co., Haverhill-on-Tees; Cammell Laird and Co., Birkenhead; and Napier and Miller, Glasgow, each company building two. The details and specifications of all the ships will be practically the same, there being however, some slight variations in machinery and layout. The names selected for the ships, are;—Judge Hart, Frank S. Baird, Norman P. Clemont, William H. Daniels, Edwin T. Douglass, Albert C. Field, Nisbet Grammer, Watkins F. Nisbet, Robert W. Pomeroy and John J. Rammacher.

Following are details of the two ships being built by Earle's Shipbuilding and Engineering Co.,—Length overall 258 ft., length b.p. 253 ft., breadth overall 44 ft., breadth moulded 43 ft. 1 in., depth moulded 20 ft.; cargo capacity of 130,000 cub. ft., or equal to a dead weight carrying capacity of 2,400 tons. The ships will have a forecastle for the officers and men forward, with the captain's accommodation and pilot house on the deck above. A large deck house will be fitted aft, covering the machinery casings, with accommodation for engineers, stewards, firemen, etc. Powerful winches will be fitted at each end of the ship for manoeuvring purposes, with steam warping capstan aft and steam windlass on the forecastle deck. The hold will be free from all obstructions, and the hatches arranged for the rapid loading and unloading of cargo. The propelling machinery will consist of triple expansion engines, with cylinders 16, 27 and 44 in. diam., by 33 in. stroke, supplied with steam by 2 main boilers, each 12 ft. internal diam., by 11 ft. long, at a working pressure of 180 lb. and capable of driving the ship at a speed of 10 knots. The machinery is to be placed as far aft as possible, so as to obtain the maximum length of holds. Water ballasts will be provided for in the cellular double bottom fitted all fore and aft, and the two peaks will be arranged for water ballast. Electric lighting will be provided throughout. The ships are being built in accordance with the British Corporation Society's rules and requirements for steamships on the Great Lakes and St. Lawrence River.

Nisbet Grammer, President, Eastern Steamship Co., Buffalo, N.Y., and J. J. Boland of Boland & Cornelius, of Buffalo, who will be the managers of the line, are in England, in connection with the building of the ships.

Marine Public Works Contracts Awarded.—The Dominion Public Works Department has awarded contracts for marine public works as follows,—Dec. 20, 1922, training wall, Woodward Channel, Fraser River, Steveston, B.C., to Pacific Construction Co., Vancouver, B.C., at unit prices; Jan. 8, extension to wharf and freight shed, Stewart, B.C., to G. B. Lawrence and E. R. Workman, Stewart, at unit prices; Jan. 8, reconstruction of outer end of wharf, St. Omer, Que., to T. P. Charleson, Ottawa, at \$2.85 a cub. yd., of crib work completed and ballasted.

Canal Statistics for December 1922.

The Dominion Bureau of Statistics Transportation branch has issued the following:—

Sault Ste. Marie.—Total traffic through the Canadian and United States locks, which closed Dec. 24 and 20 respectively, was 1,837,221 tons, an increase of 55% over Dec. 1921. For the season the total traffic aggregated 66,064,219 tons, an increase over 1921 of 37%. The chief factors in this increase were heavy shipments of wheat, 275,444,071 bush.; other grain 118,506,576 bush., and iron ore 42,227,338 tons. Although iron ore shipments were 87% above 1921 they were 25% below 1920. Wheat and other grain shipments were records. Both bituminous and anthracite coal shipments during September to December inclusive were above the same period of 1921, but for the season bituminous coal was 3,716,456 tons, or 30%, and anthracite coal, 1,585,681 tons, or 70% below the 1921 shipments.

Welland Canal closed Dec. 12 with a total traffic for the month of 25,091 tons, and for the season of 3,391,419 tons. This latter was surpassed only in 1913 and 1914, when the total cargoes for the season were 3,570,714 and 3,860,969 tons respectively. Wheat shipments for the season aggregated 1,752,458 tons or 58,415,300 bush., which was a record. Shipments of U.S. corn fell off 323,503 tons, or 11,553,680 bush., from 1921, and oats also showed decrease of 11,453 tons or 673,706 bush. Coal shipments also were light compared with 1921, bituminous coal decreasing 468,508 tons, or 61% and anthracite coal shipments dropped from 13,130 tons to 45.

St. Lawrence Canals closed Dec. 13, with a total traffic for the month of 55,238 tons against 19,648 in 1921. For the season the total traffic was 4,319,919 tons compared with 3,734,065 in 1921. Wheat shipments for the season were 58,901,500 bush. an increase of 30,475,500 over 1921, and a record. Corn and oats decreased, but barley and rye substantially increased. Iron and steel, sugar, merchandise, pulpwood and lumber increased over 1921 but coal shipments were 54,522 tons for anthracite and 184,874 for bituminous below 1921.

Pilotage in British Columbia.—The impression has prevailed from an announcement made recently, that the Dominion Government had given the British Columbia Pilotage Association the privilege of conducting examinations for pilots, and dealing with pilots' licenses. A local pilot, who had been given notice by the Association that his license had been cancelled, communicated with the Director of Pilotage at Ottawa, and was informed that neither the British Columbia Pilotage Association nor any other association has authority to either issue or cancel licenses. Pilotage in British Columbia waters is not compulsory, and ship owners are at liberty to employ a pilot of their own choice, or none at all, and at such rates as they may determine.

Naval Appointments for Atlantic Stations.—Lieut. D. St. G. Lindsay has been appointed to H.M.C.S. Guelph, additional for war staff duties (Intelligence), at Ottawa. Lieut. R. W. Wood has been appointed to H.M.C.S. Guelph for war staff duties (Intelligence), at Halifax, N.S. Lieut. H. W. S. Soulsby has been appointed to H.M.C.S. Guelph for R.C.N. Barracks, Halifax, N.S.

Trans-Pacific Ocean Steamship Records.

A recent press dispatch from Seattle, Wash. stated that the Admiral Line's s.s. President Grant had established a new trans-Pacific record, making the voyage from Yokohama, Japan, to the Race Rock quarantine station near Victoria, B.C., in 8 days, 10 hr., and 44 min., the best previous record being given as 8 days, 18 hr. and 31 min., by the C.P.R. s.s. Empress of Russia. It was also stated that the President Grant's master, Capt. M. M. Jensen, had been notified by wireless that the limitation of speed of 17.5 knots an hour had been removed, and he was free to see exactly what his ship would do on the run. A later dispatch stated that Capt. Jensen had announced that the reports that his ship had made a new record, were incorrect, the time taken on the voyage being 9 days, 10 hr. and 41 min., after making allowance for the meridian day. The trans-Pacific record still remains with the C.P.R. s.s. Empress of Russia, for 8 days, 18 hr. and 31 min. Both the C.P.R. steamships Empress of Canada and Empress of Asia have made the passage in less than 9 days.

Provision for Vancouver Harbor Improvements.

The Minister of Marine introduced a bill into the House of Commons, Feb. 13, authorizing further advances to the Vancouver Harbor Commissioners, and providing that the Government, may from time to time, advance not exceeding in the whole, \$5,000,000, to enable them to build such terminal facilities as are necessary to properly equip the port; that during the construction period the interest payable on the debentures, receivable by the Finance Minister in exchange for such advances, shall be deemed to be money required to build, and to be part of the cost, and such interest may be paid out of the total sum advanced; that the commissioners shall submit to the Minister of Marine for approval, monthly applications for such advances, with statements showing total expenditures on different items in detail, and that on advances being made, they shall deposit with the Finance Minister, debentures equal in par value to the advances made, repayable within 25 years, and bearing interest at 5% a year payable half yearly; and that the principal and interest shall be payable by the commissioners out of all their property, assets, tolls, rates, dues, penalties, and other sources of revenue, and shall rank as a charge thereon.

The Minister pointed out that the Commission was organized in 1913, and in 1919, advances were authorized to the extent of \$5,000,000, and of this amount, \$300,000 was paid to redeem bonds which had been issued by the commissioners. They then secured property for the site of the Ballantyne pier for \$672,900. Other expenditures included repairing foundations and dredging, berthing and turning basin for the main pier, \$512,095; construction on pier and sheds, to Dec. 31, 1922, \$2,814,871; engineering and contingencies, \$121,583; development of other harbor property, etc., \$35,319; interest charged to capital account, \$136,064, making a total expenditure of \$4,524,800, and leaving a balance of \$475,200, available for future expenditures. The Ballantyne pier is not completed, and a further \$1,760,765

will be required in addition to the balance remaining of the last loan. The commissioners have engaged an elevator expert from the John S. Metcalf Co., Montreal, to advise as to the best course for handling grain, and it is proposed to enlarge the existing grain elevator by 500,000 bush. capacity, making a total capacity of 1,750,000 bush. at a cost of about \$400,000. It is also proposed to build a second grain elevator with capacity of 2,000,000 bush. on the Ballantyne pier, at a cost of about \$2,000,000. Other works in contemplation include a log booming ground, \$171,000; marine ferry terminal \$155,375; Ballantyne stage yards \$76,000; railway equipment \$81,000; land adjacent to present elevator \$50,000; lumber assembling wharf \$190,000; Granville Island Harbor \$27,000; overhead approach to Ballantyne pier \$65,000; and contingencies \$23,860. The harbor's financial condition is excellent, and it is believed that in a short time it will be self sustaining. The receipts for 1922 were \$423,307.98 and the expenditures \$131,240.75. The bill was read a second and third time on Feb. 16.

The Steamship Monte Grappa Disaster.

Canadian Railway and Marine World for January contained the following item, in its Marine Department:—"The Italian s.s. Monte Grappa, which sailed from Montreal, Nov. 5, after having had some repairs made by Canadian Vickers, Ltd., was reported, Dec. 4, to have been abandoned at sea in a sinking condition, about Nov. 14, while en route to Venice, having encountered a severe storm. The crew of 45 were rescued by the White Star Line's s.s. Pittsburgh and landed at Southampton, Eng."

The item was compiled from a press report, its writer, knowing that something in the way of work had been done on the ship by Canadian Vickers, Ltd., adding the words, "after having some repairs made by Canadian Vickers, Ltd." It is incomprehensible to us how any reader of the paragraph could have had any idea that the repairs referred to had anything to do with the disaster, but some persons appear to have interpreted in that way, and we therefore wish to make it plain that they are entirely mistaken. The only thing Canadian Vickers, Ltd., did was to supply a few small piston rings for one of the auxiliary pumps in the engine room. The cause of the disaster, as stated in press reports at the time, was believed to be the shifting of the grain cargo. As far as Canadian Railway and Marine World is aware, the ship was carefully loaded, was of course passed by the Montreal Port Warden, and accepted by the underwriters as properly stowed and ready for sea.

Avery, Kernahan Ltd. is being organized in Vancouver, B.C., to carry on a general shipping and trading business. Maylor Avery was formerly with the Vancouver Milling & Grain Co., and C. C. Kernahan was formerly contracting freight agent for Canadian Government Merchant Marine Ltd.

The British Columbia Mills Timber & Trading Co. Ltd. has had its charter enlarged under the British Columbia Companies Act, and is authorized, among other things, to carry on business as ship owners and general carriers by land and water.

Transfer of Dominion Government Grain Elevator at Vancouver.

The following was approved by the Governor General on Jan. 19, and passed as an order in council:—"The committee of the Privy Council have had before them a report, dated Jan. 19, 1923, from the acting Minister of Trade and Commerce, stating that the Vancouver Harbor Commissioners have made an offer to purchase, upon the terms and conditions hereinafter stated, the Canadian Government elevator at Vancouver, which was constructed pursuant to the Canada Grain Act of 1912, sec. 13, as amended, and to pay therefor \$550,000, the purchase price to be secured by the Vancouver Harbor Commissioners' bonds for \$550,000 bearing interest at 5% per year. The Minister recommends that the offer be accepted and that the sale and conveyance of the elevator to the Vancouver Harbor Commissioners be authorized upon the following terms and conditions: 1.—They shall deliver to His Majesty, concurrently with the issue of the letters patent, bonds of the Corporation of the Vancouver Harbor Commissioners for \$550,000 bearing interest at 5% per year and acceptable to the Minister of Finance. 2.—The Commissioners shall, concurrently with the issue of the letters patent enter into an agreement with the Board of Grain Commissioners whereby the Harbor Commissioners shall be bound to operate the elevator as a public terminal elevator within the meaning of the Canada Grain Act. The agreement shall be dated Feb. 1, 1923, and the Harbor Commissioners shall thereby agree to permit the Board of Grain Commissioners to operate the elevator until the close of the present crop year, and to account to the Board of Grain Commissioners for all storage charges and other revenue arising out of the operation of the elevator by the Board and received by the Harbor Commissioners after the conclusion of the present crop year, and for all advances made by the Board, and similarly collected by the Harbor Commissioners, after the conclusion of the present crop year. The committee concur in the foregoing recommendations and submit the same for approval."

George Hall Coal and Shipping Corporation Ltd. has been incorporated under the Quebec Companies Act, with \$2,400,000 authorized capital, and office at Montreal, to acquire all or any part of the goodwill and rights of the George Hall Coal Co. of Canada Ltd., the Blanche River Pulpwood Co. Ltd., and the Black River Shipping Co., with power to carry on a wholesale coal and fuel business, also a transportation business, and the right to acquire and develop electric and other powers in Lake St. John, Charlevoix, Saguenay and Chicoutimi Counties, Que.

The Lower St. Lawrence Navigation Co. Ltd. (La Cie. de Navigation du Bas-St. Laurent Ltée.) has been incorporated under the Quebec Companies Act, with 8,000 shares of no nominal or par value, but to begin operations with \$40,000, and office at Rimouski, Que., to own and operate ships and to carry on a general coasting and navigation business, more particularly between Montreal, Quebec, Gaspe and Magdalen Islands. The incorporators are: J. A. Brillant, Rimouski, Que.; Lt. Col. J. E. Pinault, J. A. Ross, Mont Joli, Que.; and Dr. J. E. Bernier, Quebec, Que.

Enquiry Into Alleged Combine Among Great Lakes Steamship Owners.

The royal commission, consisting of S. J. McLean, LL.B., Assistant Chairman, Board of Railway Commissioners, Chairman; Brig.-Gen. T. L. Tremblay, member and Chief Engineer, Quebec Harbor Commission, and Levi Thomson, barrister, Qu'Appelle, Sask., appointed to investigate representations alleging the existence of a combine of Canadian companies operating ships on Lakes Superior, Huron, Erie and Ontario, their connecting waters, and the St. Lawrence River, contrary to the public interest, held its first sitting at Winnipeg, Feb. 12. H. J. Symington, K. C., Winnipeg, is counsel for the commission and W. T. R. Preston, of Port Hope, Ont., who has made a preliminary "investigation" for the Government, as secretary. In this connection it may be mentioned Minister of Trade and Commerce Robb stated in the House of Commons recently, in answer to questions by Hon. J. B. M. Baxter, St. John, N. B., that Preston was requested by the Government to investigate the case of lake transport, and subjects connected with transport of freight on the Great Lakes; that he was paid \$15 for each day employed, and a daily allowance of \$15 in addition to his actual transportation expenses; that his report was not made public, because the preliminary enquete was for the Government's information and that the investigation is being continued by a royal commission, and when it is completed, the report will be submitted to Parliament. Mr. Robb, however, was hardly frank in stating that the report was not made public, as portions of it were given to at least all Government newspapers and were published simultaneously with the order-in-council appointing the commission.

Companies interested are represented by counsel as follows:—Canada Steamship Lines, Aime Geoffrion, K.C., Montreal, and R. I. Towers, K. C., Toronto; Mathews Steamship Co., H. W. Shapley, Toronto; Port Arthur Shipbuilding Co., Collingwood Shipbuilding Co., and Halifax Shipyards Ltd., F. H. Markey, K. C., Montreal; Great Lakes Shipping Co., H. Phillips, K. C., Winnipeg; Standard Shipping Co., I. Pitblado, K. C., and E. H. Crawford, Winnipeg. T. R. Enderby, Operating Manager, Canada Steamship Lines, and President, Dominion Marine Association, attended on the Association's behalf, the Association's Counsel having advised the chairman of the commission previously, that its members welcomed the opportunity to provide authoritative information, which the commission would doubtless be glad to receive.

The commission has power as stated in Canadian Railway and Marine World for February to enquire into the relations and arrangements between the steamship companies and interests amalgamated or combining for the purpose of operating or arranging for the transportation and insurance of grain in ships traversing the Great Lakes; into the alleged combine of shipping interests in its efforts to dominate and control the freight rates and terms under which grain has been carried from Fort William and Port Arthur, and into the comparative freight rates on grain by ships traversing the Great Lakes between Duluth, Milwaukee and Chicago to eastern lake ports, as compared with the prevailing freight rates on grain

to eastern lake ports in ships controlled or dominated or fixed by the alleged combination of interests controlling Canadian lake shipping sailing from Port Arthur and Fort William to eastern ports, and to make such further enquiry as the commission may see necessary in the premises. The following summary of the proceedings is compiled from press reports.

H. J. Symington, K. C., announced at the opening sitting that the evidence it was intended to produce would be largely of documentary nature, containing statements of companies' operations, and on the suggestion of I. Pitblado, K. C., who said that the demands made on the companies were of such a sweeping nature that they would require practically the entire office records, it was decided to confer and settle exactly what documents should be produced. F. H. Markey, K. C., representing shipbuilding interests, stated that his clients were only interested in questions which might arise in connection with a suspension or abrogation of the coasting regulations.

J. A. Speers, General Manager, Lake Shippers Clearance Association, the first witness gave details of grain shipped from Fort William and Port Arthur during the navigation season from its opening to Aug. 31, the end of the crop year, to various ports. He stated that at the end of July, the association had 63 members, and there was a constant charge of 30c. per 1,000 bush., and in addition, a charge varying from 10c. to 40c. per 1,000 bush., according to the time taken in loading a ship, made by shippers.

James Stewart, President, James Stewart Grain Corporation, New York; Maple Leaf Milling Co., Toronto; Vice-President, State Elevator Co., Managing Director, James Stewart and Co. Ltd., Winnipeg, and Federal Grain Co., and director, Western Elevator Co., Western Grain Co., Western Terminal Elevators Ltd., and Canadian National Rys., in evidence and cross examination extending over parts of four days, stated that there was discrimination against Port Colborne, compared with Buffalo, and as a result, the Maple Leaf Milling Co.'s mill at Port Colborne had to close down last summer, as it could not compete in the European market with U. S. millers. In consequence he lodged a complaint with the Minister of Trade and Commerce, and requested that the coasting regulations be suspended. He said that only two Canadian brokers handled the business of all Canadian shipping companies, and he had been informed that the higher rates charged by these two concerns to Port Colborne, had been decided on at a conference of Canadian lake shipowners at Toronto in May 1922. The brokerage companies stipulated that they should get the insurance on grain cargoes, and charged 30c. per \$100 in the summer, when the same insurance could be obtained from private companies at 18c. per \$100. He favored the suspension of the coasting laws until such time as Canadian shipowners are disciplined by competitive rates, and said that this statement was based on rates which prevailed for the greater part of last season from Fort William to Buffalo, as compared with rates from Fort William to Port Colborne. He had of-

fered to have grain unloaded at Port Colborne in 24 hours, but no impression was made on the shipowners. During the evidence, it developed that by marketing future contracts, his companies, during last autumn, were paying 4c. a bush. for carrying grain, when the current rate was 10c. or 11c.

S. L. Smith, of Smith, Murphy and Co., Winnipeg, stated that his firm was one of the largest wheat exporters on the Winnipeg market, and that he was satisfied that the present system of handling the business through brokers and maritime insurance does not affect the ultimate price received by the producer, or paid by the consumer. In Oct. 1922, he had made representations to the Dominion Government protesting against the removal of the coasting regulations, which, if carried out, would cause congestion at Port Colborne and Georgian Bay ports, and would increase steamship rates. He also pointed out that there was, at the time, a sufficiency of Canadian tonnage available, and he did not consider Canadian rates were exorbitant, compared with rates charged to U. S. ports. He claimed that there was worse congestion at Buffalo toward the end of September, than at any Canadian port, and longer unloading delays had been experienced there, he having been called upon to pay demurrage varying from \$500 to \$1,500 a cargo at Buffalo, with no demurrage charges at Canadian ports, where the steamship rates took care of all such charges.

D. Stocking, President, Tomlinson Shipping Co., Duluth, Minn., stated that, in the slack season, Canadian ships were excluded to a very large extent, by U. S. coastal laws, from carrying ore and limestone, and in carrying coal, Canadian ships were also at a disadvantage, because coal shippers preferred to give their business to U. S. lines. At the same time, Canadian shipowners had to face international traffic on equal terms. Shipbrokers receive a chartering fee, in addition to their commission on cargo insurance, on contracts for space in U. S. ships, but in Canadian ships they only received commission on insurance.

H. E. Sellers, Manager, Gooderham, Melady and Co., Winnipeg, stated that there was no competition in rates, to his knowledge, in the autumn. The three shipping brokers operating in Winnipeg, did not usually underbid each other. He had chartered space on a Canadian Government Merchant Marine ship at 4-1/2c. for October, and at 5c. for November, and had chartered space, through the Standard Shipping Co., for the same months, at 4c., but was unable to get additional space through the same company at that figure, due, it was stated, to the uncertainty as to congestion at Canadian ports. Under examination by I. Pitblado, for the Standard Shipping Co., when shown that Mr. Stewart had chartered space, through the Standard Shipping Co., at 4c., a week after Mr. Seller had endeavored to obtain increased space at that rate, the latter stated that that would indicate some kind of competition in rates. He had objected to paying a 4c. rate to Georgian Bay ports, when the rate to Buffalo was only 3c. When using space on Canadian Government Merchant Marine ships he paid 20c.

per \$100 insurance, the rate to brokers on other ships being 30c. per \$100. He would prefer to place his own insurance, if he could get the necessary space.

T. R. Enderby, Operating Manager, Canada Steamship Lines, and President, Dominion Marine Association, stated that he was present at a meeting in Toronto, in May 1922, of steamship owners and shippers to discuss rates on the Great Lakes.

L. H. Wolvin, Standard Shipping Co., charter agents for Canada Steamship Lines Ltd., also mentioned the Toronto meeting, and stated that subsequently he received instructions from Mr. Enderby regarding the rates to be charged. He outlined in general, the method of carrying out business as between shippers and shipowners, and stated that he had never discriminated between shippers. The fact that he was unable to provide some shippers with cargo space last October, was explained by the statement that the normal carrying capacity of Canada Steamship Lines' ships in one month, was from 14,000,000 to 14,500,000 bush., but owing to congestion at ports they had been able to carry only about 9,000,000 bush.

While under examination regarding an effort to get Winnipeg brokers to sign an agreement not to let cargo space to shippers who refused to allow brokers to place the insurance, he stated that several had signed such an agreement, but he had never intimated to any of them that he would put them out of business unless they signed. He stated that he could not recall taking the matter up with Duluth brokers, but it had been a topic of conversation all over the lakes, and he thought there was a time when Nye Jenks, grain exporters, Chicago, had tried to charter space without allowing the brokers to write the insurance, and he produced a copy of a telegram he had sent to the Standard Shipping Co.'s manager there, which read as follows:—"Nye Jenks working for another cargo Chicago-Buffalo, trying to write their own insurance. I am getting very tired of trying to uphold the situation of the vessel broker. We are in a wonderful position to break every vessel agent on the Lakes, and I want you to notify all Winnipeg agents that if one of them produces a boat to load at Chicago, that I am absolutely through, and will do business for nothing until everyone of them are out of the game, which you know I can do, and will do. Solicit them all. Show them this telegram and tell them I mean every word I say."

It has been stated that the Standard Shipping Co. has the exclusive brokerage rights for traffic carried by Canada Steamship Lines' ships, until 1940, and also contracts with other owners.

P. D. Sullivan, of D. Sullivan and Co., shipowners and brokers, Chicago, stated that under normal conditions there should be a difference in the rate from Chicago in favor of Bay ports as compared with Buffalo, of 1/2c. a bush., and stated that the Canadian route was popular because rates to Bay ports on U. S. ships were less than to Buffalo. He gave out of pocket expenses on a ship of about 350,000 bush. capacity, as \$600 a day, not including investment on capital or overhead. He stated that if the coasting laws were removed on both sides, he believed that it would be a disadvantage to U. S. ships and an advantage to Canadian ships; if the U. S. coasting laws were removed and the

Canadian laws maintained, it would be a decided disadvantage to U. S. ships, and if the Canadian coasting laws were removed and the U. S. laws maintained, it would be to the decided disadvantage of Canadian ships. If the Canadian coasting laws were suspended in the spring and autumn when U. S. ships were not busy, it would greatly advantage U. S. traffic.

Among others to give evidence were, T. J. Anderson, Manager, British Empire Grain Co.; D. L. Smith, Manager, Grain Growers' Export Co.; T. F. Carscadden, Winnipeg Manager, James Caruthers and Co.; W. R. Bawlf, Bawlf Grain Co.; N. Heimbecker, grain shipper; A. Christie, Canadian Elevator Co.; H. N. Baird, Baird and Botterell; and W. J. T. Kerr, K. B. Stoddart Co.

The Winnipeg sittings concluded Feb. 23, after which it was expected that the commissioners would visit Fort William, Buffalo and Chicago. At Fort William, evidence of Board of Grain Commissioners would visit Fort William, no public sittings will be held at Buffalo or Chicago. The commissioners will then go to Montreal, where public sittings will be resumed.

The Winnipeg sittings have dealt almost entirely with the matter from the shippers' viewpoint, and that of the shipowners will be heard at Montreal. A cursory reading of the evidence, as reported from day to day, leaves the impression that there is a community of interests of those concerned with the transportation of grain from the head of the lakes to the seaboard, with the view of handling the business in the most methodical manner, and the trend of the evidence was that the system is, in the main, satisfactory to the shippers and does not add to the ultimate cost. The system followed in the allotment of tonnage, as between shippers and shipowners, is an outcome of the co-operative arrangement adopted for handling Great Lakes shipping during the war period, and which had its present chief antagonist's approval. The alleged discrimination in rates appears to resolve itself into one of competition. That there was competition was shown when it was stated that when certain rates were quoted as 10c. and 11c. cargoes were booked over the same route at 4c., 4-1/2c. and 5c. Congestion at various ports last year was a well known fact, and evidence was given that, due to port congestion, the steamship capacity of Canada Steamship Lines, was reduced from 14,500,000 to 9,000,000 bush. a month. Notwithstanding this congestion at Canadian ports, a worse condition was shown at U. S. ports, and in the latter cases, shippers had to pay large demurrage dues, which were absorbed by Canadian shipowners, without reference to the rate on the cargo. Opinion was also expressed on the effects of a suspension of the coasting laws, and it must be admitted that while a suspension of the Canadian laws, while the U. S. laws were maintained, would be disastrous to Canadian shipping, its effect on the rate question, or on alleged discrimination between ports, would, at least, be problematical.

Coast Navigation Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$10,000 authorized capital, and office at Vancouver, to carry on a ship owning and shipping business, and to own and operate ships for passengers, mails and merchandise.

Wheat Shipments to Montreal and Their Handling.

Minister of Marine Lapointe gave the following answers in the House of Commons recently, to questions asked by H. Deslauriers, St. Mary, Montreal:—"In Aug. 1921 there were at different times in the Montreal terminals and Port of Montreal from 1,000 to 2,000 cars waiting to be unloaded, but the peak of from 1,800 to 2,000 cars did not exist for longer than 6 or 7 days. The cost of transportation of wheat from Port Arthur to Montreal at present by rail is 34½c per 100 lb. or 20.70c a bush. The charge for elevation of wheat from vessels to commissionaires' grain elevators is four-tenths of 1c. a bushel, including storage in the elevator up to 10 days free, and free fire and explosion insurance. In addition there is a charge of \$2.75 per 1,000 bushels for shovelling the grain to the elevator buckets in the ships hold. The charge for elevation of wheat ex railway cars is six-tenths of 1c. a bushel, including storage in elevator up to 10 days free, and free fire and explosion insurance. The shovelling in this case is absorbed in the elevation charge. The charge for delivery of grain to ocean steamships over the grain conveyer system or otherwise is four-tenths of 1c. a bushel."

Vancouver Harbor Commissioners.—The House of Commons passed a motion recently by Hon. H. H. Stevens, Vancouver Center, B. C., for a return showing all correspondence, letters, documents, petitions, etc., passed between the Government or any member of the Government, or officials of the department and persons in Vancouver, relating to retirement of certain members of the Vancouver Harbor Board and the appointment of successors; also copies of the orders in council appointing members of the Board since its inception; also orders in council that have passed since Jan. 1, 1922, authorizing the expenditure of moneys by the commissioners in harbor improvements.

Bay Line Steamships Ltd., has been incorporated under the Dominion Companies Act, with authorized capital stock of 10,000 preference shares of \$100 each, and 20,000 common shares without nominal or par value, provided that it shall carry on business with a capital of \$1,100,000, and office at Montreal, to own and operate ships and facilities for handling and forwarding of passenger and freight traffic. It is reported that this company will operate the 10 steamships bought from the French Government, by Montreal interests, with which the Ogilvie Flour Mills Co. is associated, as mentioned in Canadian Railway and Marine World for February, page 91.

Vancouver Grain Shipments.—From Nov. 29 to Dec. 31, 1922, inclusive, 3,377,690 bush. of wheat were shipped out of Vancouver in 24 ocean going ships. Of these shipments, 19 were for United Kingdom ports, and 5 for Japan. During January, 23 shipments were made, totalling 2,886,260 bush., of which, 16 shipments of 2,639,221 bush. were to United Kingdom ports, 6 shipments of 230,472 bush. to Japanese ports, and one shipment of 16,567 bush. to China.

John Allsop, Assistant Manager, Royal Mail Steam Packet Co., London, Eng., formerly General Agent for Canada, at Halifax, N.S., writes: "I have always perused Canadian Railway and Marine World with the greatest possible interest."

Atlantic and Pacific Oceans.

The Canadian Robert Dollar Co's s.s. M. S. Dollar was towed into Boston, Mass., Jan. 31, en route from the Orient, her engines having become disabled, about 400 miles from port, during a storm.

Albert Sarrant, Minister of the French Colonies, who visited St. Pierre and Miquelon Islands recently, is reported to have stated, on his return to France, that there was no intention of selling the islands, and that the port of St. Pierre would be improved by the installation of a lighthouse and a cold storage plant for fish.

The Canadian Robert Dollar Co. is reported to have bought the steamships Warzawa and Wayfarer, the former from the Polish-American Line, and the latter from the Harrison Line. The Warzawa is about 9,000 tons d.w., and was built in the U.S., and the Wayfarer, 14,000 tons d.w., is British built, and will be operated on the round the world service, and renamed Virginia Dollar.

The Mexican States Line is reported to have decided to extend its coast steamship service between Mexican Pacific ports, Central American ports and San Francisco, to include Vancouver, B.C., in the near future. The ships will operate under the British flag, the company being subsidiary to the Clan Line, Glasgow, Scotland. It has 3 passenger and freight steamships of 4,000 tons, and 6 smaller coasting ships, one of which, Guerrero, was salvaged at Mazatlan, Mexico, recently, by Pacific Salvage Co., Victoria, B.C.

Furness Withy & Co. will put four additional steamships in trans-Atlantic service shortly. The first one, named London Importer, which was launched in Nov. 1922, is approaching completion; the London Commerce was launched in January, and the London Merchant and the London Shipper were expected to be launched in February and March. They average about 7,900 tons gross each, and are equipped with geared turbines of about 5,400 shaft h.p. They were built by Furness Shipbuilding Co., Haverton Hill-on-Tees, England.

The Canadian Manufacturers' Association sent a questionnaire to its members recently to ascertain the probable requirements of shippers and manufacturers, in the event of a possible inauguration of an intercoastal steamship service between the Canadian Atlantic and Pacific coasts, via the Panama Canal. It is stated that the answers from seaports have not been satisfactory, i.e., that there is not, at present, sufficient prospect in sight of enough westbound freight to make such a proposal profitable from the start.

The s.s. Leviathan has been assigned to the United States Line, by the U.S. Shipping Board, for operation in the trans-Atlantic passenger service. She will run between New York and Southampton, calling at Cherbourg, France, en route, and will thus be in direct competition with the White Star Line's s.s. Majestic, and the Cunard Line's s.s. Berengaria. Each of these ships is German built, and they were intended for the Hamburg-America Line's service between Bremen and New York. These three ships are the largest passenger ones in the world, in the following order: Majestic, formerly Bismarck; Leviathan, formerly Vaterland; and Berengaria, formerly Imperator.

The Cairn Line, of which Robert Reford

Co., Montreal, are Canadian Agents, is adding another ship to its fleet, for the St. Lawrence service. She will be named Cairntor, and will run between Newcastle-upon-Tyne, Eng., Leith, Scotland, and Montreal. She has been built at Sunderland, Eng., and is a sister ship of the s.s. Cairnross, which made her maiden voyage to Montreal last year. Her dimensions are: Length 425 ft., breadth 55 ft., depth 29 ft., d.w. tonnage 8,710. She is of the shelter deck type, and equipped with geared turbine engines, arranged to burn either oil or coal. She made her maiden voyage to Portland, Me., during February, and on the re-opening of the St. Lawrence, will run to Montreal.

The Union Steamship Co. of New Zealand has ordered a large motorship for its passenger and mail service, on the Canadian-Australasian Line, between Vancouver and Australasian ports. The press reports, which stated that a second ship of similar type to the foregoing was to be ordered, and that the C.P.R. had ordered a motorship for the Canadian-Australasian route, are incorrect. The ship, which will be built by the Fairfield Shipbuilding & Engineering Co., Glasgow, Scotland, will be 600 ft. long, 73 ft. broad and of about 20,000 net tons, and will be equipped with internal combustion engines for a speed of 18 knots. She will be practically a duplicate of the C.P.R. s.s. Empress of Canada, by the same builders, with the exception of her propelling machinery, which will be Diesel engines of the Sulzer type, of about 13,000 shaft h.p. The passenger accommodation will be spacious, with 8 cabins de luxe, and there will be only 30 first class cabins arranged for more than 2 berths. Other accommodation will include a gymnasium, cafe, soda fountain, etc.

Maritime Provinces and Newfoundland.

Furness Withy & Co's steam tug Neptune was badly damaged by fire at St. John, N.B., Jan. 29, while assisting in towing the s.s. Manchester Brigade up the harbor.

The Norwegian s.s. Capto was towed into St. John's, Nfld., Jan. 28, by the Furness Line's s.s. Sachem. She lost her rudder while en route from Wabana, Nfld., to Germany with iron ore, and was picked up by the Sachem, Jan. 18, about 500 miles east of St. John's.

The C.G.S. Stanley, which was caught in the ice off the Cape Breton coast, about the middle of January, arrived at Louisburg, N.S., Feb. 4. The master, Capt. I. C. Rhude, stated that ice conditions in the Cabot Strait, particularly off Cape North, were the worst he had ever experienced.

The U. S. Federal Court, at Boston, Mass., has awarded \$78,000 to the owners of the Lunenburg, N. S. schooner John M. Wood, being half the value of the cargo of the schooner, which was sunk by the U. S. Shipping Board's s. s. Lake Elsie, in collision, near Little Hope Island, N. S., May 22, 1920. The schooner was insured. It was held that both ships were equally to blame; but the steamship suffered no damage.

The Newfoundland Board of Trade's recent annual report stated that many complaints of inefficient steamship service on the west coast had come before its council, the s.s. Glencoe, plying between Port aux Basques and Argentia, seeming to be inadequate for the service.

Investigation had shown that there is not sufficient traffic on the west coast for the two services, the s.s. Glencoe of the railway service, and the s.s. Portia of the coastal service.

A London, Eng., press dispatch of Feb. 8, stated that a whistling buoy marked "made in Ottawa," had drifted ashore at the Scilly Isles, off the coast of Cornwall. It is supposed to have drifted from the Gulf of St. Lawrence, or the Atlantic Coast, but as the number has not been given, it is impossible to establish its identity. The buoy is valued at \$4,000 and will probably be brought back to Canada by one of the Canadian Government Merchant Marine ships.

The s.s. Manchester Shipper arrived at Halifax, N.S., Jan. 30, with the barquentine Maid of England, which had been abandoned at sea, in tow. The barquentine had lost her foretopmast and all head sail, and was leaking considerably. She sailed from Baltimore, Md., early in January, for Halifax, and ran into a storm. One of the crew fell overboard and was lost, and the other members of the crew abandoned the ship, which the master claims was necessary, as they had become restless and refused to work.

The C.P.R. s.s. Empress of Scotland, which returned to New York at the end of January, after completing one of her winter cruises, brought the crew of the schooner Clintonia, of Lunenburg, N.S., which had been abandoned in a sinking condition after three days fight with heavy seas. The men were rescued with great difficulty, as the lifeboat could not get near to the schooner. All the men had to take to the water, from which they were picked up by the lifeboat crew. The schooner's captain set fire to it before leaving to prevent danger to navigation.

The Reid Newfoundland Co's s. s. Kyle, put into Port aux Basques, Nfld., Feb. 8, disabled, with both hand and steam steering gear out of business, steering having been accomplished by an improvised rig. She had sailed from St. John's, Feb. 3, for Louisburg, N. S., her normal run between these ports taking from 24 to 30 hours, and had encountered heavy storms and high seas, and for a while hove off St. Pierre and Miquelon. On Feb. 6, the second officer was washed overboard and drowned, and one of the seamen had a leg broken.

The Bras d'Or Steamship Co. which is reported to have bought a steamship named Princess, in New York, to replace the s. s. Marion, which was burnt at Whycomagh in Oct. 1922, in the Brass d'Or lakes service, has run against the difficulty of not being able to obtain Canadian registry for the ship, owing to the restrictions placed by the U. S. Shipping Board on the transfer of U. S. ships to other countries' registers. A press report from Sydney, N. S., states that on representation being made to Ottawa, that her temporary certificate had been promised before the new order came into effect, registration papers were issued, and she cleared from New York for Sydney, N. S., but we were officially advised, Feb. 15, that the ship, had not been registered in Canada.

A joint meeting of the St. John, N. B., City Council and a citizens' committee, was held Feb. 5, for the discussion of port development. A. J. Gray, a Dominion Public Works Department engineer outlined the character of wharves required to suit the local tidal condi-

tions, and suggested the extension of Partridge Island breakwater as necessary before proceeding with any further dock construction along the Carleton shore. He stated that the Courtenay Bay work, would be finished this year. The construction of wharves is not included in this, but a comprehensive plan for the development is in course of preparation. He also stated that the Courtenay Bay facilities must be linked up with those at West St. John, with the view of an ultimate joint railway terminal. The matter of grain conveyors to three berths, at present unconnected, involving an expenditure of \$140,000, was also discussed.

Province of Quebec.

The name of the s. s. Polana, owned by the Dominion Government, has been changed to Jalobert.

The name of the steam tug Sinmaco, owned by Sincennes-McNaughton Line, Montreal, has been changed to Pierre Racine.

Revillon Freres Trading Co. Ltd., which bought a 100 b.h.p. Densil oil engine from the Crude Oil Engine Co. of Canada, Montreal, last year, has bought a 210 one for installation in a schooner.

A new contract for ferry service between Quebec and Levis has been under consideration by the two city councils. It is stated that tenders will be invited, each party tendering to deposit \$10,000, which will be forfeited if the party declines to enter into a contract according to his tender. The present contract is held by the Levis Ferry Ltd. It is proposed to increase the service required during winters, and to increase the rates for motor vehicles, by 5c, and for automobiles and trucks, a general increase of 5c, according to weight, the rates running from 25c to \$1 each.

Ontario and the Great Lakes.

The Saskatchewan Co-operative Elevator Co's plant, which, it is reported, will be increased by a storage annex of 2,000,000 bush. capacity, is at Port Arthur, and not Fort William, as wrongly stated in our last issue.

The Toronto, Hamilton & Buffalo Navigation Co. notified shippers, etc., Feb. 6, that its car ferry Maitland No. 1, ordinarily running between Port Maitland and Ashtabula, Ohio, had been laid up owing to ice in the latter harbor. Cars usually routed by the ferry are entering Canada via Black Rock and Bridgeburg.

The Hamilton Harbor Commissioners have given notice of a bylaw, providing that it shall be unlawful to build a dock, pier, wharf or other structure, within the harbor limits, until plans and specifications have been filed with the commissioners, and, on their recommendation, approved by the Minister of Marine.

The Hamilton Harbor Commissioner's statement for 1922, shows assets of \$328,604, and no liabilities. The receipts were \$12,042, and disbursements \$7,164.39. The expenditures included repairs to dock \$1,261, waterfront development \$576, patrol boat \$1,589, patrol boat maintenance \$375, salaries \$1,212, travelling expenses \$303.

The Northern Navigation Co. has appointed the following captains and chief engineers for its steamships on the Great Lakes for this year,—Hamonic, W. H. Montgomery, captain; J. McLeod, chief engineer; Huronic, A. M. Wright,

captain; H. Moore, chief engineer; Noronic, H. K. Aitkens, captain; S. Brisbin, chief engineer.

The Port Huron & Sarnia Ferry Co. has bought a steamboat 120 ft. long, 46 ft. wide, with capacity for 35 automobiles on the lower deck and 750 passengers on the upper deck, to replace the s.s. Omar D. Conger, which was practically destroyed in an explosion last year. She is expected to be ready for service between Sarnia and Port Huron by April 1.

The Dominion Towing and Wrecking Co's s. s. Strathcona ran from Port Arthur to Silver Islet, about 21 miles, Feb. 27, cutting a channel through the ice for 7 or 8 miles beyond the harbor breakwater. It is stated that the heavy ice this year does not extend for more than 10 miles from shore, and that it has been known to extend two or three times that distance.

The Peterborough Chamber of Commerce and local motor clubs are asking Canadian National Rys. to establish a motor car ferry service between Cobourg, Ont., and Charlotte, N.Y. The Ontario Car Ferry Co. operates a car ferry service between these points. Fifty per cent. of its capital stock was owned by the G.T.R., and has now passed to Canadian National Rys.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for January, as follows: Superior, 601.86; Michigan and Huron, 579.02; St. Clair, 573.70; Erie, 571.17; Ontario, 244.50. Compared with average January levels for the past 10 years, Superior was 0.26 ft. below; Michigan and Huron, 0.99 ft. below; Erie, 0.58 ft. below, and Ontario, 0.99 ft. below.

The C. P. R. has made the following appointments of captains and chief engineers for its Great Lakes steamship service, for this year,—Alberta, John McIntyre, captain; W. S. Struthers, chief engineer; Assiniboia, James McCannel, captain; A. A. Cameron, chief engineer; Athabasca, M. McKay, captain; G. S. Rae, chief engineer; Kewatin, M. McPhee, captain; C. Butterworth, chief engineer; Manitoba, F. J. Davis, captain; G. D. Adam, chief engineer.

Judgment was given in the Admiralty Court at Montreal, Feb. 6, in favor of the George Hall Coal Co. of Canada, against the s.s. Parks Foster, owned in Chicago, Ill., for damages caused to the s.s. Senator Derbyshire, by collision in the Cornwall Canal, May 27, 1922. It was held that the Parks Foster had broken a rule of the Canal Regulations, and two provisions of the Rules of the Road, and was alone responsible for the casualty. The Deputy District Registrar will assess damages.

The Atlantic Transit Co. is reported to have decided to operate two electrically driven ships, named Twin Cities and Twin Ports, from Duluth, Fort William and Port Arthur, via the Welland Canal, to Oswego, N. Y., where they will lighter cargo to Erie Canal draft, and proceed through the Erie Canal and the Hudson River, to New York, and thence to the West Indies. It is stated that the ships are under construction by the Great Lakes Engineering Works, Detroit, Mich., and that they will be launched early in May.

The Interlake Navigation Co's s. s. Bayersher, which is stated to have been renamed Claremont, is reported to have been sold to Capt. Scott Misner, Sarnia, Ont. She was built at Toledo, Ohio,

in 1910, and was originally named Erwin L. Fisher. During the war she was sold to French interests, and her name changed to Port de Caen, and on the conclusion of the war, was bought by the Bay Steamship Co., London, England, a Hudson's Bay Co.'s subsidiary, and renamed Bayersher, and toward the end of 1922 was bought by the Interlake Navigation Co., Montreal, and transferred to the Canadian register.

During 1922 dredging was done in the St. Mary River, opposite Sault Ste. Marie, to clean up the bottom on the Canadian side, to the same depth as the U. S. channel, so as to create a larger turning basin for ships approaching or leaving the U. S. canal. Heretofore the bottom of the Canadian side has been 1½ ft. less in depth than in the U. S. channel, on the line of the Bayfield ranges. A considerable portion is now available for deeper draft ships, and, at the reopening of navigation, will be marked by two red-spar buoys, one placed 400 ft. south of the Government wharf and the other 400 ft. south of the ferry wharf, near the intersection of the line of the north pier of the U. S. canal with the Canadian canal lower entrance range. The last mentioned buoy will be moved northward 100 ft. shortly after the reopening of navigation. The area southward of the buoys and a line from them to the Bayfield Shoal rock pile, has been swept to full U. S. channel depth.

A Montreal press report stated recently that the Great Lakes Transportation Co. Midland, which bought the s. s. Matoa from U. S. owners, had given a contract for cutting her in two, in order to pass through the canals to the Great Lakes, to Montreal Drydock and Ship Repairing Co. We were officially advised Feb. 12, that no arrangements had been made to cut the ship in two. The press report referred to, also stated that it would be the first time that such an operation has been performed, on a ship bound from the seaboard to the Great Lakes. This is not correct, as such work on westbound ships has been done several times, notably on the C. P. R. steamships Assiniboia and Kewatin, built in Great Britain in 1907 for the company's great lakes steamship service, which were cut in two at Levis, Que., and rejoined at Buffalo, N. Y., in 1907, and again Canada Steamship Lines' s. s. Maplecourt, which was cut in two by Canadian Vickers Ltd., Nov. 4, 1922, and rejoined at Buffalo, N. Y., Dec. 15.

Manitoba, Saskatchewan, Alberta and the Northwest Territories.

The distances between various important points on the northern rivers and lakes quoted at different times are merely estimates, and therefore mostly incorrect. During last summer Dominion surveyors took certain measurements over some of the routes, and the following figures, based on measurements and estimates, have been given as more nearly approximating the correct distances than hitherto: From Fort Nelson to the junction of the Nelson and Liard Rivers, 110 miles; from mouth of the Nelson River to Fort Liard, 65 miles; from Fort Liard to mouth of the South Nahanni River, 95 miles; from mouth of the South Nahanni River to Fort Simpson, 120 miles.

The Alberta and Arctic Transportation Co. will open its services on north-

ern waters, about May 10, when the s. s. Slave River will leave Waterways for Fitzgerald and intermediate points, running on a weekly schedule. Connections will be made with the Alberta and Great Waterways Ry. at Waterways. The motorboat Canadusa, which pushes a 76 ft. covered barge, fitted with sleeping and dining accommodation will make two round trips to Fond du Lac, at the eastern end of Lake Athabasca, during the season, leaving Chipewyan about June 15. At other times she will be open for charter or any special work. The s. s. Distributor will leave Fort Smith about June 16, for Aklavik, about 50 miles from the Arctic Ocean, where connection will be made with Eskimo traders from along the Arctic Ocean. Special round trip rates for tourists will be made between Edmonton, Alta., and Aklavik, at \$240, with meals and berths extra. The total mileage covered is 3,332, and the trip occupies a month. The motorboat Lady Mackworth, which pushes a covered barge with sleeping and dining accommodation, will leave Fort Smith about June 1, for Resolution, on Great Slave Lake, and proceed to Rae, as soon as the lake is clear of ice. She will return to Resolution and take up her Liard River service, leaving Simpson about July 2, making one trip to Liard and return, and one trip to Nelson and return, when she will be available for any work on the navigable waters north of Fort Smith, including Great Bear Lake.

British Columbia and Pacific Coast.

The name of the s.s. Sir J. J. Ltd. No. 10, owned formerly by Sir John Jackson (Canada) Ltd., and now by A. O. Bay, Port Alberni, has been changed to Patsco.

The C.P.R. s.s. Princess Royal, which was laid up during the early winter, was replaced in the British Columbia coast service during January on the night schedule between Vancouver and Victoria.

It has been suggested that a wireless direction finding station be equipped near the entrance to the Juan de Fuca Strait, which it is claimed would be of great value to ships entering the strait in time of fog. At present, bearings are given by the U.S. station at Tatoosh. Pachena Point and Carmanah are mentioned as suitable points, with possibly a second station inside the strait at Sheringham Point, so that cross bearing might be obtained.

The C.P.R. s.s. Princess Beatrice, and the Union Steamship Co. of British Columbia's s.s. Camosun, collided in McKay Reach, north of Princess Royal Island, towards the end of January. The damage to the Princess Beatrice was heavier than to the Camosun, the former being beached at Prince Rupert for temporary repairs after all her cargo had been removed, and she subsequently proceeded to Esquimalt for final repairs.

North Vancouver City Council has decided to reopen the ordering of a new ferry steamship from Napier and Miller, Glasgow, Scotland, provided the original offer is still open. The terms submitted by Napier and Miller were for building a ship to certain specification, for \$43,000, delivered at Vancouver, the offer to hold good until Jan. 15. One of the last acts of last year's city council was to decide against the proposal.

Pilotage on the British Columbia coast is, according to newspaper reports, in

a chaotic condition. Three local organizations are competing for the work and it is said that there is intense competition between them, and apparently a race is made immediately a ship appears on the horizon, and the winner gets the job. It is said that nothing short of a disaster seems likely to bring about a union of the different organizations. The B. C. Pilotage Association, the Vancouver Pilots Ltd., and the third organization headed by Capt. R. A. Batchelor, are each competing for the pilotage work on the coast.

The s.s. Margaret Coughlan, owned by Canadian Western Steamships Ltd., Vancouver, was sold by auction at Vancouver, Feb. 1, following an action by the bondholders, to Alfred Bull, representing John A. Kent, insurance broker, Toronto, on behalf of the bondholders, for \$175,000. The sale was conducted by J. F. Mather, Court Registrar, Vancouver, under an order made by Mr. Justice MacDonald, recently. We are advised that it is the intention to incorporate a company to own the ship, with nominal headquarters at Toronto, but it has not been decided as to what service she will be operated in. She was built by J. Coughlan & Sons, Vancouver, in 1920, is screw driven by engine of 267 h.p., and equipped with wireless. Her dimensions are: Length 411.5 ft., breadth 54.1 ft., depth 27.5 ft.; tonnage, 5,704 gross, 3,531 net. Her construction cost is said to have been \$1,250,000.

Mainly About Marine People.

Capt. F. P. Armstrong, who died at Vancouver, B.C., Jan. 26, aged 64, was, more or less, connected with transportation nearly all his life. He was born at Montreal and commenced business life as assistant secretary in the Montreal Harbor Commissioners' office. His great-grandfather had been one of the commissioners about a century ago, when the appointments were made from England. He went west about 1880, and was a member of the C.P.R. survey party under Major Rogers, which is alleged to have discovered the Rogers Pass, and also the Eagle Pass, in 1881. In 1883 he took up land in the Lake Windermere district, and in the following year built two flat bottomed boats to take his produce to Golden City, and First Crossing, now Donald. In 1885 he revisited Montreal, and ordered boilers and engines for steamboats. This machinery was built at Sorel, Que., and sent west to him. In 1886 he built the s.s. Duchess, 74 ft. long, with 17 ft. beam, which was the first steamboat to run on the Columbia River. Other craft were added and the s.s. North Star was run on the Kootenay River as far south as Jennings, Mont. He was the pioneer of steamboat navigation on both the Upper Columbia and Upper Kootenay Rivers, and was one of a party to go by canoe from Lake Windermere, by the Columbia River, to Astoria, on the Pacific Ocean, to report on the navigability of the river. At the outbreak of war he volunteered for service, but his services were not accepted until some time later, when he was engaged in organizing the shallow draft navigation on the Tigris River in Mesopotamia, and later, on the Nile, in Egypt. On his return to Canada, he was engaged with the Dominion Public Works Department at Nelson, B.C., and met with an accident in Oct., 1922, breaking a leg, and receiving some internal injuries, which in conjunction with a com-

plaint contracted in the east during the war, caused his death. L. O. Armstrong, of the Colonization and Development Department, C.P.R., is a brother.

Claude Cameron Bonter, who has been appointed Assistant Passenger Traffic Manager, all lines, Canada Steamship Lines Ltd., Montreal, was born at Toronto, Nov. 13, 1884, and entered navigation service in 1905, since when he has been, to 1910, baggage agent, Richelieu & Ontario Navigation Co., Toronto; 1911 to 1912, Assistant Baggage and Claims Agent, same company, Montreal; 1913 to 1915, Special Agent, Passenger Traffic Department, Canada Steamship Lines, Ltd., Montreal; 1916 to Jan. 24, 1923, General Passenger Agent, Eastern Lines, same company, Montreal.

J. Cameron-Head, Deputy Chairman, Union Castle Line, and director, Royal Mail Steam Packet Co., Pacific Steam Navigation Co., and Nelson Lines, who died recently, aged 71, was a grandson of Sir Francis Bond Head, Bart., a former Governor of Upper Canada.

Mrs. G. J. Desbarats, wife of the Deputy Minister of the Naval Service, and Mrs. R. W. Reford, wife of the President of Robert Reford Co., Ltd., Montreal, attended the drawing room given by the Governor General and Lady Byng at Ottawa, Feb. 4.

Wm. Duff, Lunenburg, N. S., has been re-elected chairman of the House of Commons Marine and Fisheries Committee.

W. W. Foulds, Manager, New Zealand Shipping Co., Montreal, was nominated recently, as the Shipping Federation of Canada's representative on the Montreal Board of Trade's council.

Miss Mary Theresa Foy, daughter of the late John Foy, formerly President, Niagara Navigation Co., and sister of Frank C. Foy, Canadian Passenger Agent, New York Central Rd., and J. V. Foy, General Passenger Agent, Canada Steamship Lines, was married at Toronto, Feb. 1, to Stuart B. Heath.

C. Gardner Johnson, of Vancouver, B. C., representative of the Johnson Line, the Williams Steamship Co., and the Yamashita Kisen Kaisha, sailed from San Francisco, Cal., recently, on the Johnson Line's motorship Lima, for a business trip to the various Central American ports.

J. W. Jones, of the Cunard Line's London staff, was entertained to dinner, and presented with a silver tray, by the members of the North Atlantic West-bound Freight Association, recently, on his retirement after 50 years service with the company.

J. S. Leitch, Managing Director, Collingwood Shipbuilding Co., Collingwood, Ont., was married at Toronto, Feb. 8, to Mrs. Porter, widow of the late Dr. J. H. Porter, Toronto, and daughter of H. Y. Telfer, Collingwood. Mr. and Mrs. Leitch sailed from St. John, N.B., by the s.s. Melita, to spend 2 or 3 months in Great Britain and France.

Dr. W. L. McDougald, President, Montreal Harbor Commissioners, has resigned as a director of Canada Steamship Lines Ltd.

Capt. Charles Martin, master mariner and pilot on the St. Lawrence River, for the past 25 years, and for some time in Montreal Transportation Co's service, died at Kingston, Ont., Feb. 4.

Lady McMillan, wife of Sir Daniel McMillan, K.C.M.G., of Winnipeg, ex-Lieutenant Governor of Manitoba, who died in California, Feb. 1, was a sister

of S. H. Lindsay, Secretary, Collingwood Shipbuilding Co., Collingwood, Ont.

D. Murray has been appointed harbor master, Chemainus, Vancouver Island, B. C., at \$200 a year, to be retained from fees collected from ships entering that port, vice P. W. Fox, whose services have been dispensed with, as he is living at Vancouver.

C. H. Nicholson who has been appointed Manager, Canada Atlantic Transit Co., and Ontario Car Ferry Co., and in a consultative capacity in connection with the G. T. R. car ferries operating across Lake Michigan, between Grand Haven and Milwaukee, and across the Detroit River, between Windsor and Detroit, with office at Montreal, was born at Belleville, Ont., and was educated there, at Queen's University, Kingston, Ont., and University of Maryland, Baltimore. He entered transportation service with the Richelieu and Ontario Navigation Co., and subsequently became purser on one of the steamships operated by C. F. Gildersleeve, on the Bay of Quinte and River St. Lawrence, remaining in that position for three years, when he became a captain, and was master successively of the steamships, Hero, Hastings, Norseman and North King. When C. F. Gildersleeve organized the Lake Ontario and Bay of Quinte Steamboat Co., he became General Freight Agent, and, until 1903, represented that company at Rochester, N. Y. During 1903 he was Manager of Transportation, Muskoka Lakes Navigation and Hotel Co., Gravenhurst, Ont.; from Feb. 1904 to Nov. 30, 1909, Traffic Manager, Northern Navigation Co., Sarnia, Ont., and from Dec. 1, 1909 to Dec. 31, 1922, Manager, Grand Trunk Pacific Coast Steamship Co. Vancouver, B. C.

J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Montreal, has been visiting Hamilton, Bermuda, with Mrs. and the Misses Edith and Helen Norcross.

Canadian Government Merchant Marine Operation, Etc.

Appointments.—R. B. Teakle, heretofore Manager, Canadian Government Merchant Marine, has been appointed General Manager, Canadian Government Merchant Marine and Grand Trunk Pacific Coast Steamship Co., reporting to the Chairman, Sir Henry Thornton. Office, Montreal.

B. C. Keeley, heretofore General Agent, Canadian Government Merchant Marine, Vancouver, B. C., has been appointed Pacific Coast Manager, C. G. M. M. The Grand Trunk Pacific Coast Steamship Co.'s ships will also be operated under his immediate jurisdiction.

E. E. Tedford, heretofore Marine Superintendent, has been appointed General Superintendent.

D. B. Carswell, heretofore Senior Assistant Superintendent Engineer, has been appointed Superintendent Engineer, vice I. J. Tait who has left the service. Office, Montreal.

John Young, heretofore Junior Assistant Superintendent Engineer, has been appointed Senior Assistant Superintendent Engineer, vice D. B. Carswell promoted. Offices, Montreal in summer and Halifax, N. S., and St. John, N. B., in winter.

A. Watson has been appointed Junior Assistant Superintendent Engineer, vice —, Winter, resigned. Offices, Montreal in summer, and Halifax N.S., and St. John, N.B., in winter.

A. G. MacLeod, heretofore in Traffic Department, Vancouver, B. C., has been appointed Contracting Freight Agent there, vice C. C. Kernahan, resigned.

Officers of Steamships.—The following appointments have been made since those mentioned in our last issue—s.s. Canadian Observer, J. P. Tait, master; Sheba, A. E. Seaman, master; J. M. Bowden, chief engineer.

The Grand Trunk Pacific Coast Steamship Co., which operates the steamships Prince Albert, Prince George, Prince John and Prince Rupert, in the northern coast freight and passenger service, has been placed under the Canadian Government Merchant Marine for operation, as from Jan. 1, and is under the immediate jurisdiction of B. C. Keeley, Pacific Coast Manager, C. G. M. M., Vancouver, reporting to R. B. Teakle, General Manager, Montreal.

The Barquentine S. F. Tolmie, bound from Newcastle, Australia, to San Francisco, Cal., with coal, put in at Honolulu, about the middle of January, for repairs, having lost her foretop and foretopgallant masts and top gear, during a heavy storm. She was built by Victoria (B. C.) Shipowners Ltd., under special aid from the Dominion Government, and since being handed over to Canadian Government Merchant Marine for operation, has been used chiefly in taking lumber from British Columbia to Australia, and coal from Australia to San Francisco.

West Indies Passenger Rates.—Commencing March 1, special minimum round trip fares are effective on the steamships Canadian Fisher and Canadian Forester, as follows, from Halifax, N. S., to Hamilton, Bermuda, \$70; to Kingston, Jamaica, \$150; to Belize, British Honduras, \$225.

Proposed Canadian Intercoastal Steamship Service.

The Canadian Manufacturers' Association, which has, during the past 10 years been gathering information as to the possibilities in connection with an intercoastal steamship service between Canadian ports on the Atlantic and Pacific Oceans, via the Panama Canal, circularized its members again recently to obtain additional and up to date information. What was obtained previously appeared to indicate that sufficient west-bound tonnage was not available to warrant a regular service. It is felt that there may have been a considerable change in the situation since those details were gathered, and questions have been sent to manufacturers interested, requesting information covering commodities shipped, average yearly tonnage, whether such tonnage would be routed by a new service, whether shipments are made regularly, or are seasonal, and whether such shipments move in carload, or less than carload lots. This information is only being gathered regarding shipments to British Columbia ports. It is pointed out that the various factors entering into the movement would have to be considered, such as rates from point of origin to Montreal or St. John, N. B., terminal charges, ocean rate, insurance and wharfage charges. Present rates from New York range from 30c. per 100 lb., on heavy iron and steel goods, to as high as \$2 per 100 lb., on small lots of highly manufactured goods. Time is also a matter to be considered; the time now taken by shipments from New York to Vancouver, is approximately 35 days.

Dominion Wreck Commissioners' Enquiries and Judgments.

Enquiry has been held and judgment delivered in connection with the following casualty:—

Grounding of s.s. Canadian Farmer.

Arising out of the enquiry into the striking of a submerged object in Stewart Passage, B.C., June 18, 1922, by the s.s. Canadian Farmer, the decision in which was given in Canadian Railway and Marine World for January, a further enquiry into charges made by the then master of the ship, Capt. W. J. Boyd, since dismissed, against Capt. M. Edcombe, then chief officer, and J. Abrams, then chief engineer, of falsifying entries in the log, was held by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. A. P. W. Williamson and Commander H. M. Watkins, as assessors. The court, after hearing a considerable amount of evidence, much of which was not only very conflicting, but also unconvincing, found that the charges preferred were not only trivial and futile, but were utterly unwarrantable and unjustifiable, and, without a shadow of doubt, unproved. The court therefore, being mindful of the fact that one of its duties is to discountenance and avoid the waste of public money, ordered that the cost of the proceedings, viz.: \$246.75, being \$206.75 for taking and transcribing evidence, and \$40 assessors' fees, be imposed on Capt. W. J. Boyd, for his audacious attempt to imperil the character and integrity of those against whom he preferred his unfounded charges, and upon none of whom could the slightest reflection be cast.

Vancouver Grain Elevators.—The Woodward Grain Co., Winnipeg, is reported to be prepared to build a grain elevator plant at Vancouver, with an initial storage capacity of 500,000 bush., and ultimate capacity of 1,500,000 bush., and an elevator workhouse of 150,000 bush capacity. It was stated that construction would commence about the end of February, in order to have the plant in full operation for the new crop. The city is prepared to grant partial exemption from taxation. The Pacific and Coast Grain Elevator Ltd. is being organized at Vancouver, with \$1,000,000 capital, to build, own and operate grain elevators.

Vancouver Ocean Shipping Statistics.

—The following figures show the number and tonnage of ocean going ships, passing inward and outward at Cape Flattery, to and from Vancouver, not including ships sailing to, and from Puget Sound, British Columbia, or Alaska ports, and the cargo tonnage landed and shipped, not including lumber, for 1922 and 1921:—

	1922	1921
Number	716	496
Tons, gross	3,967,389	2,946,659
Tons, net	2,473,959	1,852,844
Cargo landed, tons	790,739	669,750
Cargo shipped, tons	764,182	829,906

North Land Navigation Co. Ltd. has been incorporated under the Dominion Companies Act, with \$100,000 authorized capital, and office at Montreal, to convey passengers, mail and merchandise on Canadian inland and coast waters, and on the high seas, and to own and operate ships and other transportation facilities. The incorporators are: Jos. Jean, J. P. Lavoie, E. Normand, F. Lemaire and E. Patenaude, Montreal.

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

Dominion Government Endorsements for Shipbuilding. The Act Respecting the Shipbuilding Industry, passed by the Dominion Parliament in 1920 which authorized the Government to assist in financing the construction of ships, in existing Canadian shipyards, by endorsing, under certain conditions, notes given by the purchaser in favor of the shipbuilder, for 50 p. c. of the price of the ships required, required that particulars of the endorsements made, or liabilities incurred, should be submitted to Parliament. The Finance Minister submitted a return to the House of Commons on Feb. 1, stating that there had been no transactions under the act during the past year.

Canadian Vickers Ltd., Montreal, has the following ships laid up at its plant during the winter for the work stated: George Hall Coal Co's s.s. Ignifer, 1,137 tons, drydocked for survey, repair, bow damage and sundry repairs; s.s. John B. Ketchum 2nd, 1,109 tons, drydocked for survey, repairs to bow and after port quarter damage and sundry repairs; s.s. John F. Morrow, 1,840 tons, drydocked for survey and overhaul; s.s. Lehigh, 1,506 tons, drydocked for survey and winter overhaul; Imperial Oil Ltd., s.s. Iocomo, 1,669 tons, winter overhaul; Ontario Transportation & Pulp Co's s.s. Chicago Tribune, 1,689 tons, drydocked for survey, repair bottom deck and bow damage; Marine Department's dredge 16, winter overhaul.

Davie Shipbuilding and Repairing Co. Lauzon, Que.—The carpenter shop, with its contents, machinery, etc., was destroyed by fire, Jan. 29, the damage being estimated at considerably over \$100,000. Six steamships were in the yard, but suffered no damage. The company has some heavy repair work in hand, including the rebuilding and remodelling of Canada Steamship Lines' s.s. Richelieu formerly Narragansett, for the Saguenay service.

Halifax Shipyards Ltd., Halifax, N.S. did the following repair work during January.—Canadian Government Merchant Marine, s.s. Canadian Fisher, scraping and painting, removing ballast in way of thrust foundation, calking seams, rivets and electric welding, opening up sea valves, and rudder overhauled, undocked Jan. 15; s.s. Canadian Sapper, scraping and painting, drawing tail shaft for examination, overhauling sea connections, hull work, etc., undocked Jan. 18; s.s. Canadian Gunner, damaged by fire in holds 1 and 2, at St. John's, Nfld., ship cleaned and certain damaged work opened up for survey, extensive hold repairs, undocked Jan. 27, repairs completed Feb. 7; s.s. Canadian Otter, scraping and painting, undocked Jan. 30; Dominion Coal Co., s.s. Turret Court, overhauling sea connections, cleaning and painting, repairing bow damage, undocked Jan. 9; s.s. Wabana, boiler and engine repairs, bilge and tank top ceiling repairs, undocked Jan. 22, repairs completed Feb. 7; Royal Mail Steam Packet Co., s.s. Chaudiere, general repairs, survey, hull repairs, scraping and painting, undocked Jan. 12.

The company has been given a contract to repair the Commercial Cable Co's s.s. John W. Mackay, which grounded on Thrum Cap, near the Halifax harbor entrance, early in February, the work to be completed in 18 days. It was to have been commenced about

Feb. 19, or as soon as the oil and cable had been removed from the tanks.

Newfoundland Drydock Ltd., St. John's, Nfld.—The Newfoundland Government's s.s. Prospero, which grounded at Small Island, Green Pond, on the east coast of the Island, Dec. 16, 1922, was docked for survey at the end of January, on behalf of the London Salvage Association. The damage is said to be extensive, a new stem being required, and also a considerable number of new plates. The work in progress on the steamships Helder and Capto was to be completed before starting the Prospero repairs.

Northern Boat Building Co., Edmonton, Alta.—Three schooners have been completed at this plant, ready for their journey to the Arctic coast, on the reopening of navigation on the Mackenzie River. They are intended for the Eskimo fishing business in the Mackenzie River delta, the headquarters of which are at Aklavik. Another schooner is under construction for Inuitok, an Eskimo trader and navigator, for service in the delta and along the Arctic coast. It will be equipped with auxiliary power, and will be the fourth of the kind built at Edmonton for the same service. Some other boats are being built for use on Great Bear Lake, for transporting hunters' baggage, etc., from Fort Norman. A shallow draft boat is being fitted up for police patrol service, to operate out of McMurray. It is decked fore and aft and provided with a quarter tunnel stern to enable it to run in very shallow water. It will be equipped with a 9-12 universal engine. It is built of yellow cedar and oak, is 22 ft. long, and will draw about 12 in. of water.

The Northern Trading Co's s.s. Northland Echo is being rebuilt at Waterways, ready for the coming season. The framing has been assembled, and the sheathing commenced.

Prince Rupert Drydock and Shipyard, Prince Rupert, B. C., did the following repair work during January.—Grand Trunk Pacific Coast Steamship Co. steamships Prince Albert and Prince Rupert, general overhaul; Coastwise Steamship and Barge Co. s.s. Marmion, docked, painted, hull repairs and general overhaul; Dominion Government s.s. Marfish, general overhaul and extensive hull repairs; also 21 fishing ships overhauled.

Toronto Dry Dock Co., Toronto, has been given a contract by the Dominion Public Works Department, for repairing the dredge P.W.D. no. 117.

Victoria Machinery Depot Co., Victoria, B.C. did the following repair work during January.—Canadian Government Merchant Marine s.s. Canadian Transporter, 4,176 tons, docked, cleaned, and painted, hull, engine and boiler repairs; C.P.R. s.s. Princess Patricia, 1,158 tons, new tail and shaft and bronze propeller and general repairs; s.s. Charmer, docked cleaned and painted, hull repairs, new plates and frames; Naval Service Department's s.s. Stadacona, docked, cleaned and painted, tail shaft drawn for inspection, repairs; Public Works Department's steam tug Point Ellice, 205 tons, docked, propeller changed, hull repairs; dump scow 306, repairs to doors; Brackman-Ker Milling Co. s.s. Grainer, 144 tons, boiler repairs; Lummi Bay Fishing and Packing Co. motorship Bonilla, docked, cleaned and painted, and hull repairs; and a scow for A. O. Ruscoe, docked, cleaned, painted and repairs.

Yarrows Ltd., Victoria, B. C., did the following repair work during January.—H. M. C. S. Patrician, docked on marine railway, repairs to plates and frames, extensive refit and overhaul; hull cleaned, scraped and painted; C. P. R. s.s. Princess Beatrice, 1,290 tons, docked on marine railway for extensive repairs to bow, new stem and forefoot, and considerable new planking and general repairs due to collision; Central Wharfage Co. s.s. Forager, boiler repairs; Pacific Salvage Co. s.s. Algerine, 592 tons, new bronze propeller blades; s.s. Salvor, docked on marine railway, underwater repairs, cleaned and painted.

Canadian Pacific Railway Ocean Steamship Services.

Reference was made in our last issue to a Liverpool press report that the company intended having the s. s. Montreal which has been laid up at Glasgow, Scotland, for some time, reconditioned and placed in service between Glasgow and Montreal. We are officially advised that there is no truth in the report.

The s. s. Empress of Canada is scheduled to sail from Vancouver, B. C., March 8, on an Oriental cruise, arriving at Yokohama, March 20, leaving the next day for Kobe, and thence proceeding to Shanghai, Hong Kong and the Philippine Islands. The return trip will be made on the s. s. Empress of Russia, stops being made at Hong Kong, Shanghai, Nagasaki, Kobe, Osaka, Tokyo and Yokohama. The party will join the s. s. Empress of Australia at Yokohama, for Vancouver, arriving there, May 23.

Purchase of Tug Murray Stewart.—Minister of Marine and Fisheries, E. Lapointe, stated in the House of Commons recently, in answer to questions by R. B. Hanson, York-Sunbury, N.B., that the Marine & Fisheries Department had bought the tug Murray Stewart, to replace the lighthouse tender C.G.S. Lambton, lost on Lake Superior in the spring of 1922, and to be stationed at Georgian Bay ports at the end of each season of navigation, to render such assistance in the event of ice formation as may be necessary to enable ships handling grain to move freely. The tug's gross tonnage is 234.46, and registered tonnage 92.25. It was built by Port Arthur Shipbuilding Co. in 1918, and was bought from the registered owner, J. F. M. Stewart, Toronto, for \$80,000. Minister of Marine Lapointe stated in the House of Commons, Feb. 19, in answer to questions by H. A. Stewart, Leeds, Ont., that the Department had invited tenders for repairs to the tug, which were received up to Feb. 8 as follows:—P. Payette Co., Penetanguishene, Ont., \$4,489; Midland Shipbuilding Co., Midland, Ont., \$5,862; Great Lakes Foundry & Machine Co., Midland, \$6,077; Midland Engine Works, Midland, \$8,607.45.

The G. T. R. Elevator at Montreal, the only one in the port not controlled by the Montreal Harbor Commissioners, is reported to have been sold to the commissioners. The price has not been announced, but it is stated that the right of use to the railway is guaranteed as a condition of sale, and that there are other protective clauses.

Lake Steamship for J. F. M. Stewart.

Canadian Railway and Marine World for February, mentioned that J. F. M. Stewart, Toronto, was negotiating in England for the construction of a full Welland canal size cargo steamship. The negotiations are still in progress with Smith's Dock Co., Southbank-on-Tees, for a steel single deck steamship of the following dimensions:—length overall 256½ ft., length b.p. 250 ft., breadth over steel plating 42½ ft., depth moulded 18½ ft., d.w. carrying capacity 14 ft. draft 2,300 tons. The specifications provide for a ship with straight stem, elliptical stern, engine and boiler casing placed aft, raised forecabin with texas on top and navigating and wheel house above. The steel hull to have cellular double bottom all fore and aft, and after peak tanks, and the ship to be rigged as a two masted fore and aft schooner. She will be classed 100 A1 at Lloyd's for service on the Great Lakes and St. Lawrence River and Gulf, and built under special survey. Provision is made for 3 watertight bulkheads and 2 non watertight bulkheads, dividing the hold into three compartments. For handling cargo, etc., a double cylinder windlass and two double cylinder 7 x 10 in. steam winches are provided for. The propelling machinery to consist of direct acting, surface condensing, triple expansion engines with 3 inverted cylinders, 16, 26 and 44 in. diam. by 33 in. stroke, supplied with steam by 2 cylindrical, multitubular boilers, each 12½ ft. diam. by 10½ ft. long, at 180 lb. working pressure under forced draft. Accommodation for the captain, navigating officers and owner, to be in the forecabin and for engineers, stewards, etc., in the deckhouse aft.

Early Chart of St. Lawrence River.

Robert W. Reford, President of The Robert Reford Co., Montreal, and of the Shipping Federation of Canada, bought an early chart of the St. Lawrence River, in London, Eng., recently, for £1,080. It is entitled, "A plan of the River St. Lawrence, from Green Isle to Cape Cairouge, by James Cook." It is 115 x 22 in. and is in excellent condition. It was among the naval and other relics of the late Admiral Sir W. Fanshawe Martin, and is undoubtedly the original from which Capt. Cook made at least one replica, now in the British Admiralty library. The purchase is an interesting one, from a Canadian point of view, as, although Capt. Cook's pioneer navigation work is generally looked upon as being concerned with Australia and the southern Pacific

Ocean, he was one of the navigators who piloted General Wolfe up the St. Lawrence to Quebec, and during the siege of Quebec, he did considerable survey work. He was later engaged in fighting in Newfoundland, and subsequently made a survey of the St. Lawrence Gulf and River.

Red Line, Limited, has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital, and office at Ottawa, to carry on a general transportation business by land and water, and to own and operate ships. The incorporators are: E. F. Newcombe, H. H. Ellis, W. R. Dillon, F. H. Emra and J. Brown, Ottawa, Ont.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Dearborn Chemical Co., 332 South Michigan Ave., Chicago, Ill. has issued an illustrated booklet, "Applying Science to Inhibit Rust", treating of its product, No-Ox-Id, as applied to the elimination of losses from rust and corrosion. It deals, among other things, with the application of the product in the numerous phases of the iron and steel industry, including railway and marine service.

Franklin Railway Supply Co. has appointed T. F. Whelan as Special Engineer, with headquarters in Chicago. He was a locomotive man for 26 years, and for the last 6 years was editor of the Brotherhood of Locomotive Engineers' Journal.

Ohio Brass Co., Mansfield, Ohio, has issued an illustrated catalogue of its Imperial line of headlights, including carbon arc, luminous arc, and incandescent headlights, wiring equipments and repair parts.

Transportation Conventions in 1923.

March 13 to 15.—American Railway Association, Division 4, Engineering, Chicago, Ill. E. H. Fritch, 431 South Dearborn Street, Chicago, Ill.

March 13 to 15.—American Railway Association, Division 4, Signal Section, Chicago, Ill. H. S. Balliet, 30 Vesey Street, New York.

May.—International Railway Fuel Association, Cleveland, Ohio. J. G. Crawford, 702 East 51st Street, Chicago, Ill.

May 1 to 4.—Air Brake Association, Denver, Col. F. M. Nellis, 165 Broadway, New York.

May 7 to 9.—American Association of Engineers, Norfolk, Va. C. E. Brayer, 63 East Adams Street, Chicago, Ill.

May 9.—American Association of General Baggage Agents, Chattanooga, Tenn. E. L. Duncan, 332 South Michigan Ave., Chicago, Ill.

May 9 to 11.—American Railway Development Association, St. Louis, Mo. A. Leckie, Industrial Agent, Kansas City Southern Ry., Kansas City, Mo.

May 16 to 18.—Association of Railway Claim Agents, Denver, Col. H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

May 22 to 24.—American Railway Association, Division 6, Purchases and Stores, Chicago, Ill. W. J. Farrell, 30 Vesey Street, New York.

June 13 to 15.—American Association of Railroad Superintendents, Kansas City, Mo. J. Rothschild, 400 Union Station, St. Louis, Mo.

June 18.—American Train Dispatchers Association, Chicago, Ill. C. L. Darling, 1810 Malters Bldg., Chicago, Ill.

June 20.—American Railway Association, Mechanical Division, Chicago. V. R. Hawthorne, 431 South Dearborn Street, Chicago, Ill.

June 25.—American Society for Testing Materials, Atlantic City, N.J. C. L. Warwick, 1315 Spruce Street, Philadelphia, Pa.

Sept. 18 to 20.—Roadmasters' and Maintenance of Way Association, Chicago, Ill. P. J. McAndrews, Chicago & Northwestern Ry., Sterling, Ill.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, acting Chairman, 805 Boyd Bldg., Winnipeg, Man.

Canadian Electric Railway Association—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, acting Chairman, 805 Boyd Building, Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke Street, Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Office, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Ry., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorffler, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Building, Winnipeg, Man.

DOMINION TOWING & WRECKING CO., LIMITED

Tug Strathbozie
Tug Strathmore
Tug Strathbungo
Tug Strathbell

Harbour Tug Service

Lighter Strathbuoy—Capacity, 700 tons.

Equipped for all kinds of Towing, Wrecking, Etc.

Sand and Gravel supplied for Concrete Work, Rock and Soil Filling for Cribwork.

Dock Telephone, South 180; Head Office, South 2383.

JOHN BELL, General Manager, 509 Grain Exchange, Fort William, Ont.

Malleable Castings

High Grade Material
First Class Service

Galt Malleable Iron Co., Limited - GALT, ONT.

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under
Positions wanted and Positions Vacant, 3c. per word.
Equipment for Sale advertisements, 4c. per word.
Allow five words where replies are to be sent to a box number. Minimum order—\$1.
Rates under other headings and for display advertisements on application.

Modern Marine Machinery

Automatic Steam Towing Machines, Ship Windlasses, Cargo and Deck Winches, Steam Capstans, Dock Gypsies, Steering Engines, Hydraulic Hoists, etc.

Manufactured by the

CORBET FOUNDRY & MACHINE CO., LIMITED, Owen Sound, Canada.

CANADIAN PACIFIC RAILWAY COMPANY Dividend Notice

At a meeting of the Board of Directors held to-day the following dividends were declared:—

On the Preference Stock, two per cent. for the half-year ended 31st December last:

On the Common Stock, two and one-half per cent. for the quarter ended 31st December last, being at the rate of seven per cent. per annum and in addition three per cent. per annum from Special Income Account.

Both dividends are payable 31st March next to Stockholders of record at three p.m. on 1st March next.

By order of the Board,

ERNEST ALEXANDER.

Secretary.

Montreal,
12th February, 1923.

FOR SALE

Cross Compound Inclined Condensing Engine, 24" x 48" x 60" stroke, suitable for 150 lbs. pressure, with shafting and radial paddle wheels. All in first class condition.

The Upper Ottawa Improvement Company,

194 Middle Street - Ottawa, Ont.

IT PAYS to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better RESULTS.



THIRD EXTENSION OF TIME

Notice is hereby given that the time for the reception of tenders for the Esquimalt, B.C., Dry Dock Machinery, is further extended to Thursday, March 15, 1923.

By order, R. C. DESROCHERS, Secretary.
Department of Public Works,
Ottawa, February 7, 1923.

THE VICTORIA ROLLING STOCK & REALTY CO. OF ONTARIO LIMITED.

NOTICE is hereby given that the Annual Meeting of the Shareholders of the Victoria Rolling Stock & Realty Company of Ontario, Limited, will be held at the offices of Messrs Osler & Hammond, 21 Jordan Street, Toronto, on Wednesday, March 7, 1923, at twelve o'clock noon, for the reception of the Annual Report and election of Directors for the ensuing year.

By order, G. T. CHISHOLM, Secretary.
Toronto, February 20, 1923.

Ottawa Traction Company, Limited

Ninth Annual Report for the Year Ending December 31st, 1922

Your Directors have much pleasure in submitting their Ninth Annual Report for the year ending December 31st, 1922.

The amount received from The Ottawa Electric Railway Company during the year was \$279,069.00, with which was paid the usual quarterly dividends of one per cent, and a bonus of one per cent.

The efforts of The Ottawa Electric Railway Company during the past year have been directed towards the maintenance of the plant and equipment in an efficient condition.

During the year a site for a checking office at the corner of Sussex and John Streets was purchased and occupied by the Company.

This should result in improved facilities for handling the car service in that section of the city.

Respectfully submitted.

T. AHEARN,

President.

Ottawa, February 5th, 1923.

OTTAWA TRACTION COMPANY LIMITED

STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED DECEMBER 31st, 1922.

Expenditure

To net Income transferred
to Profit and Loss Ap-
propriation Account.....\$279,069.00

\$279,069.00

Income

By Dividends received from
The Ottawa Electric Rail-
way Company\$279,069.00

\$279,069.00

Profit and Loss Appropriation

To Dividend No. 32, paid
April 1st, 1922—1%.....\$ 55,812.00
To Dividend No. 33, paid
July 3rd, 1922—1%..... 55,812.00
To Dividend No. 34, paid
Oct. 2nd, 1922—1%..... 55,815.00
To Dividend No. 35, pay-
able Jan. 2nd, 1923—1%
and bonus 1%..... 111,630.00

\$279,069.00

By Balance transferred
from Profit and Loss Ac-
count\$279,069.00

\$279,069.00

BALANCE SHEET AS AT DECEM- BER 31st, 1922.

Assets

Dividend receivable, The
Ottawa Electric Rail-
way Company.....\$ 111,630.00
18,605 shares of The Ot-
tawa Electric Railway
Co., par value \$100 each 5,581,500.00

\$5,693,130.00

Liabilities

Dividend No. 35, payable
Jan. 2, 1923, 1% and
bonus 1%.....\$ 111,630.00
Capital stock issued..... 5,581,500.00

\$5,693,130.00

Auditor's Report to the Shareholders

We have audited the accounts of your Com-
pany for the year ended December 31st, 1922,
and certify that the foregoing Balance Sheet
and Income and Expenditure Accounts are
properly drawn up so as to exhibit a true and
correct view of the state of the Company's
affairs according to the best of our information
and as shown by the books of the Company.

We have received all the information and
explanations required by us.

CRAWLEY, MILNE & CO.,

Chartered Accountants.

Ottawa, February 5th, 1923.

OTTAWA TRACTION COMPANY, LIMITED

Directors

T. AHEARN - President
WARREN Y. SOPER - Vice-President
T. F. AHEARN, G. P. MURPHY, C. M. G.
E. N. SOPER J. F. SMELLIE
T. WORKMAN F. D. BURPEE
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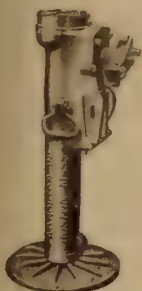
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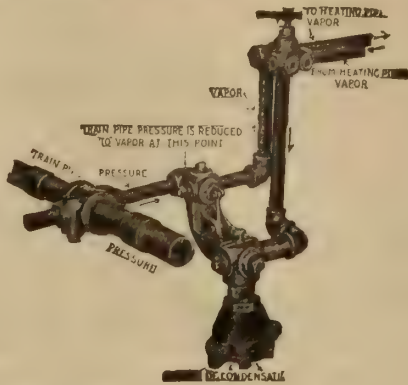
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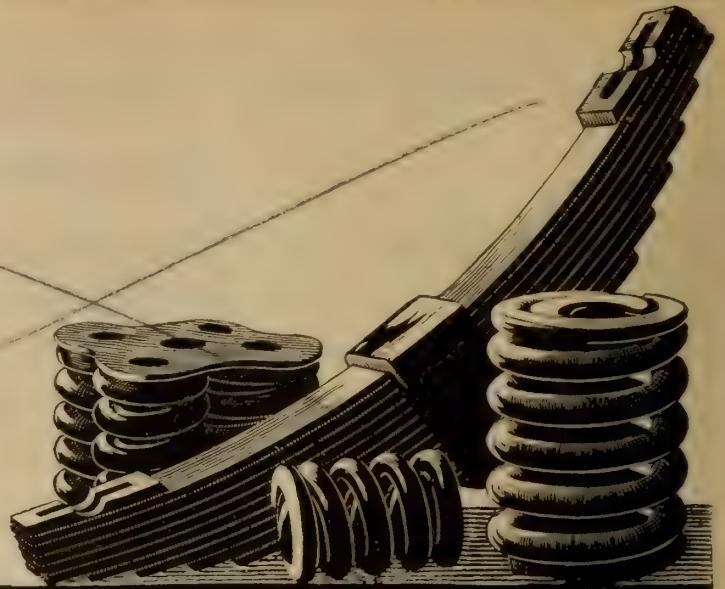
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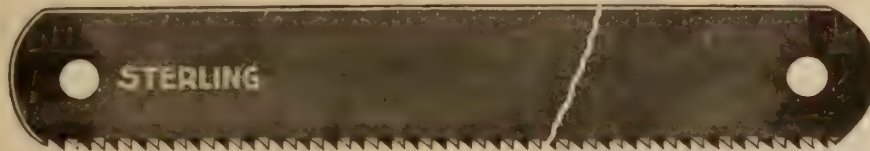
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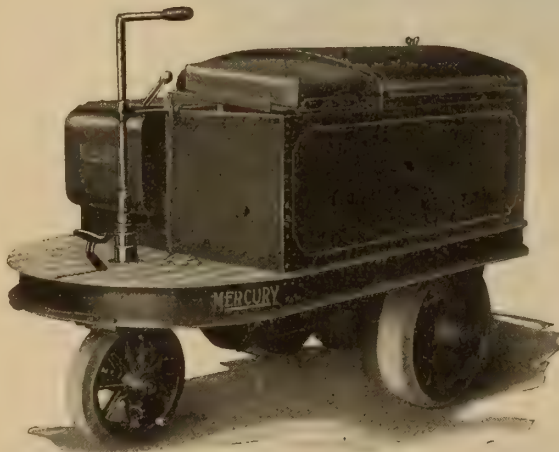
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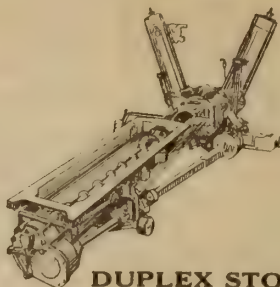
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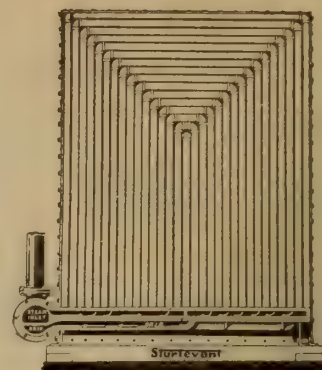
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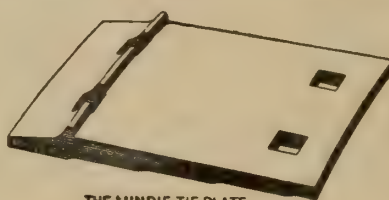
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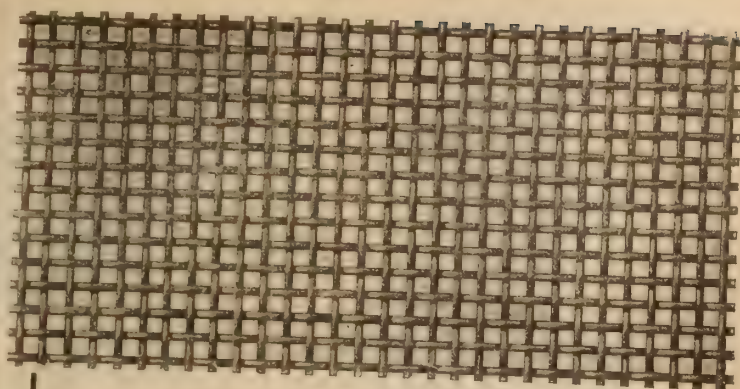
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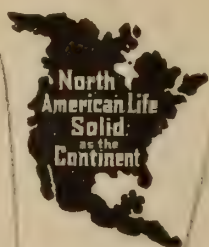
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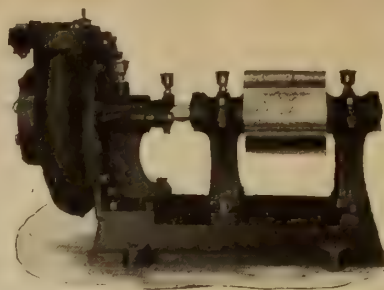
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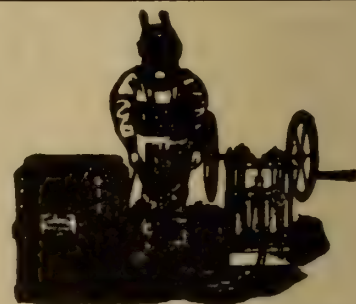
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American
Arcade
Globe**

Standard for over Fifty Years

Made in Canada by

Nicholson File Company
Port Hope - - Ontario

marked

Canadian Railway AND Marine World

Founded in 1898 by Acton Burrows.

Number 302.
Index to contents pg. 161.

TORONTO, CANADA, APRIL, 1923

See page 161 for
Subscription Rates

*KILL
LAST MILE*

COGHLIN Springs and Track Tools

change



ALL TYPES—FOR EVERY PURPOSE

Manufacturers of Springs since 1869

COGHLIN CO
Limited
MONTREAL

TORONTO: Harvard Turnbull & Co. **WINNIPEG:** Filer-Smith Machinery Co., Limited
VANCOUVER: Gordon & Belyea, Limited

AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS

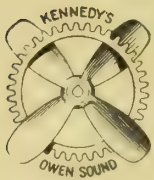


Simplex Clasp Brakes

INTERNATIONAL EQUIPMENT CO. LTD.
MONTREAL, QUEBEC, CANADA.

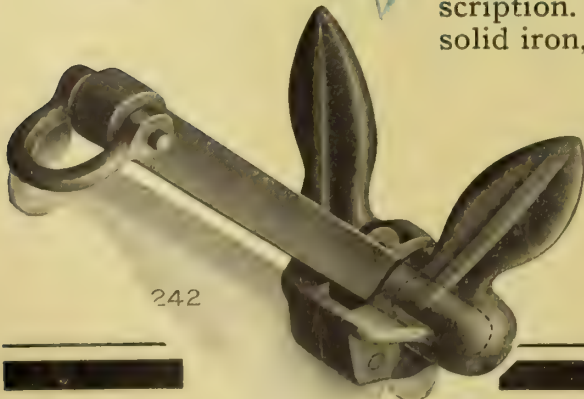
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Anchors and Propellers



*Thousands of patterns to choose from
or built to special specifications*

Anchors, Mooring Bollards and Castings of every description. All sizes of Propeller Wheels, sectional or solid iron, semi-steel or steel. Prompt deliveries.



242

The Wm. Kennedy & Sons

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District Representatives:

M. B. SAUNDERS, 8 Silver St., Cobalt; Phone Cobalt 153
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Maritime Representative:

C. A. FOWLER, Tramway Bldg., Halifax, N.S.

Service shows the most successful car roof to be the

All Steel Dry Lading Roof

which made possible the following specifications:

No. 1. That should be weather-proof under all conditions, also rust-proof, fire-proof and burglar-proof.

No. 2. That should not require maintenance for at least ten years.

No. 3. That should be of low deadweight and give the car a low center of gravity.

No. 4. That should lessen strain on the superstructure of the car when the car is in motion.

No. 5. That should strengthen, rather than detract, from the strength of the car frame.

No. 6. That should give the greatest interior capacity and the lowest clearance limits.

No. 7. That should be flexible enough to conform to every service condition of the car.

No. 8. That should be possible to use again on the same or another car, even in case of partial or total destruction of the rest of the car by fire or wreck.

No. 9. That should not require roofing boards.

No. 10. That should be of low first cost.

No. 11. That should permit of inspection on the part of any shipper by merely closing the doors of the car and if no rays of light are seen through the roof, the shipper to consider it a weather-tight roof.

No. 12. That should be so constructed that the carlines, purlines and ridge, tie the sides and ends of the car together firmly, so that the weather-proof roof has only the one duty of protecting the contents of the car from the elements.

HUTCHINS CAR ROOFING CO., LTD.

MONTREAL

THE duPONT-SIMPLEX STOKER

**The one Stoker that will handle all kinds of coal
without stack loss**

Manufactured by

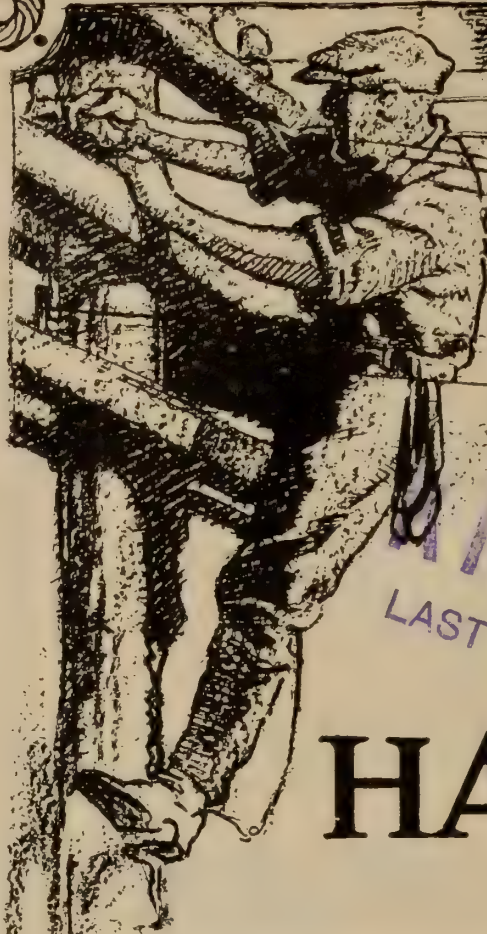
Standard Stoker Company, Inc.

Grand Central Terminal, New York

McCormick Bldg.
Chicago, Ills.

duPont Bldg.
Wilmington, Del.

Works
Erie, Pa.



GALVANIZED POLE LINE HARDWARE

WIRE
Copper and Galvanized

RIVETS
BOLTS, NUTS
WASHERS
SCREWS



POLE STEPS
GUY CLAMPS
CROSS ARM
BRACES
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AND

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WINNIPEG,

VANCOUVER.

The BERTRAM MACHINE TOOLS Page



No. 8 Double Angle Shear

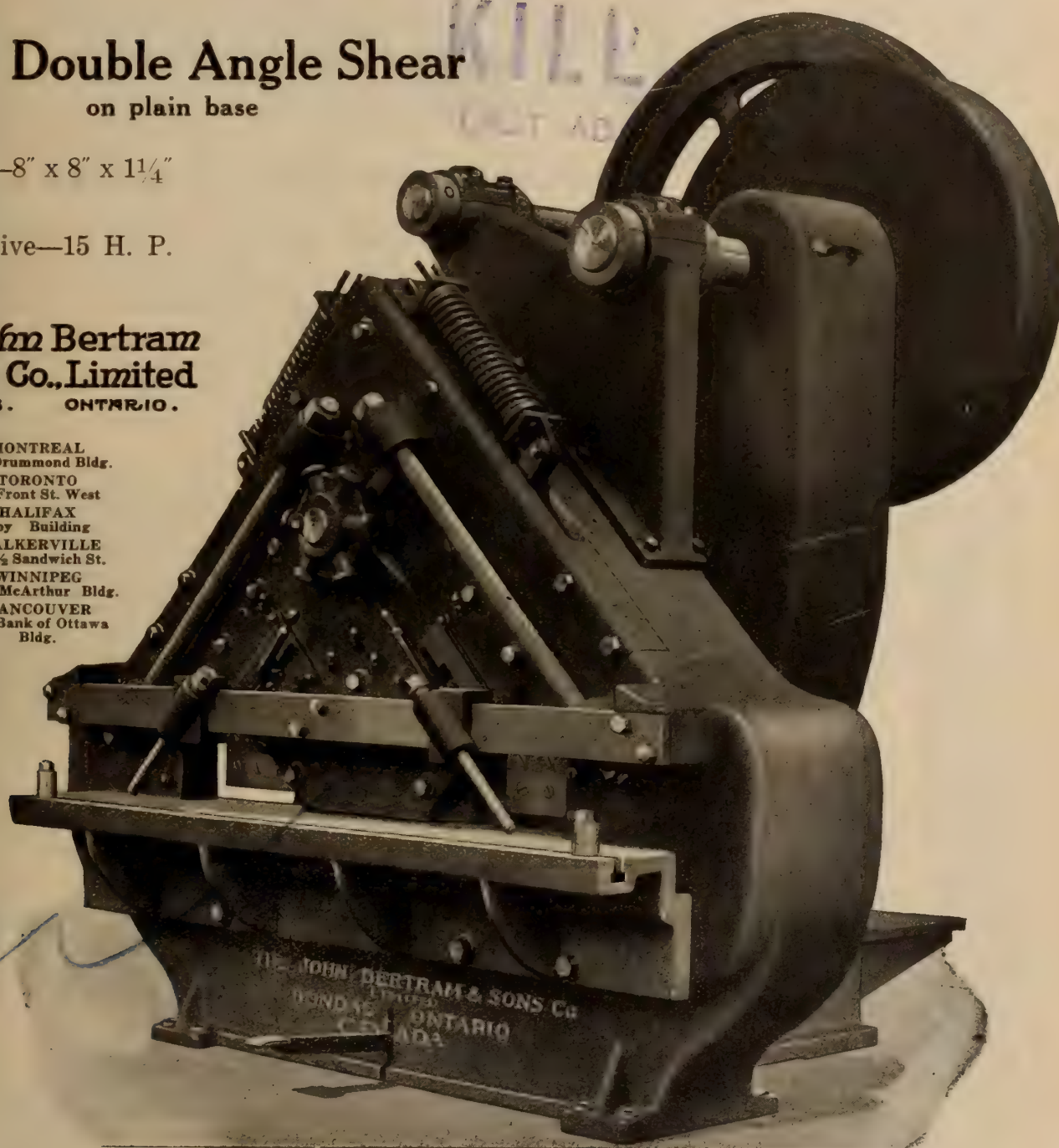
on plain base

Capacity—8" x 8" x 1¼"
angles.

Motor Drive—15 H. P.
Motor.

**The John Bertram
& Sons Co., Limited**
DUNDAS. ONTARIO.

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723 Drummond Bldg.
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VANCOUVER
609 Bank of Ottawa
Bldg.



THE JOHN BERTRAM & SONS CO.
LIMITED
DUNDAS, ONTARIO
CANADA

Dearborn

BULLETINS



KILL



Subject: Another Dearborn Success in South America

This extract is from our copy of the recent report of a Director-General of Railways to the Minister of Public Works and Railways.

"The present stock of Dearborn Disincrustant is sufficient for approximately one and one-half months. The use of this disincrustant has given very satisfactory results, as we can say that if the boilers of the 'Mikado' locomotives which have been in service since the latter part of 1918, are in good condition, it is due mainly to the constant use of Dearborn Disincrustant. Consequently there should be no interruption in the use of this Disincrustant. . . ."

"From the trials made with the other disincrustants which were purchased in small quantities, we can state once more that the use of 'Dearborn' is more convenient than any of those which up to now we have tried."

"The use of Dearborn compound in the boilers of our locomotives has been increasing in these last years, in . . . , also in . . . and in . . . , where the waters are very bad. Before the use of disincrustants, the boilers had incrustations of 2 and 3 millimeters in thickness, which at the present time are prevented entirely. It has been established that each millimeter of incrustation causes an increase in fuel consumption of 10%, so that if in . . . and . . . , where the monthly coal consumption is about 22,000 tons of coal, we assume only this 10% of economy, the money saved each month would amount to considerable."

Dearborn Treatment is convenient. It is economical; requires no special installation of equipment. It is scientific; is prescribed only after laboratory analysis of feed waters. It corrects both immediate and ultimate destructive tendencies in raw waters. Roads not now using Dearborn Scientific Treatment are invited to communicate with us for further valuable interesting facts.

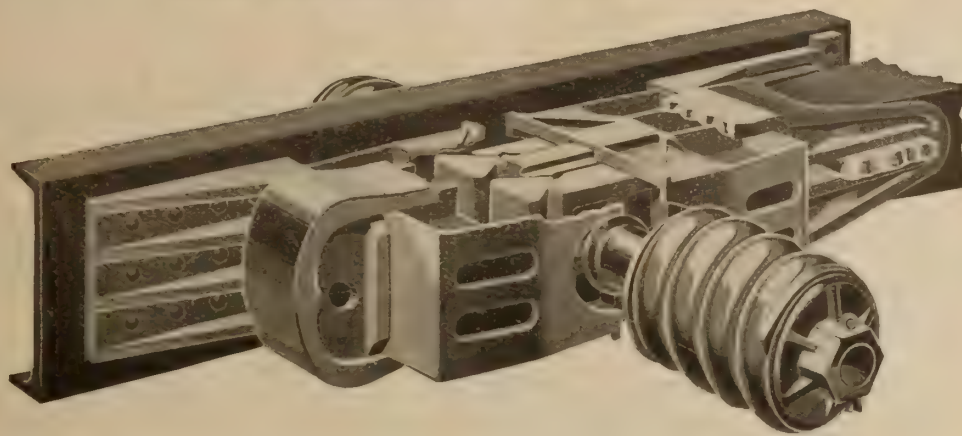
Dearborn Chemical Company

Limited

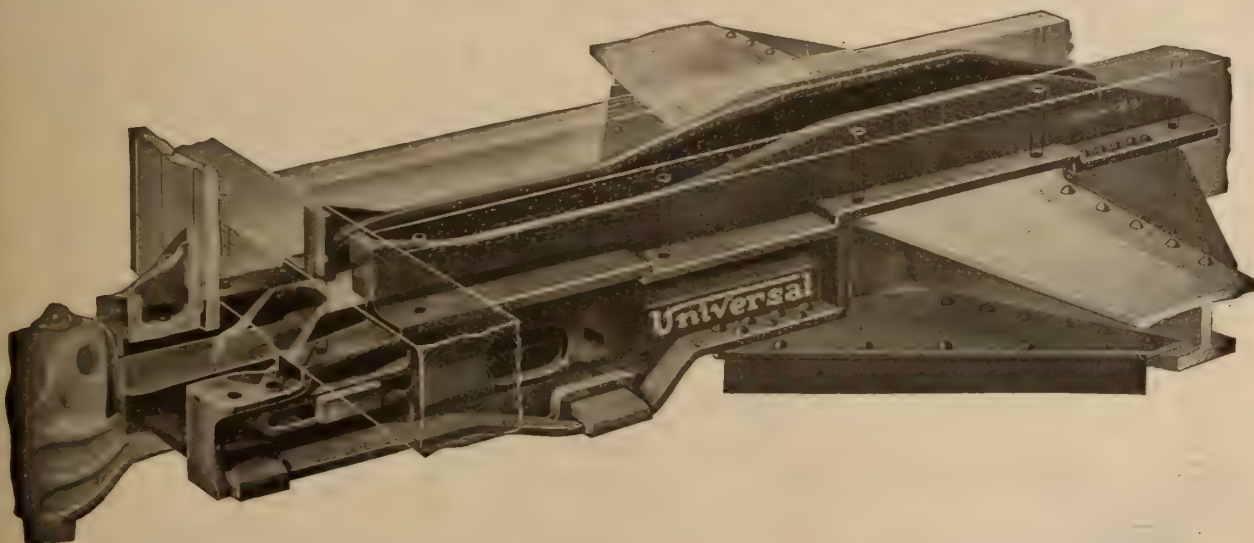
2454-2464 Dundas St. W.

TORONTO, CANADA

CARDWELL FRICTION DRAFT GEAR MADE IN CANADA



Universal ATTACHMENTS MADE IN CANADA



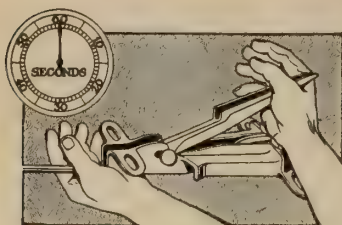
REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING

CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

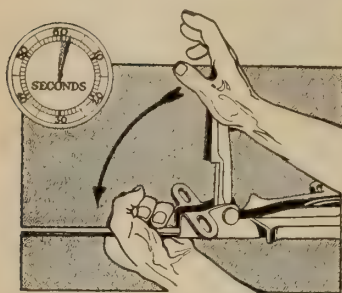
MADE IN CANADA

WEBB. G. KRAUSER

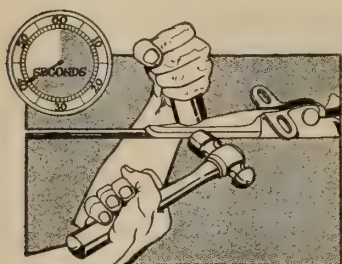
Transportation Building, MONTREAL



Slip tip under hooks



Turn over and down on the wire



Clinch the lips and the job is done



O-B Short Cam Tips on Type D Frog



O-B Short Cam Tips on Type ER Crossover

40 SECONDS-

to install an interchangeable O-B Cam Tip on an O-B Overhead Trolley Device

The installation of approach tips for frogs, crossovers and section insulators becomes a minor time consideration with O-B Cam Tips on O-B Overhead Trolley Devices.

The three simple operations, shown in the sketches, completed in 40 seconds for each tip, reduce construction costs and permit quick renewals in emergencies.

O-B Cam Tips are made with 2½ or 6 inch tips interchangeable on all O-B Trolley Devices.

Laboratory controlled bronze made to a distinct formula for trolley ears and tips insures uniform durability in all O-B Cam Tips.

Dominion Insulator & Mfg. Co., Limited

(Manufacturing Ohio Brass Company Products)

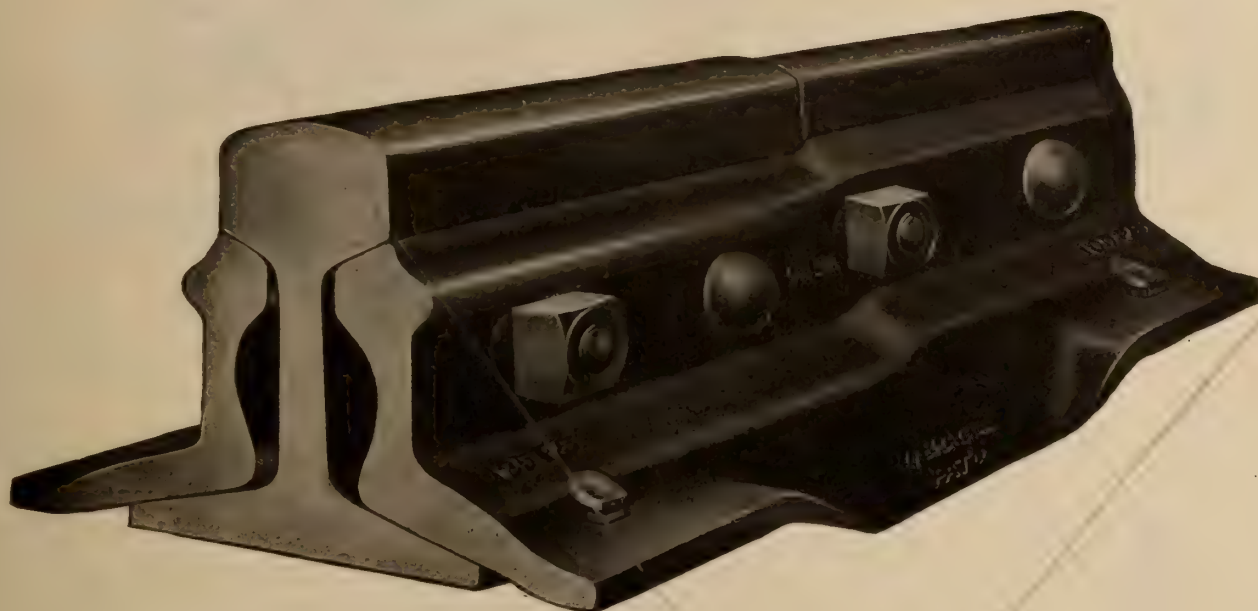
Niagara Falls

Ontario



O-B Long Cam Tips on Type D Trolley Frog

“The Joint as Strong as the Rail”



The Q & C Rolled Steel Step Joint

Here's a step joint made of high grade open hearth rolled steel, reinforced substantially at the head and base; pressed to fit any combination of "T" rails made; heat treated when specified.

Further information and prices gladly given on request.

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Toronto

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CARBON-VANADIUM Steel removes the last possible objection to the use of alloy steel for lighter reciprocating and revolving parts.

Carbon-Vanadium eliminates all heat-treating difficulties. It is an unquenchable steel which requires no handling beyond mere heating and slow cooling. Carbon-Vanadium Forgings can be reheated for straightening or repairs without affecting their high physical properties.

Furthermore, the physical properties of Carbon-Vanadium, without quenching or tempering, are equal to and generally higher than the physical properties of heat-treated alloy steels formerly advocated for light parts.

Write for facts and figures on Carbon-Vanadium Steel. You'll be interested in the possibilities for reducing locomotive weight and decreasing dynamic augment by means of lighter but stronger parts of Carbon-Vanadium.

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OF AMERICA**

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KILL
LAST AD.



KILL
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As You Would Like It

WE have endeavoured to make our service ideal from the customers' viewpoint.

In every detail of the transaction, from the minute your order is received by us until payment is made for oxygen and acetylene supplied, your requirements are of first importance.

We supply oxygen and dissolved acetylene of the highest quality, in modern cylinders, light in weight yet rugged in construction, fitted with leak-proof valves; at the lowest prices obtainable.

This service is available for you immediately. Why not take advantage of it?



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Operating the Welding and Cutting Gas Division of Prest-O-Lite Company of Canada, Limited

General Offices; 80 Adelaide St., East, Toronto

Distribution Points: Hamilton, Merritton, Montreal, Oshawa, Quebec, Shawinigan Falls,
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Worn parts built up and afterwards machined using
Wilson's No. 17 Metal

Wilson "Color-tipt" Welding Metals and Arc Welding Equipment

G. D. PETERS & CO., LTD.

New Birks Building
MONTREAL

**Canada's
Commerce
Carriers**

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REGULAR FREIGHT SERVICES

From Montreal and Quebec in Summer
From St. John, N.B., and Halifax, N.S.,
in Winter.

To Liverpool, London, Cardiff and Swansea,
fortnightly.

To Glasgow, monthly.

To Barbadoes, Trinidad and Demerara, fort-
nightly.

To Australia and New Zealand, monthly.

To Charlottetown, P.E.I., and St. John's, Nfld.,
every sixteen days.

From Vancouver, B.C.

To Australia and New Zealand, monthly.

To China and Japan, monthly.

To India and Straits Settlements.

Pacific Coastal Service.
(Sailings every ten days)

From Vancouver and Vancouver Island ports,
To Seattle, San Francisco and Wilmington.

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Every three weeks from Montreal in Summer and Halifax, N.S., in Winter,
To Hamilton, Bermuda, Nassau, Kingston and Belize.

Superior Passenger Accommodation.

Excellent Cuisine.

B. C. KEELEY, Pacific Coast Manager, Vancouver, B.C.

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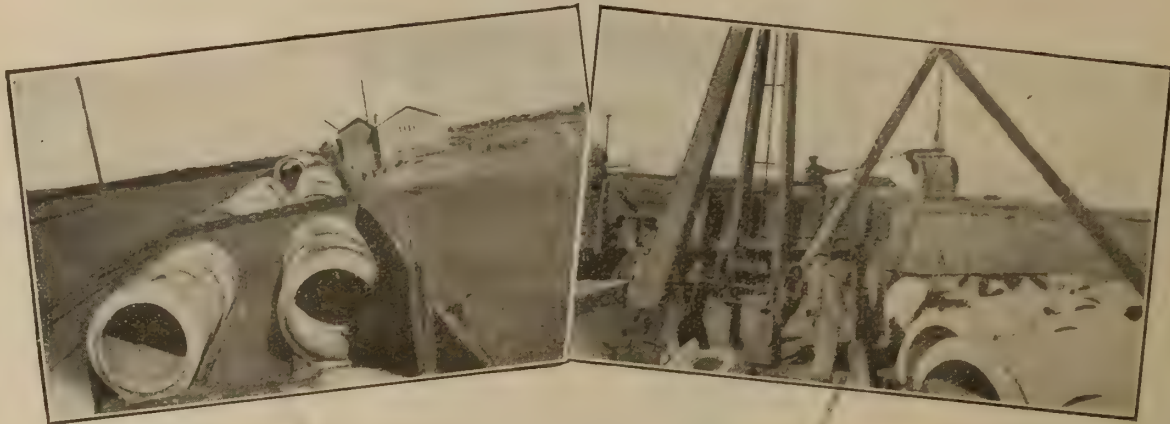
R. B. TEAKLE, General Manager.

W. A. CUNNINGHAM, General Freight Agent,

230 St. James Street, Montreal, P.Q.



Canadian National Railways



The Canadian National Railways Believe in Concrete Culvert Pipe

THE constantly increasing use of Concrete Culvert Pipe by the Canadian National Railways is a most significant tribute to the desirability of this type of structure.

In the construction of Railway Culverts, permanence should be a leading consideration. When economy and permanence are desired, Culvert Pipe made of Concrete is the logical material.

In addition to its permanence and economy, Pre-Cast Concrete Pipe has these advantages. It is ready for immediate use. Its maximum practicable size is limited only by the weight which can be economically shipped and lowered into place.

*Specify
CANADA CEMENT
Uniformly Reliable*

**CANADA CEMENT
CONCRETE
FOR PERMANENCE**

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Sales Office at Montreal Toronto Winnipeg Calgary



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Rounds, Squares and Twisted Squares

From Ore to Finished Product - All Within the Empire

BRITISH EMPIRE STEEL

CANADA CEMENT BUILDING

CORPORATION, LIMITED

MONTREAL, CANADA

Western Representatives: Bissett & Webb, Limited Winnipeg

Concrete Road Building Again Breaks All Records

80,700,000 square yards of Concrete pavement were placed under contract last year in the United States and Canada—a gain of more than 40 per cent over 1921, the largest previous year.

The construction thus provided for, and to a large extent completed, is equivalent to almost 8,000 miles of 18-foot pavement.

That is a larger amount of Concrete highway than there was in the United States and Canada altogether up to 1917.

These facts witness the determination of the people to have roads equal to the traffic they bear.

Yet even with this great record, the output of motor vehicles continues to outstrip by far the construction of motor roads.

The revolution in road traffic due to the automobile has called for hole-proof, skid-proof, really enduring pavement; and Concrete fills the need.

That is the explanation of the steady, rapid gain in Concrete road construction during the last decade—the largest development in basic transportation facilities in this country in many years.

PORTLAND CEMENT ASSOCIATION

111 West Washington Street
CHICAGO, ILL.

*A National Organization
to Improve and Extend the Uses of Concrete*

Atlanta	Des Moines	Los Angeles	Parkersburg	San Francisco
Boston	Detroit	Milwaukee	Philadelphia	Seattle
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Northern Electric Company
LIMITED

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Construction Material
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Household Appliances
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Power & Light Plants
Marine Fittings



CHILLED IRON WHEELS
for railway and street car
service. Capacity 20,000 per
day. 25,000,000 in service.

ASSOCIATION OF MANUFACTURERS
OF CHILLED CAR WHEELS
1847 McCormick Bldg., Chicago

THE map above shows the location of the
50 foundries in the United States and
Canada, represented by the Association of
Manufacturers of Chilled Car Wheels.

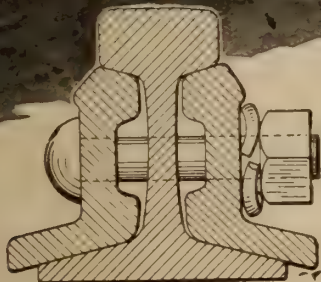
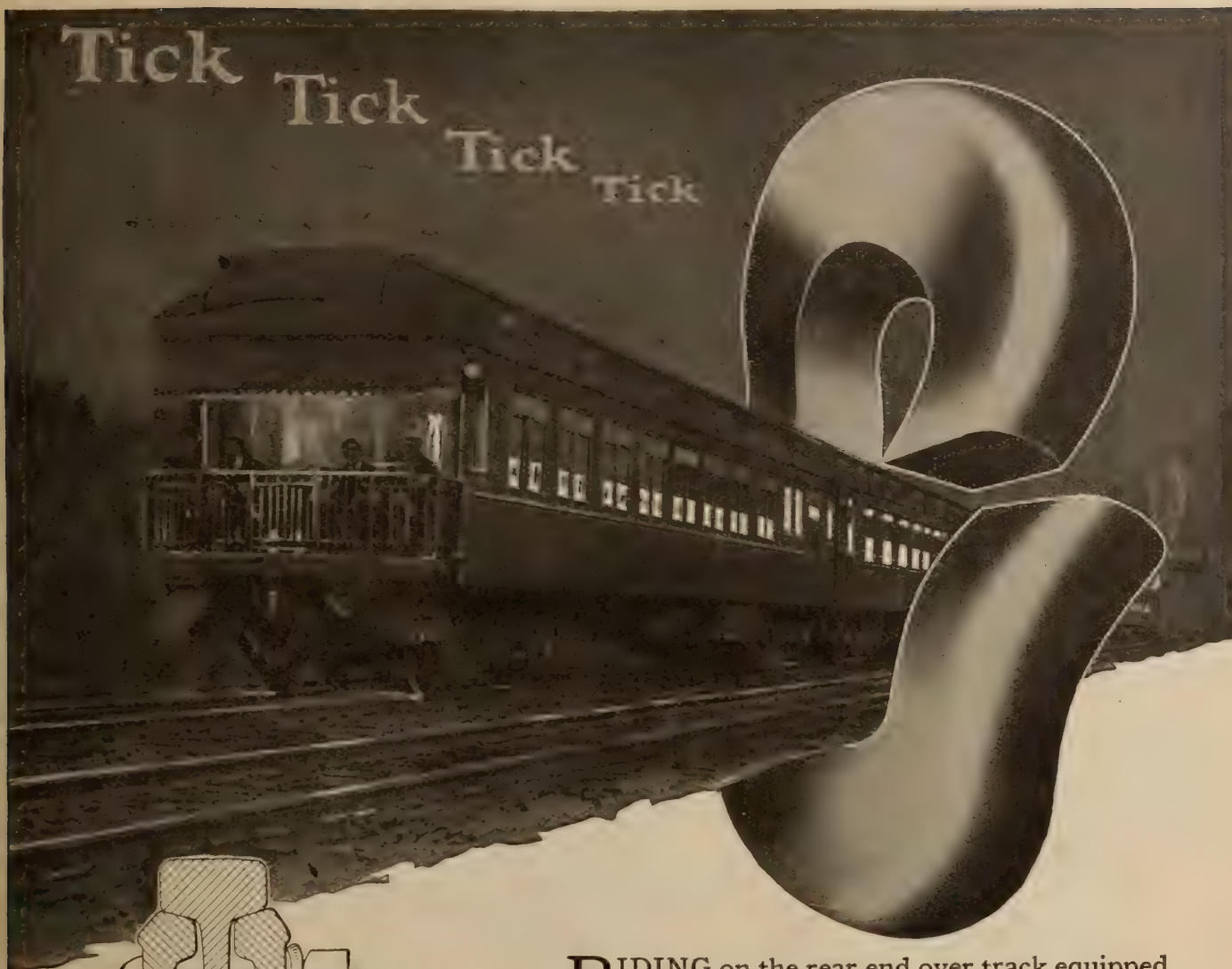
Chicago, 4	Sayre, Pa.
St. Louis, 2	Berwick, Pa.
Buffalo, 4	Albany
Pittsburgh, 2	Toronto
Cleveland, 2	New Glasgow, N. S.
Amherst, N. S.	Madison, Ill.
Montreal	Huntington, W. Va.
Mich. City, Ind.	Wilmington, Del.
Louisville	Houston, Tex.
Mt. Vernon, Ill.	Hannibal, Mo.
Ft. Wayne, Ind.	Reading, Pa.
Birmingham	Baltimore
Atlanta	Richmond, Va.
Savannah	Ft. William, Ont.
Boston	St. Thomas
Detroit	Hamilton
St. Paul	Ramapo, N. Y.
Kansas City, Kan.	Marshall, Tex.
Denver	Los Angeles
Tacoma	Council Bluffs
Rochester, N. Y.	

American Railroad Association Standards

650 lb. wheel for 60,000 Capacity Cars
700 lb. wheel for 80,000 Capacity Cars
750 lb. wheel for 100,000 Capacity Cars
850 lb. wheel for 140,000 Capacity Cars

The Standard Wheel for Seventy-Two Years

CHILLED IRON WHEELS



HIPOWER NUT LOCKS

Carry 'Em Through

RIDING on the rear end over track equipped with HIPOWER you'll hear a tick-tick-tick—a fine noise representative of good track with tight joints which begets confidence and creates good will. There is no bang-crash-bang due to loose joints and destructive pounding of rail ends.

Track protected by HIPOWER is a sound, long time investment with interest paid in continuous security of track at reduced cost of labor and expense for material renewals.

HIPOWER keep track joints tight, minimize bolt tightening and reduce the wear in angle bars, bolts, rail ends, ties and ballast that arises from loose joints being pounded by heavy rolling loads.

THE NATIONAL LOCK WASHER CO.

Established 1886

NEWARK, N. J.

New York
Nashville
Richmond

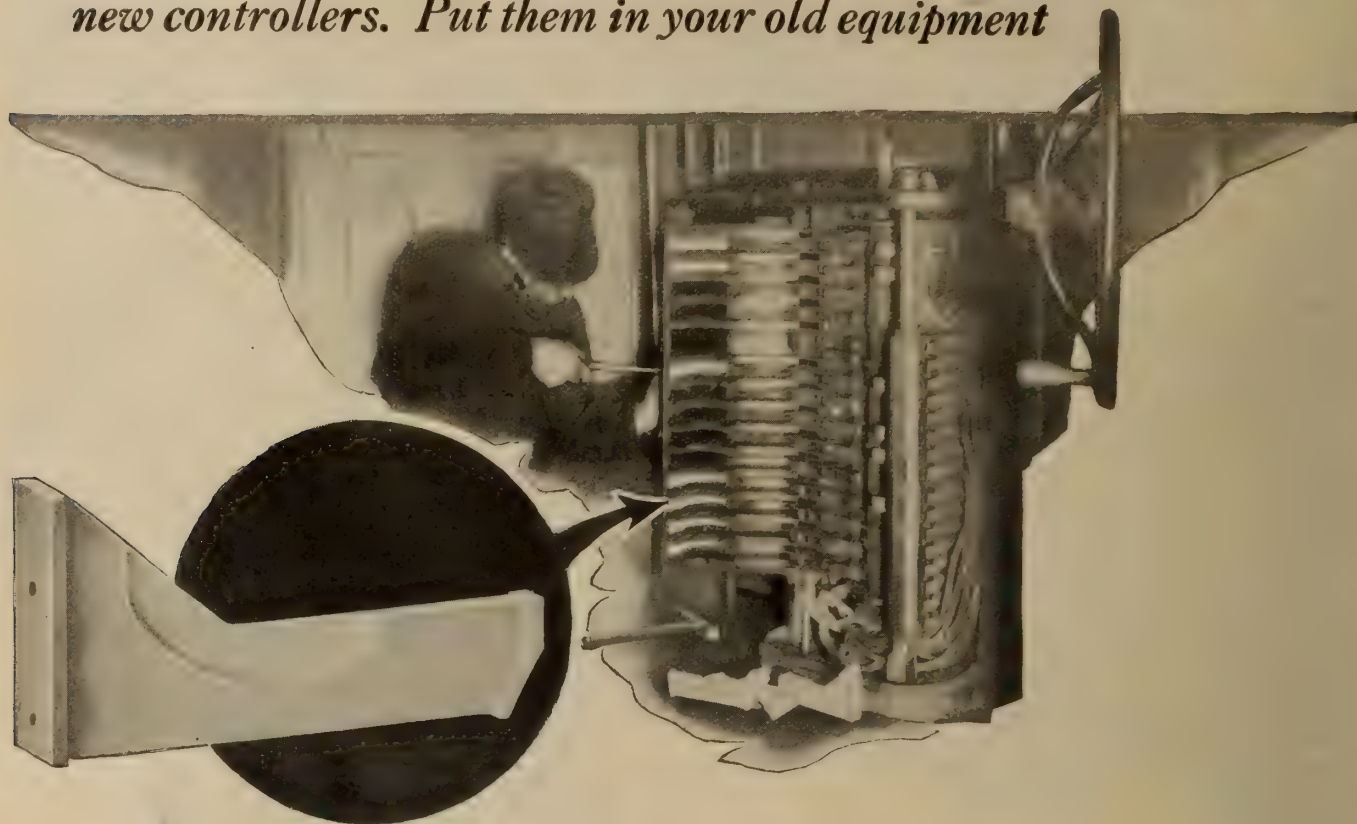
Chicago
San Francisco

Detroit
St. Louis
Denver

KILL

murphy LAST AD. 2/10/23

Arc suppressor plates are considered a necessary part of new controllers. Put them in your old equipment



These plates add life to the controller

C-G-E Arc Suppressor Plates are an auxiliary to the controller arc deflector. They are installed opposite the fingers where there is the most arcing, to shorten the time for disrupting the arc. This is accomplished by narrowing the arc passages, which increases the resistance of the arc and the cooling effect of the plates. The result is less burning of the controller fingers, segments, and arcing plates.

Modern controllers are now equipped with arc suppressor plates. They give better, longer service and require fewer repairs and less frequent inspection.

These plates are inexpensive and can be used to advantage on any C-G-E controller having individual-finger blowouts, such as the K-34, K-35, K-36 and K-64. It takes only a few minutes to install them.

Try them and see the difference.

"Made in Canada" by

Canadian General Electric Co., Limited

HEAD OFFICE  TORONTO

Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Cobalt, Ottawa, Hamilton, London, Windsor, South Porcupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.

ELECTRIC CARS

for City, Suburban and Interurban Service



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ETC.

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Canadian Car & Foundry Company, Limited

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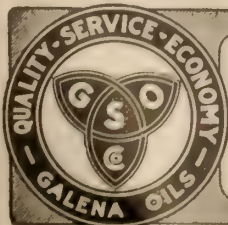


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Galena Electric Car Oil	Galena Driving Journal Compound
Galena Track Oil	Galena Hot Box Compound
Galena Power House Engine Oil	Galena Gear Compound
Galena Power House Valve Oil	Galena Perfection Compound
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Galena Air Compressor Oils	Galena Gear Grease
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Galena Dynamo Oil	Galena Pinion Grease
Galena Gas Engine Oil	Galena Pneumatic Tool Grease
Galena Turbine Oil	Galena Roller Bearing Grease
Galena Flange Oil	Galena Ball Bearing Grease
Galena Motor Car Oil	Galena Belt Chain Grease
Galena Air Pump Oil	Galena Cable Grease
Galena Air Tool Oil	Galena Graphite Axle Grease
Galena Ball Bearing Oil	Galena Soft Black Grease
Galena Chain Oil	Galena Hard Black Grease
Galena Soluble Drilling Oil	Galena Graphite Plunger Grease
Galena Commutator Oil	Galena Auto Cup Grease
Galena Electric Generator Oil	Galena Lubricating Grease
Galena Hydraulic Jack Oil	Galena Dark Pole Grease
Galena Red "B" Machinery Oil	Galena Slushing Grease
Galena Gear Case Oil	Galena Sponge Grease
Galena Tempering Oil	Galena Trolley Grease
Galena Rope Oil	Galena Solidified Oil
Galena Thread Cutting Oil	Galena Solidified Oil and Waste

Each brand of highest quality and tested by years of service. Made in different consistencies to suit degree of climate or type of equipment. Our Service Engineers will recommend the kind best suited to your requirements.

"Galena Quality is an Assurance of Efficiency and Economy!"



Galena-Signal Oil Company

of Canada, Limited

Toronto

Montreal





"DOMINION"

when marked on a reel

IS YOUR GUARANTEE OF QUALITY OF

WIRE ROPE

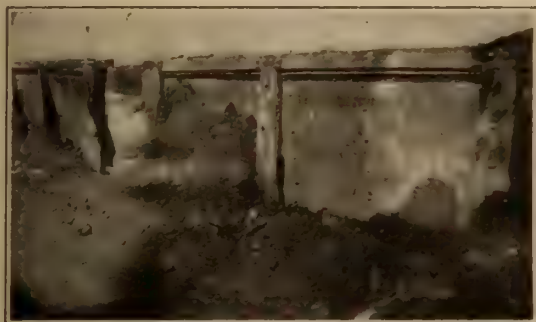
Blocks, Clips, Thimbles, Turnbuckles, &c.

THE DOMINION WIRE ROPE CO., LIMITED

Head Office: MONTREAL

Branches: TORONTO, WINNIPEG

The Improved Hart Convertible Car Unloads Clean Without Extra Hand Labor



Old Level Floor Car. Note Ballast Left by Plow.

For
Ballasting
Center
Dump
or
Side Dump

For Coal
or General
Service



Improved Car Unloaded by Top Plow. Has no Ballast to be Shovelled out by Hand.

The Car With Gravity Discharge Pockets

—DESIGNED, PATENTED AND BUILT IN CANADA—

The HART-OTIS CAR CO., Limited, MONTREAL



Since 1852 the name

"FRANSOME"

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Has stood as a constant pledge of honest value to users of

Concrete Mixers

Simplified Construction—Strength—Durability

Branch :

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Head Office :

MONTREAL

File Waste

Waste time—waste effort—waste money—these are the great wastes that come from using dull files.

The waste begins as soon as the file's teeth show signs of wear. Discard the file **then**—don't wait till it fails to cut at all!

Intelligent replacement of dull files is real economy. Your safeguard against premature dullness is to order one of these brands:

**Kearney & Foot
Great Western
American
Arcade
Globe**

**Standard for
over Fifty Years**

Made in Canada by

**Nicholson File
Company**

PORT HOPE - ONTARIO



Greening's Wire Rope Its Quality Pays

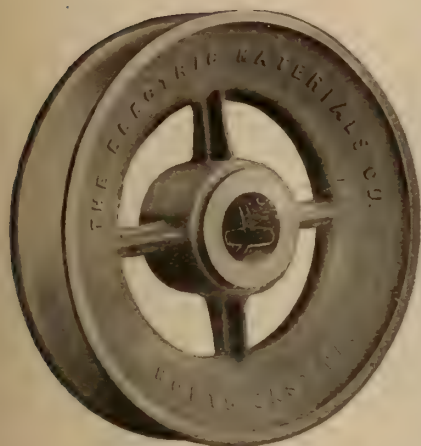
Greening's Standard Crucible Cast Steel, Best Plough Steel and Acme Steel Ropes are made from wire specially manufactured and unvarying in quality.

All the wires are carefully tested for tensile strength, elongation, and tension; all material that does not conform to the highest standard is rejected. Records of tests are kept for five years and there is no possibility of inferior material entering into these ropes.

Greening's Wire Rope, as used by Canadian Industry everywhere under all conditions, is proof positive, of the fact that "quality pays."

Our data files are always at your disposal or write for catalog.

THE **B. GREENING WIRE CO., LIMITED**
HAMILTON, ONTARIO
MONTREAL, QUE. WINNIPEG, MAN.



Trolley Wheels for all Operating Conditions

Our Wheels are made by a firm having years of experience in the manufacture of all types of Trolley Wheels, and are designed to give maximum mileage and service.

Send particulars of the type of wheel you prefer and let us send a sample wheel for trial.

Trolley Poles

We carry a large stock of seamless trolley poles and can make quick delivery.

Railway and Power Engineering Corporation Ltd.

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CLEAN BRUSHES

FOREIGN material, such as grease smut and dirt, must be kept off the commutator.

This is done by brushes that are just abrasive enough to scour it and not rough enough to score it.

COLUMBIA PYRAMID BRUSHES

will give you this service.

Our brush Engineer will gladly advise you as to the correct brushes to use to get maximum service.



Canadian National Carbon Co.
Limited

Montreal Toronto Winnipeg

FLANNERY

F.B.C.

WELDED

FLEXIBLE

STAYBOLT

With this assemblage large savings are affected, namely: in original application costs—necessity of repairs because of sleeves cracking is eliminated, since the F.B.C. Welded Sleeve is made of ductile material and will not crack—and a saving in stores is realized since three types of welded sleeves replace thirty-two types of threaded sleeves.



Can you afford to overlook F. B. C. Welded Flexible Staybolts for new equipment or repairs?

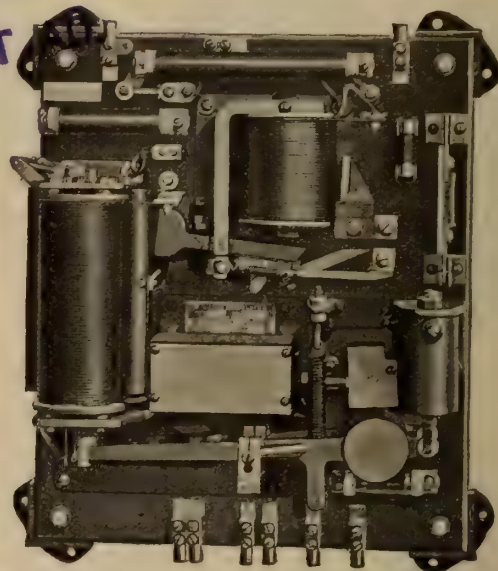
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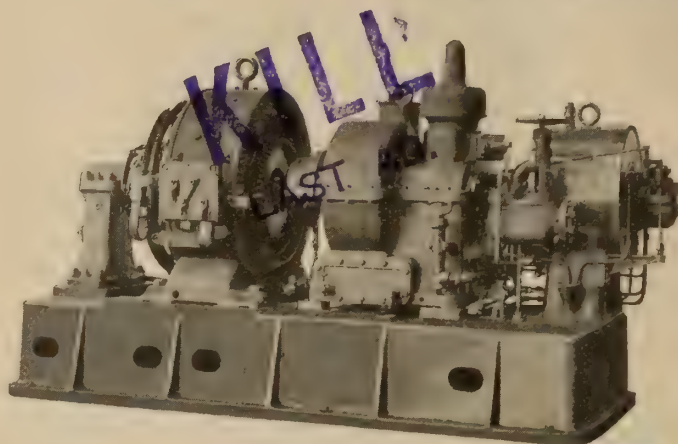
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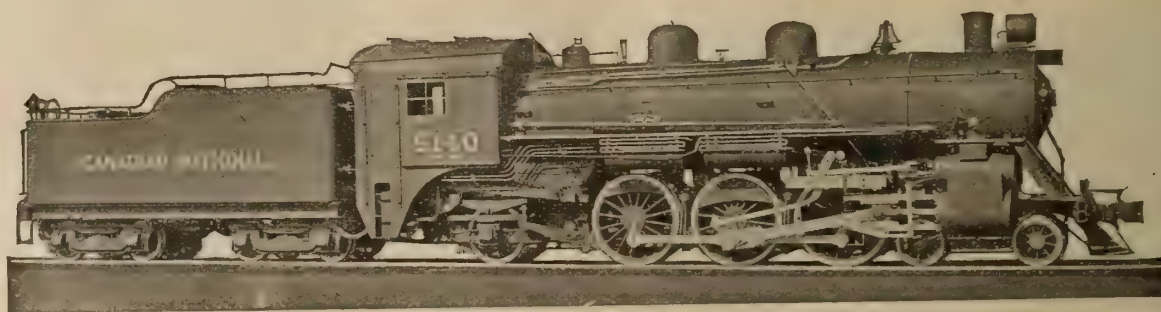
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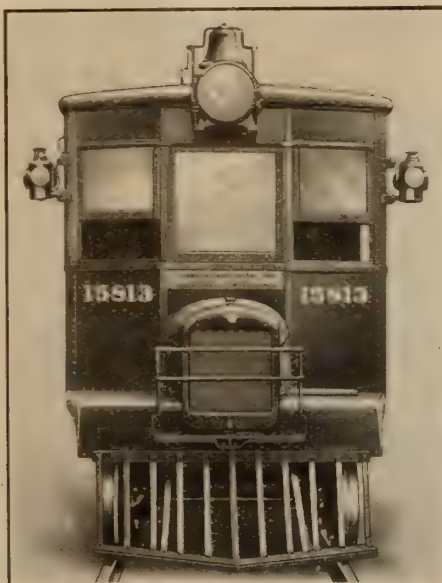
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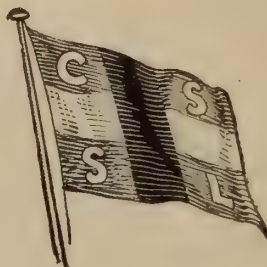
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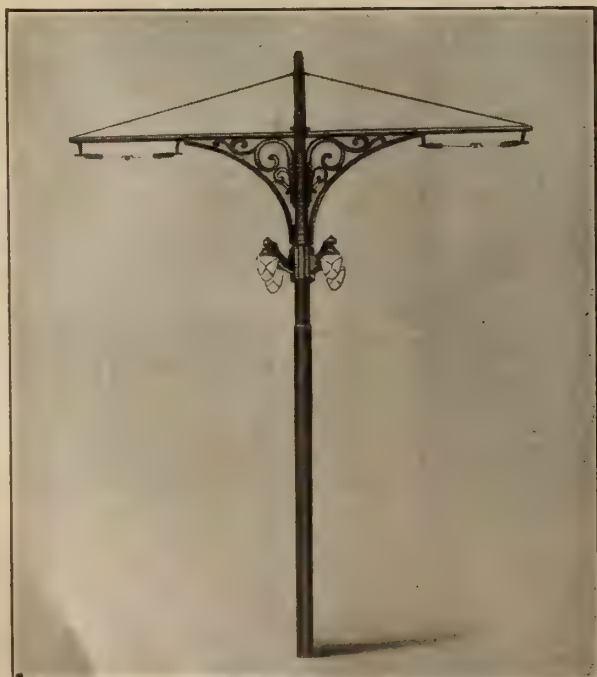
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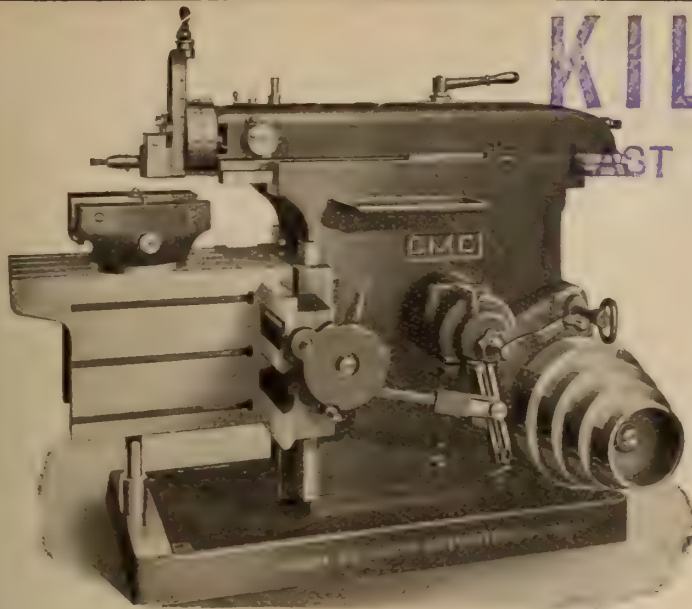
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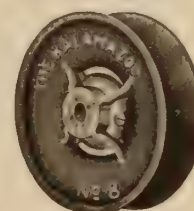


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Canadian Railway and Marine World

April, 1923

Completing The Canadian National Railways' Organization.

Canadian Government Railways Management Transferred.

In response to a motion by Murray McLaren, St. John, N.B., there was tabled in the House of Commons recently, the following report, which was approved by the Governor-General on Jan. 20, and passed as order in council 115:—

"The committee of the Privy Council have had before them a report, dated Jan. 18, 1923, from the acting Minister of Railways and Canals, stating that under the act to incorporate the Canadian National Railway Co., and respecting Canadian National Railways, statutes of 1919, chap. 13, authority was given by sec. 11 to the Governor in council, from time to time, by order in council, to entrust to the Canadian National Railway Co., 'the management and operation of any lines or railways, or parts thereof, and any property or works of whatever description, or interests therein, and any powers, rights or privileges over, or with respect to, any railways, properties or works, or interests therein, which may be from time to time vested in, or owned, controlled, or occupied by His Majesty, or such parts or part thereof, or rights or interests therein, as may be designated in any order in council, upon such terms, and subject to such regulations and conditions as the Governor in council may from time to time decide; such management and operation to continue during the pleasure of the Governor in council and to be subject to termination, or variation, from time to time in whole or in part by the Governor in council.'

"That the Canadian National Railway Co. has been brought into existence by virtue of an order in council passed on Oct. 4, 1922, whereby certain persons were nominated directors of the company pursuant to the provisions of sec. 1 of the act. That the powers of general manager, in respect of Canadian Government Railways, were heretofore entrusted by order in council, dated Nov. 20, 1918, to certain persons from time to time constituting the board of the Canadian Northern Railway Co., and that the powers of general manager, in respect of the Canadian Government Railways so entrusted, are now being exercised by the persons who constitute the board of directors of the Canadian National Railway Co. That it is expedient to terminate the authority of the said persons to act as general manager of the Canadian Government Railways, and to entrust in lieu thereof the management and operation of the said railways to the Canadian National Railway Co., pursuant to the provisions of sec. 11 of the act as above in part mentioned. The effect of said change will be to make applicable to the management and operation of the said railways many of the provisions of the act, and to accomplish the main purpose of the act as expressed in the recital thereto, viz.:—'To provide for the incorporation of a company, under which the railways, works and undertakings of the companies comprised

in the Canadian Northern System may be consolidated, and, together with the Canadian Government Railways, operated as a national railway system.'

"The Minister accordingly recommends that the Canadian Government Railways, which, for the purpose of sec. 10 of the act, shall include the following lines designated specifically, viz.: Intercolonial Ry., National Transcontinental Ry., Lake Superior Branch, leased from Grand Trunk Pacific Ry. Co., Prince Edward Island Ry., Hudson Bay Ry., and, as a general designation, all other railways and branch lines, the title to which, and to the lands and properties whereon such railways are constructed, is vested in His Majesty, be, by order in council, entrusted in respect of the management and operation thereof, to the Canadian National Railway Co., on the terms in the act expressly specified, viz., that such management and operation shall continue during the pleasure of the Governor in council, and shall be subject to termination or variation from time to time, in whole or in part, by the Governor in council. The Minister also recommends that the full benefit of all powers, rights, privileges and interests vested in His Majesty, under any agreement for joint operation, or running rights, with any other corporation, in connection with the operation of any of the Canadian Government Railways, be also entrusted, in respect of such operation and management, to the Canadian National Railway Co., on the same terms as hereinbefore set forth. That the order in council of Nov. 20, 1918, above referred to, be cancelled. The committee concur in the foregoing recommendation and submit the same for approval."

Co-ordination—Regions—Passes.

Sir Henry Thornton issued the following circulars March 15:—

Co-ordination of the Grand Trunk Ry. System and the Canadian National Rys. has now been effected, and all lines will be hereafter known and operated as the Canadian National Railways, except Grand Trunk System lines in the U. S.

For the purposes of operation, the system has been divided into units known as the Atlantic, Central and Western Regions, as follows:—

Atlantic Region:—Comprising all lines and facilities east of Riviere du Loup and Monk, Que. (including Riviere du Loup terminal, but not Monk terminal).

Central Region:—Comprising all lines and facilities between Riviere du Loup and Monk, Que., on the east, and Chicago, Ill., Current and Superior Jct., Ont., on the west (including Monk, Que., terminal; line to Portland, Me.; Grand Trunk Western Ry., including associated lines in United States west of the Detroit and St. Clair Rivers).

Western Region:—Comprising all lines and facilities west of Current and Superior Jct., Ont.

Annual, Term and Trip Passes.—Applications should be made to the Pass Bureau, Canadian National Rys., Montreal. The General Manager, Western Region, with headquarters at Winnipeg,

is authorized to apply for, and issue trip passes to roads having general offices at Chicago or points west thereof.

All annual and term passes issued by the Grand Trunk Ry. System and the Canadian National Rys., bearing expiry date Dec. 31, 1922, are further extended as to time limit good until May 31, 1923. The new 1923 annual and term passes for these railways will be a joint issue. Passes good between points in Canada and the United States will bear dual heading: "Canadian National Railways: Grand Trunk System (lines in U.S.)." Passes of single heading "Canadian National Railways" will be good between points designated in Canada only. Separate passes will be required for each of the following subsidiary lines: Niagara, St. Catharines & Toronto Ry., Toronto Suburban Ry., Duluth, Winnipeg & Pacific Ry., Grand Trunk Pacific Coast Steamship Co.

The President Calls for Co-operation.

"To all in the service of the Canadian National Rys.: The organization for administering the Canadian National Ry. system as one complete unit has been decided. Operating regions, districts and divisions have been determined. The necessary officers have been selected and their duties prescribed. We have embarked upon a mutual enterprise of great difficulty, and of vast importance to ourselves, both as employees of the company and as citizens of the Dominion. If we make a success of our undertaking we shall not only have added materially to our individual welfare and reputation as railroad men, but we shall have performed a fine and patriotic service, which will reflect itself in the advancement and prosperity of our country, in which we will all share. But our success will depend upon the skill, energy and high principles with which the property is administered, and upon the fidelity, loyalty and vigilance which actuate every employe in the performance of his daily duties. Technical ability alone will not win the battle. Only by enthusiastic and constant team work on the part of the great army of our men can we hope to win.

"I am sure that every man in the service ardently wishes our experiment to succeed, and it will if each one tries to live up to these simple rules:—Be courteous and helpful to everyone, especially the public. We need their business. Try to make a friend a day for the company. Try to influence all the freight and passengers you can our way. You may think that is the job of the Traffic Department. So it is, but you and I and all of us first, last and always, belong to that department. Do all you can to stop waste. Try to save something each day for the company. Remember you are working for a company you may be proud of, and make it so. Hold up your head, and smile, smile, smile."

Atlantic Region's Western Termini.

Following the Moncton, N.B., Board of Trade's protest against the Atlantic Region's western termini being fixed at

Riviere du Loup and Monk, Que., respectively, as given fully in Canadian Railway and Marine World for March, a meeting of representatives of the Nova Scotia and New Brunswick governments and boards of trade in those provinces was held at Amherst, N.S., March 2, when a resolution was passed declaring the C.N.R. directors' decision to be most unsatisfactory to maritime provinces people generally; that the region should be extended west to Montreal, and that the directors be requested to meet representatives from maritime provinces governments and boards of trade in Moncton, within 10 days, to discuss the matter, or to fix another place and a date for the reception of a delegation. Premier Veinot of New Brunswick said he had telegraphed Prime Minister King at Ottawa as follows:—"On my return from Ottawa have looked carefully into movement to have eastern division Canadian National Rys. extended to Montreal. The movement is purely non-political and embraces efforts of all classes to obtain what is sincerely considered fair play for maritime provinces. Before reaching definite final decision, it would be a wise move to have full board of railways come to Moncton and hold conference with representatives from various civic and municipal bodies. Could you not have this done? The matter of transfer of Audit Department from Moncton to Montreal should also be subject of conference before final decision. Rest assured the movement in maritimes does not mean political interference, but disregard for wishes of our people may have result of bringing in later a political squabble. This can be avoided by showing a spirit of recognition of maritime claims."

On receiving by telegraph the resolution adopted at the Amherst meeting, Sir Henry Thornton at once telegraphed in reply as follows:—"I regret that there is dissatisfaction with respect to boundaries of eastern division. It has always been my understanding that the people of the maritime provinces wish original Intercolonial Ry. maintained intact as operating division, and that officers placed in charge of it should be as far as possible men from maritime provinces and individuals in whom people had confidence. The appointments which have already been made, it seems to me, adequately take care of that aspect of problem. From an operating point of view, and for technical reasons, it would be impossible to draw dividing line between eastern and central divisions at Montreal. Only possible point at which a division could be made would be at Brockville, but I did not want the through artery of traffic extending from Quebec through Montreal, Toronto, and Detroit to Chicago, to be under separate regional administrations. I am extremely anxious to grant every reasonable request which may be made by people of maritime provinces, and I have utmost sympathy for their position. I think the fact that we have placed in charge of their affairs officers in whom they should have confidence, and whom I know have sympathy with aspirations of maritimes, should be at least some tangible evidence of our desire to meet your wishes. It is inconceivable to my mind how the fixing of boundary at Riviere du Loup and Monk can possibly affect interest of maritime provinces to the slightest degree, and any changes which may take place would occur no matter where boundaries might be. The problem in the determination of these regions has been an extremely

difficult one and has caused me much anxiety. I appeal to you and your people to let matter stand as it is and see how it works out. I pledge my friendship and good will to the maritime provinces, and shall leave nothing undone to assist in your development and further your interests in every way. In conclusion, may I point out that the fact that Moncton now becomes headquarters of one of the three regions of Canadian National Rys. System, where full regional staff will be located, and from which local purchases will be made, should be at least something in the way of an asset."

Sir Henry Thornton then sent the C.N.R. Director of Publicity to see the New Brunswick Premier and others, and on March 23, the Director telegraphed Premier Viot as follows:—"The reply to the resolution of the united boards of trade adopted at the Amherst meeting has been delayed owing to Sir Henry Thornton having been under the doctor's care and away from the office for the past 10 days. On the matter being laid before Sir Henry today, he authorized me to tell you that he will be pleased to receive the maritime provinces' representatives at Montreal during the week beginning April 9. An earlier date would be decided upon, but the records and staff of Sir Henry's office are being transferred from Ottawa to Montreal, and he will not be fully established here before that time. I am asking L. S. Brown, General Manager, Atlantic region, to place at the disposal of the maritime representatives one of the Canadian National business cars for the journey to Montreal and return. In acknowledging receipt of this wire, I would be glad to have any suggestion that you may care to make."

Subsequently it was arranged that the meeting should be held in Montreal on April 19.

Senator Tanner, Picton, N.S., asked in the Senate recently:—"Are Riviere du Loup and Monk, Que., the points fixed as western limits of the Canadian National Rys. Atlantic Division, and for what reason were they so fixed?" Senator Dandurand replied:—"Yes. That part of the Canadian National Rys. System which serves the maritime provinces is considered by the management to require close and concentrated attention, in order that the railway may more adequately meet the requirements of the public than has been the case in the past, and also in order that nothing be left undone to promote development and increase traffic. It was felt that if satisfactory results are to be obtained, that part of the property in question should be under the direction, not only of competent officers who enjoy the confidence of the public, but also that those officers should devote themselves unreservedly and continuously to their work. For these reasons it was the desire of the Canadian National Rys. directors that, for the time being at least, the officers of the Atlantic Region should not be burdened with too much territory. They point out that the dividing line could not be drawn at Quebec, because in good railway practice it is always disadvantageous to split operating regions in the center of a terminal. The same thing applies to Montreal. Furthermore, it is claimed there is no point between Quebec and Montreal at which a line could be drawn without seriously disturbing the general superintendents' operating districts. It is said that a division might have been made at Brockville, Ont., but that this would put too much mileage in

the Atlantic Region; and, furthermore, it is considered to be highly important that this main artery from Quebec, through Montreal, Toronto and Detroit, to Chicago, should remain under one general manager. Since it was considered to be impracticable from the point of view of efficiency and the welfare of the property to divide the Atlantic and Central Regions at Quebec or any point west thereof, the only other points which could be selected were Riviere du Loup and Monk."

Quebec District's Boundaries.

In consequence of the division of the Canadian National Rys. into three regions, the eastern boundary of the Quebec District on the Intercolonial Ry., is now at Riviere du Loup, Que. (exclusive of yard), to Superior Jct., Ont., instead of as formerly, from Mont Joli, Que. (exclusive of yard), to Armstrong, Ont.

President's Appointments.

Sir Henry Thornton has made the following:—

D. E. GALLOWAY, heretofore Assistant Vice President, G.T.R., to be Chief Assistant to President, C.N.R. Office, Montreal.

R. A. C. HENRY, heretofore Special Engineer, Railways and Canals Department, Ottawa, to be Director of the Bureau of Economics, which has been established to deal with all problems of an economic nature affecting the railways, reporting to, and receiving instructions from, the President; but he, and the Bureau, will be available at all times to the various departments, in connection with any economic problem that may require special study or investigation. Office, Montreal.

E. P. MALLORY, heretofore General Statistician, Toronto, to be Director, Bureau of Statistics, reporting to President. The Bureau of Statistics will provide statistical service for the several departments, and in addition to other assigned duties, will analyze and direct the compilation of divisional operating statistics, and other performance and cost data related to transportation. Office, Montreal.

W. S. THOMPSON, heretofore Publicity Agent, G.T.R., to be Director of Publicity, C.N.R. Office, Montreal.

Legal Department Appointments.

A. J. Reid, K.C., Regional Counsel, Central Region, Toronto, has announced the following:—

T. W. R. McRAE, heretofore Claims Agent, Personal Injury, Montreal, to be Chief Claims Agent. Office, Montreal.

D. F. McCRAW, heretofore Claims Agent, G.T.R., Toronto, to be Assistant Chief Claims Agent, Central Region. Office, Toronto.

A. EDGE, heretofore Claims Agent, Eastern Lines, Toronto, to be Division Claims Agent. Office, Toronto.

J. M. GILL, J. M. McKERROW and G. E. ELLIOTT, to be Claims Agents, Toronto.

W. C. MILLS, G. L. McCONNELL and A. MARCHINGTON, to be Claims Agents, Montreal.

H. A. CORMIER, heretofore Claims Agent, Quebec Province and National Transcontinental Ry. to Armstrong, Ont., Quebec, Que., to be Claims Agent, Quebec, Que.

Telegraphic reports of all accidents and fires on the Central Region, exclusive of the Michigan Division, resulting in death, personal injury or damage to property not owned by this company,

shall be made to T. W. R. McRae; a copy of such reports concerning the lines in Canada west and north of Belleville, Ont., excluding lines Hammer to Ottawa and Depot Harbor to Ottawa, shall also be addressed to D. F. McCraw; a copy of such reports concerning all lines east of Superior Jct., on the former National Transcontinental Ry., and east of Joliette, St. Rosalie Jct. and Richmond, shall also be addressed to H. A. Cormier.

General Traffic Department Appointments.

J. E. Dalrymple, Vice President in charge of Traffic, has announced the following:—

G. T. BELL, heretofore Passenger Traffic Manager, G.T.R., Montreal, to be Executive Assistant to Vice President of Traffic, C.N.R. Office, Montreal.

H. H. MELANSON, heretofore Passenger Traffic Manager, Canadian National Rys., Toronto, to be Passenger Traffic Manager. Office, Montreal.

H. C. MARTIN, heretofore Freight Traffic Manager, G.T.R., Montreal, to be General Freight Traffic Manager, C.N.R. Office, Montreal.

D. O. WOOD, heretofore General Foreign Freight Agent, Canadian National-Grand Trunk Rys., Montreal, to be Traffic Manager, Foreign Freight Department, C.N.R. His former position has been abolished. Office, Montreal.

A. T. WELDON, heretofore Assistant Freight Traffic Manager, Eastern Lines, Montreal, to be Traffic Manager, Atlantic Region. Office, Moncton, N.B.

W. P. FITZSIMMONS, heretofore Commissioner of Industries, G.T.R., to be Commissioner of Industries, Atlantic and Central Regions, C.N.R. Office, Montreal.

The position of Vice President in charge of Traffic at Toronto, held heretofore by C. A. HAYES, has been abolished.

Passenger Traffic Department Appointments.

H. H. Melanson, General Passenger Traffic Manager, has announced the following:—

C. W. JOHNSTON, heretofore Assistant General Passenger Agent, G.T.R., Montreal, to be Passenger Traffic Manager, C.N.R., reporting to General Passenger Traffic Manager, vice G. T. Bell, Passenger Traffic Manager, G.T.R. System, promoted. Office, Montreal.

W. S. COOKSON, heretofore General Passenger Agent, G.T.R., Montreal, to be Manager, Tariff and Ticket Bureau, C.N.R., reporting to General Passenger Traffic Manager. His former position has been abolished. Office, Montreal.

R. L. FAIRBAIRN, heretofore Assistant Passenger Traffic Manager, Eastern Lines, Toronto, to be Manager, Passenger Service Bureau, reporting to General Passenger Traffic Manager. His former position has been abolished. Office, Montreal.

J. R. MELVILLE, heretofore General Agent, Passenger Department, G.T.R., Toronto, to be Assistant to Manager, Passenger Service Bureau, C.N.R. Office, Montreal.

E. S. DAVIES, heretofore chief clerk to Passenger Traffic Manager, Toronto, has been appointed General Agent, Passenger Department, Montreal, supervising arrangements with respect to the handling of Chinese and other special traffic as assigned.

J. P. MARION has been appointed District Passenger Agent, with territory, lines in central region, Kingston, Harrowsmith, Madawaska, Callendar, Ont.,

and east to and including Grand Mere, St. Hyacinth, Richmond, Que., and Portland, Me., vice E. C. Elliott, appointed General Passenger Agent. Office, Montreal.

H. R. CHARLTON, heretofore General Advertising Agent, G.T.R., to be Manager, Advertising Bureau, C.N.R., reporting to General Passenger Traffic Manager. His former position has been abolished. Office, Montreal.

W. L. CRIGHTON, heretofore General Advertising Agent, C.N.R., Toronto, to be Assistant Manager, Advertising Bureau. His former position has been abolished. Office, Montreal.

R. F. MACLEOD, heretofore Assistant to Passenger Traffic Manager, Montreal, to be Assistant to General Passenger Traffic Manager. His former position has been abolished. Office, Montreal.

R. CREELMAN, heretofore Assistant Passenger Traffic Manager, Western Lines, Winnipeg, to be Passenger Traffic Manager, Western Region, reporting to General Passenger Traffic Manager, on administration; and to Passenger Traffic Manager, Montreal, on solicitation. His former position has been abolished. Office, Winnipeg.

W. E. DUPEROW, heretofore General Passenger Agent, Western Lines, Winnipeg, to be Passenger Traffic Manager, Central Region, except lines west of St. Clair and Detroit Rivers, reporting to General Passenger Traffic Manager, on administration, and to Passenger Traffic Manager, Montreal, on solicitation. The position of Passenger Traffic Manager, held heretofore by H. H. Melanson, has been abolished. Office, Toronto.

H. C. BOURLIER, heretofore Assistant General Passenger Agent, Toronto, to be General Passenger Agent, Central Region, west of Kingston, Harrowsmith, Madawaska, Callendar and LaReine, except west of St. Clair and Detroit Rivers, reporting to Passenger Traffic Manager, Toronto. His former position has been abolished. Office, Toronto.

E. C. ELLIOTT, heretofore District Passenger Agent, G.T.R., Montreal, to be General Passenger Agent, Central Region, C.N.R., Kingston, Harrowsmith, Madawaska, Callendar, LaReine and east, reporting to Passenger Traffic Manager, Toronto. The position of Assistant General Passenger Agent, G.T.R., Montreal, held heretofore by C. W. Johnston, has been abolished. Office, Montreal.

JAMES MORRISON, heretofore Assistant General Passenger Agent, Montreal, to be General Passenger Agent, Steamship Traffic, Central and Atlantic Regions, reporting to Passenger Traffic Manager, Montreal. His former position has been abolished. Office, Montreal.

C. K. HOWARD, heretofore General Tourist Agent, Toronto, to be General Tourist Agent, Montreal, reporting to General Passenger Traffic Manager. His former position has been abolished.

Sleeping, Dining and Parlor Cars and Railway Restaurants Department Appointments.

Walter Pratt, General Manager, has announced the following:—

J. M. GRIEVE, heretofore General Superintendent, Sleeping and Dining Cars, and News Service, to be General Superintendent. Office, Montreal.

R. M. FLETT, heretofore Equipment Supervisor, Sleeping, Dining and Parlor Car Department, to be Assistant to General Manager. Office, Montreal.

E. CAMERON, heretofore Superintendent, Halifax, N.S., to be Superintendent, with jurisdiction over all ser-

vices on Atlantic Region, and including trains 1, 2, 3 and 4 through to Montreal. Office, Halifax, N.S.

J. F. COLEMAN, heretofore Assistant Superintendent, Halifax, N.S., to be Assistant Superintendent. Office, Halifax, N.S.

C. H. WORBY, heretofore Assistant Superintendent, Sleeping, Dining and Parlor Cars, Western Lines, Winnipeg, to be Superintendent, with jurisdiction over services on all lines originating in Quebec Province, including trains 1 and 2 from Montreal to Winnipeg, but not including the International Limited and trains 1, 2, 3 and 4 from Montreal to Halifax. Office, Montreal.

J. A. McISAAC, to be Assistant Superintendent. Office, Montreal.

E. W. SMITH, heretofore Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, to be Superintendent, with jurisdiction over services on all lines in Ontario, and west of Detroit and St. Clair Rivers, except trains 1, 3 and 4, Toronto to Winnipeg. Office, Toronto.

Y. MOODY, Assistant Superintendent, Toronto, confirmed in that position.

L. C. HAYMAN, to be Assistant Superintendent. Office, Battle Creek, Mich.

JAMES GORMAN, heretofore Superintendent, Sleeping, Dining and Parlor Car Department, to be Superintendent, with jurisdiction over services on all lines comprising Western Region, including trains 3 and 4, Toronto to Winnipeg, but not including 1 and 2, Montreal to Winnipeg. Office, Winnipeg.

H. C. R. FORD, heretofore Chief Inspector, Dining Cars, Western Lines, to be Assistant Superintendent. Office, Winnipeg.

W. A. McDONALD, heretofore Sleeping and Dining Car Agent, Montreal, to be Assistant Superintendent. Office, Edmonton, Alta.

EUSTACE SMITH, heretofore Superintendent, Sleeping and Dining Cars, Toronto, to be Supervisor of Service. Office, Toronto.

M. L. FLETT, Commissary Purchasing Agent, confirmed in that position. Office, Montreal.

W. W. SWINDEN, Assistant to General Superintendent, confirmed in that position. Office, Montreal.

R. H. GRAHAM, Commissary Buyer, confirmed in that position. Office, Winnipeg.

The commissary store rooms are located at Halifax, N.S.; Quebec, Tunnel Station and Turcot, Que.; Toronto, Ont.; Battle Creek, Mich.; Winnipeg, Man.; Saskatoon, Sask.; Edmonton, Alta.; Prince Rupert and Vancouver, B.C.

J. M. Grieve, General Superintendent, Montreal, has announced the following:

J. L. INGHAM, to be Chief Inspector of Restaurants (system). Office, Montreal.

J. W. JOHNSON, to be Inspector of Restaurants. Office, Toronto.

E. Cameron, Superintendent, Halifax, N.S., has announced the following:—

S. J. FULLERTON, to be Sleeping and Dining Car Agent, Halifax, N.S.

D. J. STRAHAN, to be Road Inspector, Halifax, N.S.

W. C. SMITH and G. L. FLEMING, to be Platform Inspectors, Halifax, N.S.

P. S. BUTLER, to be Equipment Inspector, Halifax, N.S.

J. M. LeBLANC, to be Sleeping and Dining Car Agent, Moncton, N.B.

C. H. Worby, Superintendent, Montreal, has announced the following:—

A. R. McPHERSON, to be Sleeping and Dining Car Agent, Montreal.

A. T. LANDRY, to be Assistant Sleeping and Dining Car Agent, Montreal.

S. D. DULMAGE and B. F. NEVIN, to be Road Inspectors, Montreal.

F. S. BUSH and E. D. MILLEN, to be Platform Inspectors, Montreal.

D. E. MOLLINS, to be Equipment Inspector, Montreal.

E. L. MACDOUGALL, to be Sleeping and Dining Car Agent, Quebec, Que.

G. URQUHART, to be Equipment Inspector, Quebec, Que.

E. W. Smith, Superintendent, Toronto, has announced the following:—

J. K. WRIGHT, heretofore Assistant Superintendent, Dining and Parlor Cars, G.T.R., Toronto, to be Sleeping and Dining Car Agent, C.N.R., Toronto.

J. C. HICKEY, heretofore Road Inspector, Dining and Parlor Cars, G.T.R., Toronto, to be Road Inspector, Sleeping, Dining and Parlor Car and Railway Restaurant Department, C.N.R., Toronto.

O. I. VIRTUE, heretofore acting Agent, Sleeping, Dining and Parlor Car, Hotel and News Department, Ottawa, Ont., to be Road Inspector, Sleeping, Dining and Parlor Car and Railway Restaurant Department, Toronto.

W. MURRAY, heretofore Platform Inspector, Sleeping, Dining and Parlor Car, Hotel and News Department, Toronto, to be Platform Inspector, Sleeping, Dining and Parlor Car and Railway Restaurant Department, Toronto.

J. LOWREY, heretofore acting Agent, Sleeping, Dining and Parlor Car, Hotel and News Department, Toronto, to be Platform Inspector, Sleeping, Dining and Parlor Car and Railway Restaurant Department, Toronto.

J. J. ELDER, heretofore Equipment Inspector, Sleeping, Dining and Parlor Car, Hotel and News Department, Toronto, to be Equipment Inspector, Sleeping, Dining and Parlor Car and Railway Restaurant Department, Toronto.

H. J. LAMBKIN, heretofore Road Inspector, Sleeping, Dining and Parlor Car, Hotel and News Department, Winnipeg, to be Sleeping and Dining Car Agent, Ottawa, Ont.

J. Gorman, Superintendent, Winnipeg, has announced the following:—

A. E. McALLEN, to be Sleeping and Dining Car Agent, Winnipeg.

J. A. LEADER, to be Chief Inspector, Winnipeg.

A. R. WINFIELD and J. DALTON, to be Road Inspectors, Winnipeg.

W. POTTS, A. J. DONOVAN and F. BRADLEY, to be Platform Inspectors, Winnipeg.

C. B. WATT, to be Equipment Inspector, Winnipeg.

H. COLEY, to be Sleeping and Dining Car Agent, Saskatoon, Sask.

D. C. GILMORE, to be Sleeping and Dining Car Agent, Edmonton, Alta.

J. W. HORNE and A. G. FLETCHER, to be Platform Inspectors, Edmonton, Alta.

S. C. SYKES, to be Sleeping and Dining Car Agent, Vancouver, B.C.

L. R. PARRY, to be Sleeping and Dining Car Agent, Prince Rupert, B.C.

Freight Traffic Department Appointments.

H. C. Martin, General Freight Traffic Manager, has announced the following:

F. J. WATSON, heretofore General Freight Agent, G.T.R., Montreal, to be Freight Traffic Manager, C.N.R., with jurisdiction, Central Region, Fort William, Armstrong, Ont.; Detroit, Port Huron, Mich., and east. Office, Montreal. The position of Freight Traffic Manager, Toronto, held until recently

by GEO. STEPHEN, who has entered the C.P.R. service, has been abolished.

W. G. MANDERS, heretofore Assistant Freight Traffic Manager, Winnipeg, to be Freight Traffic Manager, with jurisdiction, Western Region, Fort William, Armstrong, Ont., and west. His former position has been abolished. Office, Winnipeg.

LORNE MACDONALD, heretofore Assistant General Freight Agent, G.T.R., Montreal, to be Assistant Freight Traffic Manager, C.N.R., with jurisdiction, Central Region, Napanee, Scotia Jct., North Bay, O'Brien and west to Fort William, Armstrong, Ont.; Detroit, Port Huron, Mich. Office, Toronto. The position of Division Freight Agent (Grand Trunk section), has been abolished.

R. W. LONG, heretofore Division Freight Agent, G.T.R., Toronto, to be General Freight Agent, C.N.R., with jurisdiction, Central Region, east of Napanee, Scotia Jct., North Bay and O'Brien, Ont. Office, Montreal.

R. E. PERRY, heretofore Assistant General Freight Agent, Montreal, to be Manager, Tariff Bureau, with jurisdiction, Central Region, Fort William, Armstrong, Ont.; Detroit, Port Huron, Mich., and east; also Atlantic Region. Office, Montreal.

JAMES ORR, heretofore Assistant General Freight Agent, Montreal, to be Assistant Manager, Tariff Bureau, with jurisdiction, Central Region, Fort William, Armstrong, Ont.; Detroit, Port Huron, Mich., and east; also Atlantic Region. Office, Montreal.

The positions of Assistant General Freight Agent, Tariff Bureau; Assistant General Freight Agent, Special Tariff Bureau; and Chiefs of Tariff Bureau (2), Montreal, have been abolished.

S. G. TIFFIN, heretofore Assistant General Freight Agent, Montreal, to be Assistant General Freight Agent, with jurisdiction extended to cover lines, Grand Trunk section, east of Hawkesbury and Napanee, Ont., in Central Region. Office, Montreal.

G. R. FAIRHEAD, heretofore Division Freight Agent, Toronto, to be Division Freight Agent, with jurisdiction extended to cover lines formerly under jurisdiction of Division Freight Agent, G.T.R., Toronto. Office, Toronto.

Purchases and Stores Department Appointments.

R. C. Vaughan, Director of Purchases and Stores, has announced the following:—

G. W. CAYE, heretofore General Purchasing Agent, G.T.R., to be Purchasing Agent, C.N.R. Office, Montreal.

L. LAVOIE, heretofore General Purchasing Agent, C.N.R., Toronto, to be Purchasing Agent. Office, Toronto.

J. W. CORBETT, heretofore Purchasing Agent, Canadian Government Merchant Marine Ltd., Montreal, to be Assistant Purchasing Agent, C.N.R. Office, Toronto.

F. H. KINNEAR, heretofore Assistant Purchasing Agent, Toronto, to be Purchasing Agent, Moncton, N.B.

F. W. TISDALE, Purchasing Agent, Winnipeg, is confirmed in that position.

C. C. LABRIE, heretofore Purchasing Agent, Vancouver, B.C., confirmed as Purchasing Agent there.

G. H. JENKINS, heretofore Assistant to General Purchasing Agent, G.T.R., Montreal, to be General Fuel Agent, C.N.R. Office, Montreal.

A. L. GRABURN, heretofore General Fuel Agent, Toronto, to be Assistant General Fuel Agent. Office, Montreal.

W. H. GRANT, heretofore General Tie Agent, Toronto, to be General Tie Agent, Montreal.

L. C. THOMSON, heretofore General Storekeeper, Toronto, to be Chief of Stores. Office, Montreal.

F. W. HARGRAVE, heretofore Assistant Purchasing Agent, Toronto, is transferred to Montreal, but title not yet announced.

E. J. McVEIGH, heretofore General Storekeeper, G.T.R., Montreal, to be General Storekeeper, C.N.R., Toronto.

E. D. TOYE, heretofore on special duty in office of Vice President, Purchasing, Supplies and Stores, Toronto, to be Assistant General Storekeeper, Toronto.

W. B. LOGAN, heretofore District Storekeeper, Moncton, N.B., to be General Storekeeper, Moncton, N.B.

A. E. COX, heretofore General Storekeeper, Western Lines, Winnipeg, to be General Storekeeper, Winnipeg.

D. ROBERTSON, heretofore Assistant General Storekeeper, Western Lines, Winnipeg, to be Assistant General Storekeeper, Winnipeg.

Operation and Construction Department Appointments.

D. Crombie, Chief of Transportation, has announced the following:—

F. PRICE, heretofore Superintendent of Car Service, G.T.R., to be Chief of Car Service, all lines, C.N.R. Office, Montreal.

J. P. DRISCOLL, heretofore General Superintendent of Car Service, Toronto, to be Chief of Car Accounts, all lines. Office, Montreal.

C. B. Brown, Chief Engineer, Operation Department, has announced the following:—

M. S. BLAIKLOCK, heretofore Engineer Maintenance of Way, G.T.R., Montreal, to be Assistant Chief Engineer, Operation Department, C.N.R. Office, Montreal.

C. N. MONSARATT, heretofore Consulting Engineer of Bridges, Toronto, to be Consulting Engineer, Operation Department. Office, Montreal.

R. G. GAGE, heretofore Signal and Electrical Engineer, Moncton, N.B., to be Electrical Engineer. Office, Montreal.

W. M. PUNTER, heretofore Signal Engineer, Eastern Lines, Canadian Northern Ry., Toronto, to be Signal Engineer, Operation Department. Office, Montreal.

W. A. DUFF, heretofore Engineer of Standards, Toronto, to be Engineer of Standards, Operation Department. Office, Montreal.

J. A. ELLIS, heretofore Assistant Engineer of Standards (Roadway Standards), Toronto, to be Assistant Engineer Roadway Standards, Operation Department. Office, Montreal.

R. O. STEWART, heretofore Assistant Engineer of Standards (Bridge Standards), Toronto, to be Assistant Engineer of Bridge Standards, Operation Department. Office, Montreal.

R. M. MITCHELL, heretofore Right of Way and Property Commissioner, Toronto, to be General Right of Way Agent, Operation Department. Office, Montreal.

LT.-COL. F. F. CLARKE, heretofore Chief Land Surveyor, Toronto, to be Chief Land Surveyor, Operation Department. Office, Montreal.

Investigation Department Appointments.

H. J. Page, Chief of Investigation Department, has announced the following:—

A. J. TINGLEY, heretofore District Special Agent, Moncton, N.B., to be

Superintendent of Investigation, Atlantic Region. Office, Moncton, N.B.

WM. TISDALE, to be Superintendent of Investigation, Northern Ontario, Southwestern Ontario and Montreal Districts, Central Region. Office, Toronto.

THOS. COOPER, to be Assistant Superintendent of Investigation, Northern Ontario, Southwestern Ontario and Montreal Districts, Central Region. Office, Toronto.

ROLAND FLYNN, to be Inspector of Investigation, Northern Ontario District, Central Region. Office, Toronto.

MILTON BOND, to be Inspector of Investigation, Southwestern Ontario District, Central Region. Office, Toronto.

L. C. BOISJOLY, to be Superintendent of Investigation, Quebec District, Central Region. Office, Montreal.

H. McMORRAN, to be Inspector of Investigation, Montreal District, Central Region. Office, Montreal.

J. W. WOZNACK, to be Inspector of Police, Michigan District, Central Region. Office, Detroit, Mich.

J. M. BANNERMAN, to be Superintendent of Investigation, Western Region. Office, Winnipeg.

GILBERT HODGE, to be Chief Special Agent, Central Vermont Ry., St. Albans, Vt.

Motive Power and Car Equipment Departments Appointments.

C. E. Brooks, Chief of Motive Power, and G. E. Smart, Chief of Car Equipment, have announced the following:—

W. F. CONNALL, heretofore Mechanical Engineer, Toronto, to be Mechanical Engineer, Montreal.

W. A. BOOTH, heretofore Engineer of Locomotive Construction, G.T.R., Montreal, to be chief draftsman, C.N.R. Office, Montreal.

W. H. CLEGG, heretofore Chief Inspector of Air Brake Equipment, Toronto, to be Chief Inspector of Air Brake and Car Heating Equipment, Montreal. It is his duty, generally to supervise the maintenance of air brake and car heating equipment, to establish standards, and to co-operate with regional officials in arranging for instruction of employes and methods of performing air brake and car heating work.

J. W. JOHNSTON, heretofore Chief Inspector, Car Lighting, Toronto, to be Chief Inspector of Car Lighting and Headlight Equipment, Montreal. It will be his duty, generally to supervise the maintenance of car lighting and headlight equipment, to establish standards, and to co-operate with regional officials in arranging for instruction of employes and methods of performing car lighting and headlight work.

Express Department Appointments.

W. D. Robb, Vice President in charge of Insurance, Lands, Express, Telegraphs, Colonization, etc., has announced the following:—

JOHN PULLEN, President, Canadian National Express Co., after long and faithful service, having retired under the company's pension plan, C. A. HAYES, heretofore Vice President of Traffic, Canadian National Rys., Toronto, is appointed General Manager, Express Department, Canadian National Rys. Office, Montreal.

C. A. Hayes, General Manager, Express Department, has announced the following:—

W. C. MUIR, heretofore Vice President and General Manager, Canadian National Express Co., Montreal, to be Assistant General Manager, Express De-

partment, C.N.R. His former position has been abolished. Office, Montreal.

G. E. BELLEROSE, heretofore Assistant to General Manager, Canadian National Express Co., Montreal, to be General Assistant, Express Department, C.N.R. His former position has been abolished. Office, Montreal.

Atlantic Region Appointments.

A. C. Barker, Superintendent of Transportation, has announced the following:

A. P. GORBELL, heretofore Superintendent of Car Service, Eastern Lines, Moncton, to be Assistant Superintendent of Transportation, Atlantic Region. Office, Moncton, N.B.

W. E. Barnes and G. E. McCoy have announced the following:—

W. C. HUNTER, heretofore Air Brake Inspector, Montreal, to be Inspector of Air Brake and Car Heating Equipment, Atlantic Region. He will supervise the maintenance of air brake and car heating equipment, and assist all concerned in operation of same. Office, Moncton, N.B.

H. V. BELYEA has been appointed Inspector of Car Lighting and Headlight Equipment, Atlantic Region. He will supervise the maintenance of car lighting and headlight equipment and assist all concerned in operation of same. Office, Moncton, N.B.

Central Region Appointments.

Major F. L. C. Bond, Regional Chief Engineer, has announced the following:

H. T. HAZEN, heretofore Chief Engineer, Eastern Lines, Canadian Northern Ry., Toronto, to be Assistant Chief Engineer, Central Region, Canadian National Rys. Office, Toronto.

G. P. MACLAREN, heretofore Engineer Maintenance of Way, Eastern Lines, Canadian Northern Ry., Toronto, to be Engineer Maintenance of Way, Central Region, Canadian National Rys. Office, Toronto.

H. B. STUART, heretofore Structural Engineer, G.T.R., Montreal, to be Bridge Engineer, Central Region, C.N.R. Office, Toronto.

C. P. DISNEY, heretofore Bridge Engineer, Eastern Lines, Canadian Northern Ry., Toronto, to be Assistant Bridge Engineer, Central Region, Canadian National Rys. Office, Toronto.

C. H. TILLET, heretofore Signal Engineer, G.T.R., Montreal, to be Signal Engineer, Central Region, C.N.R. Office, Toronto.

A. CRUMPTON, heretofore Valuation Engineer, G.T.R., Montreal, to be Valuation Engineer, Central Region, C.N.R. Office, Toronto.

GEORGE O'CONNELL, to be Superintendent of Work Equipment. Office, Toronto.

W. H. SECORD, heretofore Supervisor of Work Equipment, Eastern Lines, Toronto, to be Assistant Superintendent of Work Equipment, Central Region. Office, Toronto.

J. C. Garden, General Superintendent of Motive Power, has announced the following:—

T. C. HUDSON, heretofore General Master Mechanic, Montreal, to be Assistant General Superintendent Motive Power, Central Region. Office, Toronto.

G. M. WILSON, heretofore Superintendent Motive Power Shops, G.T.R., Montreal, to be Superintendent of Motive Power Shops, C.N.R. Office, Montreal.

J. ROBERTS, heretofore Superintendent Motive Power Shops, G.T.R., Stratford, Ont., to be Superintendent of Motive Power Shops, C.N.R. Office, Stratford.

G. F. KNIGHT, heretofore Superintendent St. Malo Shops, is confirmed in that position. Office, St. Malo.

OTIS GRANT, heretofore Superintendent of Shops, Leaside, Ont., is confirmed in that position. Office, Leaside.

R. J. NEEDHAM, heretofore Mechanical and Electrical Engineer, G.T.R., Montreal, to be Mechanical and Electrical Engineer, Central Region, C.N.R. Office, Toronto.

J. Coleman, General Superintendent, Car Equipment, has announced the following:—

T. M. HYMAN, heretofore Master Car Builder, Point St. Charles, G.T.R., Montreal, to be Superintendent Car Shops, C.N.R. Office, Montreal.

D. C. MESSEROLL, heretofore Master Car Builder, London Shops, G.T.R., London, Ont., to be Superintendent Car Shops, C.N.R. Office, London.

J. E. Morazain, General Superintendent, Quebec District, has had his jurisdiction extended from Riviere du Loup, Que. (exclusive of yard) to Superior Jct., Ont., instead of from Mont Joli, Que. (exclusive of yard), to Armstrong, Ont., as heretofore. He has announced the following:—

H. W. SHARPE, heretofore Master Mechanic, Quebec District, Quebec, Que., to be Superintendent Motive Power, Quebec District. Office, Quebec, Que.

E. G. THEOBALD, heretofore District Car Foreman, Quebec, Que., to be District Car Foreman, Quebec District, Central Region. Office, Quebec, Que.

W. B. WAY, Superintendent, Cochrane Division, Quebec District, Central Region, has had his jurisdiction extended west from Armstrong to Superior Jct., Ont.

W. R. Davidson, General Superintendent, Montreal District, has announced the following:—

E. R. BATTLE, heretofore Superintendent of Motive Power, Eastern Lines, G.T.R., Montreal, to be Superintendent Motive Power, Montreal District, Central Region, C.N.R. Office, Montreal.

A. B. MITCHELL, heretofore Master Car Builder, Eastern Lines, G.T.R., Montreal, to be Superintendent of Car Equipment, Montreal District, Central Region, C.N.R. Office, Montreal.

R. H. Fish, General Superintendent, Southwestern Ontario District, has announced the following:—

D. J. McCUAIG, heretofore Superintendent Motive Power, Ontario Lines, G.T.R., Toronto, to be Superintendent Motive Power, Southwestern Ontario District, Central Region. Office, Toronto.

GEORGE FISHER, heretofore Master Car Builder, Ontario Lines, G.T.R., London, Ont., to be Superintendent of Car Equipment, Southwestern Ontario District, Central Region, C.N.R. Office, Toronto.

W. R. Devenish, General Superintendent, Northern Ontario District, has announced the following:—

J. H. McALPINE, heretofore Master Mechanic, Toronto, to be Superintendent Motive Power, Northern Ontario District, Central Region. Office, Toronto.

W. H. LONG, heretofore General Car Foreman, Toronto, to be District Car Foreman, Northern Ontario District, Central Region. Office, Toronto.

Western Region Appointments.

A. E. Warren, General Manager, has announced the following:—

A. A. TISDALE, heretofore Assistant to General Manager, Western Lines, to be Assistant to General Manager, Western Region. Office, Winnipeg.

H. H. BREWER, heretofore Assistant General Manager, Western Lines, to be Assistant General Manager, Western Region. Office, Winnipeg.

H. A. DIXON, heretofore Chief Engineer, Western Lines, to be Regional Chief Engineer, Western Region. Office, Winnipeg.

A. H. EAGER, heretofore General Superintendent of Rolling Stock, Western Lines, to be General Superintendent Motive Power and Car Equipment, Western Region. Office, Winnipeg.

E. CRAWFORD, heretofore Superintendent of Car Service, Western Lines, to be Superintendent of Car Service, Western Region. Office, Winnipeg.

J. W. KIMBALL, heretofore Superintendent Boarding Car Department, Western Lines, to be Superintendent of Boarding Cars, Western Region. Office, Winnipeg.

Dr. J. M. LENEY, heretofore Assistant Chief Medical Officer, Western Lines, to be Assistant Chief Medical Officer, Western Region. Office, Winnipeg.

E. BRODERICK, heretofore Right of Way and Property Agent, Western Lines, to be Regional Right of Way Agent, Western Region. Office, Winnipeg.

J. R. CAMERON, heretofore Assistant General Manager, British Columbia District, Western Lines, to be Assistant General Manager, British Columbia District, Western Region. Office, Vancouver, B.C.

A. WILCOX, heretofore General Superintendent, Manitoba District, Western Lines, Winnipeg, to be General Superintendent, Manitoba District, Western Region. Office, Winnipeg.

B. T. CHAPPELL, heretofore General Superintendent, Saskatchewan District, Western Lines, to be General Superintendent, Saskatchewan District, Western Region. Office, Saskatoon, Sask.

W. A. BROWN, heretofore General Superintendent, Alberta District, Western Lines, to be General Superintendent, Alberta District, Western Region. Office, Edmonton, Alta.

J. H. PILLSBURY, heretofore Manager, Grand Trunk Pacific Drydock, Prince Rupert, B.C., to be Manager, Drydock, there.

A. H. Eager, General Superintendent Motive Power and Car Equipment, has announced the following:—

H. G. REID, heretofore General Master Mechanic, Western Lines, to be Assistant General Superintendent Motive Power, Western Region. Office, Winnipeg.

A. McCOWAN, heretofore Master Car Builder, Western Lines, to be Assistant General Superintendent Car Equipment, Western Region. Office, Winnipeg.

A. Wilcox, General Superintendent, Manitoba District, has announced the following:—

H. A. ENGLISH, heretofore Master Mechanic, Manitoba District, to be Superintendent Motive Power and Car Equipment, Manitoba District. Office, Winnipeg.

The officials heretofore termed assistant master mechanics, will hereafter be designated master mechanics.

B. T. Chappell, General Superintendent, Saskatchewan District, has announced the following:—

L. G. ROBLIN, heretofore Master Mechanic, Saskatchewan District, to be Superintendent Motive Power and Car Equipment, Saskatchewan District. Office, Saskatoon, Sask.

The officials heretofore termed assistant master mechanics, will hereafter be designated master mechanics.

W. A. Brown, General Superintendent,

Alberta District, has announced the following:—

J. KYLE, heretofore Master Mechanic, Alberta District, to be Superintendent Motive Power and Car Equipment, Alberta District. Office, Edmonton, Alta.

The officials heretofore termed assistant master mechanics will hereafter be designated master mechanics.

J. R. Cameron, Assistant General Manager, British Columbia District, has announced the following:—

C. J. QUANTIC, heretofore Master Mechanic, British Columbia District, to be Superintendent Motive Power and Car Equipment, British Columbia District. Office, Vancouver, B.C.

The officials heretofore termed assistant master mechanics will hereafter be designated master mechanics.

Removal of Officials' Offices.

Sir Henry Thornton, President; Gerard Ruel, Vice President and General Counsel; D. E. Galloway, Chief Assistant to President; R. A. C. Henry, Director, Bureau of Economics; and H. J. Page, Chief of Investigation Department, who had temporary offices at 122 Bank St., Ottawa, have removed to the Canadian National Rys. head office building, formerly G.T.R. general offices, 94 McGill St., Montreal. Major Graham A. Bell, Vice President, C.N.R. Co., and Vice President of Finance, C. N. Rys., does not expect to remove his office from Ottawa to Montreal much before May 1. The following officials of his department have already removed from Toronto to Montreal:—D. E. Brown, Chief Assistant to Vice President; C. E. Friend, Assistant General Comptroller; H. G. Foreman, Assistant General Treasurer, and C. D. Cowie, Assistant to Vice President. It is expected that his entire staff will be established in Montreal by May 1. J. B. McLaren, Comptroller, Central Region, has been moved from Montreal to Toronto, and A. E. Plant, acting Comptroller, Atlantic Region, has arrived in Moncton, N.B., from Portland, Me.

R. P. Ormsby, Secretary, C.N.R. Co., and numerous subsidiaries, has removed, with his staff, from Toronto to Montreal. E. P. Mallory, Director of Bureau of Statistics, and W. A. Tuxford, Chief of Pass Bureau, have also removed from Toronto to Montreal.

S. J. Hungerford, Vice President, Operation and Construction Departments, removed from Toronto to Montreal, in the middle of March, and is installed in the general office building, on the fourth floor. He took with him A. J. Hills, Assistant to Vice President, Operation and Construction; D. Crombie, Chief of Transportation; C. B. Brown, Chief Engineer, Operation Department; C. S. Gzowski, Chief Engineer, Construction Department; C. E. Brooks, Chief of Motive Power; G. E. Smart, Chief of Car Equipment; and W. Pratt, General Manager, Sleeping, Dining and Parlor Cars and Railway Restaurants. These officials' headquarters staffs have also been transferred from Toronto to Montreal.

R. C. Vaughan, Director of Purchases and Stores, who spent considerable time in Montreal during March, will remove his offices from the new union station, Toronto, to the Canadian National Express Building, 95 McGill St., Montreal, early in April, and will concentrate his immediate staff there, including, in addition to those already in Montreal, the following, who will be transferred from Toronto:—F. W. Hargrave, who will probably be given the title of Assistant Purchasing Agent; A. L. Graburn, As-

sistant General Fuel Agent, and W. H. Grant, General Tie Agent.

H. H. Melanson, General Passenger Traffic Manager, has transferred his office from Toronto to Montreal, as also have R. L. Fairbairn, Manager, Passenger Service Bureau; J. R. Melville, Assistant to Manager, Passenger Service Bureau, and W. L. Crighton, Assistant Manager, Advertising Bureau. W. E. Duperow has removed from Winnipeg to Toronto, on his appointment as Passenger Traffic Manager, Central Region, east of Detroit and St. Clair Rivers.

C. A. Hayes has removed from Toronto to Montreal, on his appointment as General Manager C.N.R. Express Department, and is located in the Canadian National Express Building.

C. G. Bowker, General Manager, Central Region, removed from Montreal to Toronto, early in March, and is located in the new union station. The following officials were also transferred from Montreal to Toronto:—W. A. Kingsland, Assistant General Manager; C. F. Needham, Assistant to General Manager; F. L. C. Bond, Regional Chief Engineer; C. R. Moore, General Superintendent of Transportation; J. Coleman, General Superintendent, Car Equipment; J. C. Garden, General Superintendent, Motive Power; C. H. Nicholson, Manager Canada Atlantic Transit Co., etc.; H. B. Stuart, Bridge Engineer; T. C. Hudson, Assistant General Superintendent Motive Power, and R. J. Needham, Mechanical and Electrical Engineer. G. C. Jones, Assistant General Manager, has removed from Toronto to Montreal.

The C.N.R. has leased some 90,000 sq. ft. of space, consisting of a half of the third floor, and the whole of the two top floors, of the building occupied formerly by Almy's Ltd., corner of St. Catherine and Bleury Streets, Montreal, which is being occupied by the General Auditor of Revenues' staff, the car accounting, and some other branches of the Finance Department.

The G.T.R. divisional freight office staff, located formerly in the new union station, Toronto, has been consolidated with the Canadian National Rys. general freight department, in the Royal Bank Building, King and Yonge Sts., Toronto.

A Toronto paper stated recently that the C.N.R. dining and sleeping car crews, which had had their headquarters in Toronto, would be shifted to Montreal, and that about 60 men would be affected. We are officially advised that no dining and sleeping car crews are being transferred from Toronto to Montreal. The creation of regions has in some cases altered certain officers' jurisdiction over certain dining and sleeping car crews, but it does not in any way affect the home quarters, or operation, of any of the crews which have headquarters in Toronto.

Nova Scotia Coal for Canadian National Rys.—J. S. Woodsworth, Winnipeg Center, said in the House of Commons recently:—"I am informed that the Canadian National Rys. are refusing to take the run of the mine coal from any small companies in Maccan and River Hebert districts, and that this means that some 800 men are thrown out of work, and these districts are being ruined. Has the Government any information with regard to the withdrawal of orders from these districts?" Acting Minister of Railways Graham replied:—"The matter is under consideration. Time may be given in order to install certain screens that will help out the difficulty. That matter is being considered."

The Canadian Pacific Railway's 1922 Results.

The C.P.R. report for 1922 shows gross earnings of \$186,675,036, compared with \$193,021,854 in 1921, and net earnings of \$36,301,691, compared with \$34,201,740 in 1921. After all deductions, the 1922 contribution to surplus was \$1,025,509, compared with \$755,391 in 1921. Special income was \$11,092,355, compared with \$10,987,199 in 1921, and the special income surplus at the end of 1922 was \$25,059,845, compared with \$21,767,490 at the end of 1921. The operating ratio for 1922 was 80.55, compared with 82.28 in 1921. While gross earnings for the year were \$6,346,818 less than in 1921, the net earnings were \$2,099,950 more, so that on the year's operations a substantial improvement was secured. The gross earnings for the first nine months were consistently smaller than in corresponding months of 1921, but with the large crop movement, beginning in October, coincidentally with a quickening of the improvement in business and economic conditions generally, gross returns in the last three months were very much better than in the last three of 1921, with a corresponding improvement in net returns.

Net earnings in 1922, in addition to being an improvement over those of 1921, were a still greater improvement over those of 1920, in view of which it may be confidently stated that the company is making real progress in its endeavor to restore railway operating conditions to the status occupied before the great wave of inflation made them so unfavorable. In 1921, despite the unfortunate condition of business, and therefore of traffic, not only in Canada, but throughout the world, the company was able to show some improvement over 1920, and in 1922 this progress was carried a step further. With all conditions pointing to a continuation of the economic recovery, there is every reason to hope that the company will enjoy further success in getting railway operating revenues and expenses into proper relationship—a relationship most adequately expressed by an operating ratio of between 70 and 75.

The 1922 earnings were equivalent to a return of 11.66% on the common stock. This is significant, and lends strength to the belief that good progress is being made in overcoming the effects of the inflation period, as this is the best return on capital the company has secured since 1917, when the earnings on common were 15.89%. In 1918 the return was 10.97%; in 1919, 10.8%; in 1920, 11.4%, and in 1921, 11.5%. While there is a wide margin between the 1917 return of 15.89%, and the 1922 return of 11.66%, the fact that the 1922 return was better than in any year from 1918 to 1921 cannot be regarded as otherwise than holding out encouragement for the future.

Special income account earnings of \$11,092,355, compared with \$10,987,199 in 1921, show a prosperous condition, and returns from this department of the company's business must be regarded as highly satisfactory. The company's land sales, during the year, were on a greatly restricted scale, only 107,503 acres having been sold, at an average price of \$16.12. It is evident, however, that this was not due to any influence within the company's power to change or remedy, but was a logical result of business and economic conditions throughout the west, particularly during the first part of the year, and to restricted immigration. Improvement in this department of the

company's business can be expected to accompany improvement in its transportation business, and, like that, will be dependent on the country's progress.

The C.P.R., like all other steamship operators, found 1922 a trying year, the unfavorable traffic conditions prevailing until the latter part of the year, adding to the severity of the competition experienced, and to the fact of there being most unsettled conditions in the Orient, to make conditions generally bad. The greatly reduced operating costs in 1922, compared with 1921, are, however, an encouraging feature. While the decrease in gross earnings was large, the decrease in expenses, amounting to 37% on a per voyage basis, was enough to compensate for the decrease in gross earnings, and, in addition, to increase net earnings by \$234,000. The decreased expenses were not secured at the expense of the steamship service, as is evident from the fact that everything in connection with it has been maintained at the highest standard. With the new ships, *Empress of Canada* and *Empress of Australia*, operating on the Pacific route, good business there is contemplated, despite the severity of the competition, and the outlook for the shipping branch of the service in its entirety is considered bright.

One of the outstanding features of C.P.R. progress in 1922 was the large improvement secured in operating results by the Minneapolis, St. Paul & Sault Ste. Marie Ry. Net operating revenues for 1922 were \$7,178,972, compared with a loss of \$696,584 in 1921. This improvement is expected to continue, and in view of the manner in which the road's earnings have picked up, on the strength of the business improvement which has so far taken place, the expectation appears to be entirely reasonable.

Faith in the future is reflected in the directors' action in asking approval of proposed expenditures on capital account for 1923, of \$7,630,100, to cover cost of replacing and enlarging structures, improving terminal facilities and track, improving the telegraph service, etc., and in the request for approval of issue and sale of 4% consolidated debenture stock to provide for nearly 100 miles of railway construction in the west. This expectation of greater development and bigger business in Canada is further shown by the action taken to secure equipment to the value of \$12,295,000, among which will be 36 locomotives, 1,000 box cars, and other freight and passenger equipment of various types.

Analysis of the company's traffic during 1922 shows that the amount of freight carried, while substantially larger than in 1921, was somewhat less than in 1920. The differences in the average receipt per ton mile are notable, that between the average in 1922 and 1921 furnishing the explanation of the decrease in gross earnings, despite the greater volume of freight traffic handled. The average receipt per ton mile in 1921 was 1.19c., and in 1922 but 0.99c., which comparison furnishes an adequate idea of the extent to which the general rate reductions and the restoration of the Crowsnest rates on grain have cut into the company's revenues. Passenger traffic in 1922 was somewhat of a disappointment, the number of passengers carried, and the number of passenger miles, both showing decreases from 1921, but indications for future passenger traffic are encouraging.

Viewing the matter broadly, perhaps the most outstanding feature of the company's 1922 operations was the remarkable "come-back" accomplished in the latter part of the year. The first seven months were most discouraging, showing not inconsiderable declines in net earnings compared with 1921, but the results secured in the last part of the year were so good as to make the improvement secured verge on the spectacular, particularly in view of the reduced rates of carriage at which transportation service was performed. The balance sheet shows that the hard times of the early part of 1922, and practically all of 1921, combined with the effects of the foregoing period of inflation, which tended to affect the railway industry in its entirety most adversely, have not affected the C.P.R.'s strong financial position, or detracted from its position of pre-eminence as Canada's leading industrial enterprise. With a continuation of the improvement in economic conditions, and with continued favorable agricultural production, for both of which, there is every reason to hope, there is every prospect that the C.P.R. will continue to make progress in its task of getting railway operating revenues and expenses into the relationship which is desirable not only from the corporate viewpoint, but which, in the final analysis, is equally desirable from the viewpoint of Canadian industry and the Canadian public.

Jasper to Remain a Divisional Point.

The Board of Railway Commissioners issued order 33,402, March 3, as follows: Re application of Canadian National Rys., under sec. 179, for leave to close the divisional point at Jasper, Alta., and consolidate it with the existing terminal facilities at Lucerne, B.C.: Upon hearing the application of Lucerne, Sept. 12, 1922, the applicant company, citizens of Lucerne, and firemen of the applicant company being represented at the hearing, and what was alleged, the Board orders that the application to close the divisional point at Jasper, be refused; the divisional point to be consolidated at Jasper; the work to commence not later than April 1, 1923, and to be completed not later than Oct. 1, 1923; the financial loss, if any, involved by the removal of employes from Lucerne to Jasper to be paid by the applicant company; and in case of dispute as to such actual loss of money, the same to be settled by the Board.

Midland Grain Elevators.—Senator Bennett, Simcoe East, Ont., enquired in the Senate recently: "Are the two grain elevators at Midland, Ont., known as the Aberdeen and the Grand Trunk elevators, now under Canadian National Rys. ownership, and if not, do the Canadian National Rys. propose to buy both or either of them?" Senator Dandurand replied: "The Canadian National Rys. own two elevators at Midland, which are sometimes referred to by the names mentioned."

Immoral Literature on Canadian National Trains?—The Roman Catholic Commercial Travellers' Association, Quebec, is reported to have protested to Sir Henry Thornton that immoral literature is being sold by news agents on C.N. trains.

The Hudson Bay Railway Completion Problem.

The discussion which has been going on in the prairie provinces for some considerable time, culminated in the House of Commons on March 12, when Andrew Knox, Prince Albert, Sask., moved:—"That, in the opinion of this House, the Government of Canada give further consideration to the report of the Senate committee on the Hudson Bay Ry., with a view to safeguarding the investment of public moneys made in the construction of that portion of the work completed to date, and that the Government recognize the priority of this undertaking with reference to other transportation projects started subsequent to the Hudson Bay Ry." Mr. Knox said the matter had been before the people for the past 40 years, and had been discussed from every angle. The project had been investigated time and time again, and as a result of the various investigations, both of the old historic parties have endorsed it. Nothing had ever been brought forward to prove it is not feasible or not workable. Work on the railway was started in 1910, the present acting Minister of Railways turning the first sod. When the change of government came in 1911, the project was again the subject of investigation, with the result that the new government was convinced of its feasibility and the advisability of carrying it on. Work proceeded slowly up to 1918, when, without any apparent reason, except possibly that of necessity for economy, the work was stopped, and during the past four years or more nothing has been done. The railway is 424 miles long, from the Saskatchewan River at Pas, Man., to Hudson Bay; the grading has all been done, but there remain 92 miles upon which rails have not been laid. There is a fortnightly train service from Pas to mile 214. Up to the time work was stopped, about \$14,000,000 had been expended on the railway, and \$6,000,000 on the terminals at Port Nelson. The Deputy Minister of Railways advised the Senate committee which looked into the project in 1920, that it was estimated that \$2,500,000 more would complete the railway and terminals. The object in view is to have the railway completed and brought up to standard. There is no necessity to discuss the feasibility of the project, as that has been investigated very fully, the Senate committee of 1920 reporting that it is feasible and likely to be profitable. The motion asked that this project be given priority over other transportation projects started at a later date. This has no reference to certain branch lines, many of which are urgently needed, but more particularly to the projected Prince Albert-Paddock Wood line, and the Melfort northeasterly line. The Hudson Bay Ry. was intended to be built from the sale of certain western lands which were set apart for that purpose. Whether there would be sufficient to complete the road, he did not know, but sufficient had been realized up to the present to practically cover all the expenditures made. He had nothing to say against the development of the Vancouver route, but the prairie provinces require more outlets than they have. The strongest argument in favor of the Hudson Bay route, in preference to any other, is the short railway haul, which is necessarily the cheap haul. If the freight rates on the Hudson Bay line were the same per mile as they are on any other route, there would certainly be a great saving in

transporting freight. It is fully expected that there would be a higher insurance rate at the beginning, but the elimination of so much rail transportation would far more than offset this extra expense. The sentiment in the prairie provinces is all in favor of the completion of the line, as shown by the resolutions passed by the three legislatures, and by all kinds of public bodies there. In summing up, he said: "This project has been found feasible after repeated investigations, and nothing has ever transpired to prove it otherwise. The people of the prairies claim the completion of this road as their right and as a national enterprise. Money was provided for it by the sale of lands in the west especially set aside for that purpose. We believe there is no great opposition to the road, except possibly among a few doubting Thomases and those who may be directly interested. Conditions demand that if we can get a shorter and a cheaper route to the European markets we must take advantage of it, and this fact is all the more emphasized since the tariff barrier has been increased between us and the United States market. We believe that with an increase in the British preference, coupled with this shorter and cheaper route, much of the handicap imposed upon us by the United States tariff would disappear, and that a better, brighter day would dawn for the western provinces, and incidentally for the whole of Canada."

T. W. Bird, Nelson, in seconding the motion, reviewed the progress of development in the prairie provinces, and claimed that the completion of the railway would not only free the farmers from the isolation in which they are placed, but would bring about a still greater development in the future.

W. Duff, Lunenburg, N.S., said that he could not discuss the feasibility of the construction of the railway, as he did not know very much about it, but he considered that the navigation conditions between Port Nelson and Europe are such that it would not be a valuable route. He did not think that the project should be gone on with until Parliament was possessed of further information as to the navigation of Hudson Bay and Straits.

Other members who took part in the discussion were: R. Forke, Brandon, Man., leader of the Progressives; W. F. Maclean, South York, Ont.; C. C. Davis, North Battleford, Sask.; W. K. Baldwin, Stanstead, Que.; D. W. Warner, Strathcona, Alta.; J. Miller, Qu'Appelle, Sask.; C. W. Stewart, Humboldt, Sask.; M. N. Campbell, Mackenzie, Sask., most of whom gave a general support to the motion, but all expressed sympathy with the desire for better railway facilities.

Hon. G. P. Graham, acting Minister of Railways, reviewed the legislation of 1906 and 1908 with respect to a land grant for the construction of a railway from Manitoba to Hudson Bay, stating that there could be no question that there was in the mind of Parliament—at least the idea was expressed as fairly as it could be without putting the words in the statute—that certain lands might be sold and the money received from them as pre-emptions, be used to construct the Hudson Bay railway. Several suggestions had been made in connection with the matter which were worthy of consideration, in particular one for the completion of the line for 30 miles from

the present end of track, to the head of navigation on the Nelson River. He then said: "The situation is this: The Government has no idea of abandoning the Hudson Bay Ry., but we have to go slowly—perhaps I should not use that word after the addresses we have heard tonight—but we have to go carefully and with caution. The position of the second 118 miles at present is almost as if it had never been built. I believe—and I propose to make this recommendation—that we ought to proceed to put that second 118 miles in such shape that it could be operated, and to rescue some million dollars worth of material—I do not mean to take it out, but to rescue it—and put into workable shape, that 118 miles of line. Now you will ask why we wanted to take the rails out. Well, there was a report made by the board, prior to the coming of Sir Henry Thornton, suggesting that these 80 lb. rails might be taken out for the present and used for branch lines that were being hardly pressed for, but, on his arrival, Sir Henry Thornton made the suggestion that we had better have more investigation before we removed that material, because, to begin with, in order to get the line in condition to move the material over it, a good many thousand dollars would have to be expended; so that at present Sir Henry Thornton's advice is—and I have discussed it with him—that we proceed to expend an amount to begin the work of putting the 118 miles, which is now practically out of business, into respectable operating condition. To put it in first class condition would take a great deal of money, but I am going to ask my colleagues to allow me to bring down an item for the purpose of beginning the work at least of putting the 118 miles in condition, so that, along the line, where there are poles, nuts, ties and fish-plates and all that kind of thing, we can save all this material, level up and realign the rails, and straighten up the trestles and bridges that have become warped for lack of care for the last three or four years. Of course, that will take some time and some money, but when that is done we will be in position to discuss what is the next step to take. This will give a total length of track of 332 miles. I think the first duty of the Government to the country is to place the 118 miles in repair again. When that is completed we can decide what the next step will be. In the meantime, I assure the House that, so far as the Government is concerned, they have never suggested, so far as I have any knowledge, the abandonment of the Hudson Bay project."

Right Hon. A. Meighen, leader of the Opposition, said that the motion did not have the definiteness and meaningfulness that one would like. The first part asked the Government to consider a report of a Senate committee for the purpose of saving an investment in the Hudson Bay Ry. The Government, accepting that, would be just where it was before. The second part of the motion called upon the Government to give priority to this particular undertaking to those started subsequently. He favored the completion of the railway; the country had been committed to the project for the last 15 years, and it was a matter of good faith that the covenant be kept. The late Government did not feel that it could justify acceding to the pressure to con-

tinue building the line during its term of office, but the situation is rather different now—though he did not say that even yet the time had come when the capital necessary for the completion of the line, and the terminal facilities, and the harbor on the scale originally con-

templated, could be provided. It did seem to him, however, that the completion of the railway, and the harbor, on a less pretentious and less permanent scale, might be carried through so that the project could be tested. He supported the motion because, if it were nega-

tived, it would leave the Government free to adopt and enter upon any transportation project, leaving this particular project, to which the country had been committed for years, in abeyance indefinitely.

Mr. Knox having replied, the motion was agreed to.

Can Alberta Coal be Transported to Ontario Successfully?

M. J. Butler, C.M.G., LL.B., formerly Deputy Minister of Railways and Canals and Chairman of the Canadian Government Railways Management Board, now retired and living at Oakville, Ont., wrote a Toronto paper recently as follows:—"The problem of transportation of coal from the west to the east is surely so important that 'a plea for courageously attacking it,' in the words of President C. V. Corless, mining engineer, ought not to require an apology. The usual condemnation given out by traffic officers ought not to be considered. The freight rate is quoted on a basis of a certain class of rate in the freight schedule, and it is predicated on an experience had in handling odd car lots, instead of what might or could be done in treating such a special train load lot on the most economical possible basis.

"I venture to submit for consideration the following solution: Solid trains, from a central point, where train loads may be assembled from the mine or mines. A locomotive of the latest and most powerful type, capable of hauling over our transcontinental lines with 4-10th of 1% grades, 7,500 tons gross, a net tonnage of 5,000 tons; this may be increased in favorable weather. Coal cars of a capacity of 100 tons, 50 cars to the train, so that the length of the train over-all will be about 2,400 ft. Local distributing yards, with ample facilities for the quick and economical discharge of the train.

"The Virginian Ry. is doing much better than the above. 120-ton capacity cars are in use, 84 cars to the train, making 10,080 tons of coal per trip. Locomotives and vans are changed every 2nd Division, or as may work out best.

"From the Alberta mines to Winnipeg is about 975 miles. Allow earnings per train mile of \$5, a fairly generous rate, run the train back empty, and the cost will be $975 \times 2 \times \$5.00 = \$9,750$, or per ton on the basis of 5,000 tons at \$1.95. Using 10,000 tons train, the cost would be cut in half, or 97½¢ a ton of coal. The distance from the mines to Cochrane is 1,751 miles, so with the same allowance the cost per ton would be \$3.50.

"The mileage to Port Arthur is 1,413 and the cost per ton delivered would be \$2.82, from which point, with properly equipped shipping docks, it could be transported to all points on Lakes Erie and Huron, and Georgian Bay, and, after the Welland Canal is completed, to Lake Ontario points at a cost on the dock not exceeding \$2.50 additional a ton. So that a fair average transportation charge from Alberta mines to Port Colborne would not exceed, should not exceed, \$5.32. I understand coal may be bought loaded on the cars at the mines for \$2, hence total cost would be in the neighborhood of \$7.50 a ton. United States coal is now costing at Toronto, \$10.30 a short ton; local yard charges would be the same for all coal delivery to any consumer."

Senator J. D. Reid read the foregoing letter in the Senate recently, and said that Mr. Butler was the only man who agreed with him when he was Minister

of Railways and when he suggested that the Dominion Government should buy 5,000 cars and enough locomotives to haul them, half of the equipment to be handed over to the C.P.R. and the other half to the Canadian National Rys., with which to carry coal to central Canada from both Nova Scotia and the western provinces. His proposal was, not to charge the railways interest on the cost of this equipment, but to require them to haul the coal at cost and to keep the equipment in good repair. He estimated that the necessary equipment would cost between \$20,000,000 and \$25,000,000. No doubt the railways did not view the proposition with favor, because to carry coal at actual cost would produce a demand for correspondingly lower rates throughout the whole country.

Keen interest in the possibility of supplying eastern Canada with Alberta coal is evident in the west, as shown by a resolution passed by the Alberta Legislature on motion of Premier Greenfield, urging Dominion and provincial co-operation, and lower freight rates, to enable Alberta coal to be placed on the Ontario market at a price to compete with U.S. coal. The resolution was unanimously endorsed. J. L. Cote, former Minister of Mines, suggested that a trainload of Alberta coal should be sent east to demonstrate that it could be successfully and economically used in competition with the U.S. product, and urged that in developing a market only the best grade of coal be shipped, the standard to be maintained by grading at Winnipeg. Premier Greenfield is reported to have stated that consideration was being given to the possibility of waiving the provincial tax of 10c. a ton on coal shipped to eastern competitive markets.

Sir Henry Thornton, President, Canadian National Rys., gave evidence before the Senate fuel committee in Ottawa recently, and is reported to have stated that the prospects of bringing coal east from Alberta appear "fairly hopeful," but that railway rates must not be reduced unduly to permit this to be done. He is reported to have called attention to the fact that whatever is done for Alberta coal interests in the way of providing markets, would also have to be done for the Nova Scotia operators. He emphasized the desirability of having Canada supply her own fuel requirements, but also pointed out the Canadian National Rys.' financial condition and his primary duty to the public to remedy that condition.

As far as Canadian Railway and Marine World can ascertain, the possibilities claimed in Mr. Butler's letter are not likely to be converted into realities for some time to come, if ever. While his estimate of a train mile cost of \$5 from the western mines to the head of Lake Superior and return seems reasonable, and while his allowance of \$2.50 a ton to cover cost of movement by water from the head of the lakes to lower Ontario points is also reasonable, and even liberal, exception must be taken to his estimate of probable train tonnage,

and also as to the cost f.o.b. western mines of a coal suitable for both long distance carriage and for eastern consumption. The latest quotation available on lignite, which has a high moisture content, and which is universally transported in box cars and kept in storage under cover, is \$3.57 a ton f.o.b. mine, while that on coal suitable for locomotive use, in large lots, in \$5 a ton f.o.b. western mines. With the power now available, the heaviest trains that can be hauled from the western mine area to the head of the lakes average around 3,000 tons. It is possible that with the provision of articulated locomotives, or possibly decapods of the heaviest type, trains carrying 5,000 net tons could be operated eastbound over the route specified. The comparison with the Virginian Ry. operation loses most of its significance when it is remembered that that line is almost entirely a coal carrying one, with a very favorable grade from the mines to tidewater. The capital cost of the large locomotives, and high capacity cars, for the movement would be great, and the resulting interest charges would have to be reckoned, as would also the cost of an efficient transshipping plant at the head of Lake Superior. Costs incidental to the marshalling of cars would also have to be considered.

It would certainly be most advantageous if Canada could get along without the necessity of large coal importation, and every effort to increase the area of consumption for Canadian coal is therefore most worthy of consideration. The unfortunate fact of the matter, as concerns western coal, however, is that with U.S. coal holding the market at the head of Lake Superior and probably west to the Manitoba boundary, against western Canadian coal, the amount of decrease in western mine production cost, and the amount of decrease in transportation cost, necessary to enable the western coal to not only take the market away from U.S. coal at the head of Lake Superior and west of it, but to take the market away from U.S. coal in eastern Ontario, would have to be greater than now seems possible.

If the desire to be able to rely on Canada's own coal and to be independent of foreign production should be given prior consideration over the matter of costs alone, western coal could be brought east, by having the general public foot the bill, through the payment of additional taxation to compensate for greater Canadian National Rys. deficits; but if the proposition be regarded as a strictly economic one, it must be recognized that if the traffic movement proposed be made possible by unduly reduced railway rates, the loss occasioned will be no smaller owing to its being concealed.

C. A. Harwood, K.C., Solicitor, Central Region, Canadian National Rys., Montreal, writes: "I am enclosing my subscription for Canadian Railway and Marine World, which supplies me with very important material and information."

Self Propelled Cars on Steam Railways.

The Canadian National Rys. now have 11 self propelled cars, as follows: no. 15,800, formerly a gasoline electric car, operating between Winnipeg and Transcona, but now at the Niagara, St. Catharines & Toronto shops at St. Catharines, Ont., for conversion into a storage battery car; 15,801, storage battery car now operating between Toronto and Beaverton; 15,802, the larger of the two battery cars bought from Cambria & Indiana Rd., now being overhauled at St. Catharines, preparatory to being run between Bathurst and Campbellton, N.B.; 15,803, the other battery car bought from Cambria & Indiana Rd., now operating between Brockville and Westport, Ont.; 15,805, steam car which was operating between Trenton, Picton and Napanee, Ont., but not operating at the time of writing; 15,810, a small gasoline car, with Winton chassis and 6-cylinder engine, which was operating between Souris and Elmira, Prince Edward Island Ry., but which has been replaced by steam train service during the winter; 15,811, a small Ledoux, Jennings gasoline car, operating on the Stanley Branch, Maritime District; 15,812, Ledoux, Jennings gasoline car, operating between Victoria and Sooke, Vancouver Island; 15,813, Ledoux, Jennings gasoline car, also operating between Victoria and Sooke; 15,814, Service gasoline car operating between Trenton, Napanee and Picton, Ont., and 15,815, a Ledoux, Jennings gasoline car, similar to 15,814, acquired recently, and also operating between Trenton, Napanee and Picton.

In addition to the above, construction will soon be started at the Niagara, St. Catharines & Toronto shops of storage battery car 15,804, which will be very similar to car 15,801, which was described and illustrated in preceding numbers of Canadian Railway and Marine World. This car will be of all steel construction, about 60 ft. long, and with seating accommodation for about 60 passengers. It will be equipped with 260 A-12-H Edison batteries, and 4 General Electric 261-A motors. The trucks, to be supplied by Canadian Car & Foundry Co., will be of the ball bearing type. S.K.F. ball bearings will be used.

Car 15,800, which was heretofore of the gas electric type, is undergoing radical change in being converted into a storage battery car. Its dimensions were as follows:—

Length over couplers.....	58 ft. 11 in.
Length over end sills.....	53 ft. 5½ in.
Truck centers.....	40 ft. 7 in.
Width over all at eaves.....	10 ft. 8½ in.
Height, rail to top of roof.....	12 ft. 6 in.
Truck wheel base.....	6 ft.

As a gasoline electric car, it was equipped with a power plant, consisting of a G.E. gasoline engine, coupled with generator, the engine having 8 cylinders, and developing up to 175 h.p., and the dynamo being rated at 80 k.w. It had only 2 motors, the drive being to the leading truck axles. The motors were G.E. type 205B. The gasoline engine, generator and motors, are being taken out, and will be replaced by 250 Edison A-12-H storage batteries and four G.E. type G-261A ball bearing motors of 25 h.p. each. The car will be arranged for double end operation, with standard series parallel controller at each end, and the ends will be altered to form standard vestibules, with a compartment for the motorman, at each end. To provide for the addition of a rear vestibule, the sills will be extended at the back, and in addition,

two new members in the form of sill extensions will be put in to secure added strength. The car is of all steel construction, with 4 sills of channel section; to secure additional strength and rigidity 5 transverse members of truss construction will be put in between the bolsters.

As a gas-electric car, the weight was about 44 tons, but it is anticipated that when the conversion into a storage battery car is completed, it will be only 35 tons. A large saving in weight will be introduced by replacing the old engine and generator set with batteries, while the 4 new motors will have an aggregate weight much less than the 2 old style motors. The new ball bearing trucks will be lighter than the trucks heretofore under the car. The car body will be arranged to have a seating capacity of nearly 100, and the interior will be in one compartment only. When the conversion is completed, the car will be returned to Winnipeg, to its run between Winnipeg and Transcona, 7.1 miles, on which it had been making 7 round trips daily. It is felt that the conversion into a storage battery car will introduce a large saving, as maintenance expenses were very heavy with the old equipment, and also because there is an abundance of cheap electrical power available.

Battery car 15,802, the overhaul of which at St. Catharines, preparatory to it being placed on the Bathurst-Campbellton run, is about completed, will be equipped with 277 Edison A-12-H batteries, 4 Westinghouse V65-A3 ball bearing motors of 25 h.p. each, and Brill 69E ball bearing trucks. The seating in this car, which was described in a preceding issue of Canadian Railway and Marine World, will be rearranged somewhat, and a smoking compartment and lavatory will be installed.

Battery car 15,803, now operating between Brockville and Westport, Ont., was overhauled at St. Catharines and turned out with 110 MVX Ironclad Exide batteries, 4 Westinghouse V65-A3 motors and Brill type 69E ball bearing trucks. The car is making 107 miles daily, the current being obtained from the hydro system at Brockville, and the batteries being charged during the night.

The gasoline car ordered by the G.T.R. from the National Steel Car Corporation will be numbered 15,816. It was described and illustrated in Canadian Railway and Marine World for February, pg. 49.

Hearing re Air Brakes for Self Propelled Cars.

Canadian Railway and Marine World for March contained a brief account of a hearing by the Board of Railway Commissioners on Feb. 7, at which railways were required to show cause why self-propelled cars should not be equipped with air brakes. At the hearing, C. E. Brooks, Chief of Motive Power, Canadian National Rys., in his evidence to show that hand brakes are safe and satisfactory on the smaller cars, said: "We know that, travelling at 30 m.p.h. under normal track conditions, we can stop, and have stopped, these cars in anywhere from 325 to 600 ft. We know there are cases where these cars have been tested on a descent of 1½%, the car weighing 20,000 lb. and with approximately 8,000 to 10,000 lb. weight of passengers, and the car has been stopped in between 600 and 700 ft., when the initial application was made at 30 m.p.h. We

feel that under ordinary maximum speed conditions, we can expect, even under unusual rail conditions, to stop within 600 ft., or in approximately 25 seconds."

A. L. Currie, Superintendent, Quebec, Montreal & Southern Ry., which has been operating a Ledoux, Jennings gasoline car, said: "The Q. M. & S. objects to an order requiring air brakes, especially for cars weighing less than 35,000 lbs., and less than 37 ft. long, for the following reasons: 1. Cost of car would be increased by approximately \$1,100. 2. Weight would be increased by 1,000 to 1,200 lb., or over 5%, and thus increase gasoline consumption and cost of operation. 3. It would require drivers with knowledge of air brakes and appurtenances, who would have to be paid higher. 4. Additional car failures would be caused by additional strain put on drive shaft and electric starter. 5. While automobile engine has been developed until it is now reasonably free from failure, introduction of air compressing apparatus would complicate it and introduce causes of failure. 6. The great need of these small cars is to furnish service on branch lines, where experts cannot be provided, except at needless expense, to look after air equipment. 7. Cars being terminused away from repair shops, any air brake defect would cause great expense and delay. 8. Power of car would be detracted from and repairs to driving gear would be difficult. 9. It would be difficult to maintain adjustment of air brakes so as to maintain proper braking power. 10. Maintenance costs would be greatly increased. 11. In general, the use of air brakes would inject into the operation an appliance difficult to maintain in proper shape, and expensive as to operation and maintenance. 12. Even if air brakes were installed, hand brakes would still be necessary. 13. The driver of the present Q. M. & S. car, not equipped with air brakes, states he would just as soon have hand brakes. 14. The hand brakes will stop the car more effectively than air brakes. The power from the hand brakes goes on gradually and is not so apt as the air brakes to skid the wheels and so lessen the braking power. 15. The hand brake is positive in action, whereas something might occur to the mechanism of an air brake which would render it inoperative when required. 16. From tests made, it is felt that with hand brakes, the car may be stopped more quickly than with air brakes.

W. A. Newman, Mechanical Engineer, C.P.R., in speaking of the Ledoux, Jennings gasoline car the C.P.R. is operating on its Lasalle Loop Subdivision, said: "We have made a number of tests with the hand brake . . . it was snowing on both days and the weather was cold. Sand was used at all stops. The tests on the level were taken at a maximum speed, 36 m.p.h. We stopped in 397 ft., or 13 sec. from the time the signal was given. At 7 m.p.h. we had two tests; in one we stopped in 23 ft. and in the other 19 ft., the time being 2½ and 3 sec. I have one test classified as an ordinary stop running at 35 m.p.h.; we stopped in 13 sec. in 468 ft. We had an emergency stop going at 36 m.p.h. and stopped in 9 sec. in 359 ft. We demonstrated to our own satisfaction that with our hand brakes we are accomplishing everything that can be accomplished with an air brake."

From the evidence quoted above it appears that the hand brake is a satis-

factory device for the lighter self propelled cars. Canadian National Rys. cars not equipped with air brake are nos. 15,810; 15,811; 15,812, and 15,813, all of which are of light construction.

Railway Machinery Orders.

The Canadian National Rys. have given the following orders recently for Western Lines locomotive and car shops:—1 Bertram 26 in. b.g. crank shaper, m. 38 complete; 1 Bertram 26 in. back geared crank shaper; 1 electro and impact recorder; 1 Savage impact register; 1 Variety rip and cross cut saw; 1 band saw, 36 x 2 in. wheel; 1 single cylinder surface planer, cap. 30 x 10, with all attachments; 2 C.P. angle wood boring machines; 1 3/2 Berwick rivet heating electric furnace; 1 Yale & Towne model 20, electric chain block; 1 C.P. angle wood boring machine; 1 no. 2 Little David motor hoist; 1 no. 304 B. Oster pipe threading machine, with motor; 1 C.M.C. 20 x 10 quick change gear d.b. gear engine lathe; 1 safety cylinder, 24 in., complete with carbon steel knives; 1 New Williams 14 ft. geared sensitive feed drill, complete; 1 24 in. Ingersoll milling cutting grinder, complete with attachments and motor; 1 25 in. Bertram h.d. vertical drilling machine, complete; 1 no. 19 perfect round base, col. type, 18 in. sensitive drill, complete; 1 Rapid H.S. metal saw, cap. up to 6 x 6; 1 Rae 18 x 8 engine lathe, d.b. geared, i.c. gear, complete with 4 jaw ind. chuck; 1 Bertram 36 in. heavy vertical drilling machine complete; 1 Bertram 25 in. heavy vertical drilling machine complete; 1 Lincoln 200 amp. portable welding machine; 1 Springfield bench straightening press; 1 set attachments Warner & Swasey turret lathe; 1 C.M.C. 20 x 12 quick change gear engine lathe, complete; 1 Bertram 26 in. back geared crank shaper complete; 1 Bertram 36 in. heavy vertical drilling machine, complete; 1 Bertram 25 in. heavy vertical drilling machine, complete; 1 no. 10 Racine Imp. H.S. metal cutting machine; 1 20 in. x 8 ft. lathe, C.M.C., complete with 18-4 jaw ind. chuck and motor; 1 C.M.C. 16 in. x 8 ft. lathe, complete with 3 h.p. motor; 1 20 C.B. & F. back geared power drill, complete with attachments and motors; 1 Ryerson combined shear and hot punching machine, complete with motor; 1 standard car wheel boring tool, no. 12, 3 3/4 to 5 1/4 in.; 1 heavy duty planer, model C.X., complete with attachments and motor; 1 1 in. Niagara oil meter, complete; 1 Mumford 12 in. cylinder, jolt squeezing, split pattern machine, equipped for 14 x 16 in.; 1 Simpson bucket loader for no. 2 mixer; 1 rail handling electric magnet, complete; 1 Marshalltown supertine shear, no. 18, hand power; 1 combined lever punch and slitting shear, no. 73 B. & B.; 1 no. 2 C. Mitts & Merrill chopping hog, complete; 1 Ingersoll-Rand F.L. 2 air compressor, complete; 1 no. 59 stock and dies, 1/4 to 1 1/2; 1 set taps, 1/4 to 1 1/4; 1 Southwark 100-ton triple power type spring banding press, complete; 1 Bertram 26 in. back geared crank shaper, no. 38, complete; 1 no. 4 T.L. Dexter globe valve reseating machine, complete 1/4 to 4 in.; 1 104 Reed machine vise, 4 to 6 in.; 1 no. 59 complete set W.S.S. std. stocks and dies, 1/4 to 1 1/4; 3 sets Armstrong stock and dies; 1 18 x 8 ft. lathe, 18 in. or more swing, complete with 4 jaw ind. chuck; 1 Ashton wheel press recording gauge, 200-ton on 9 in. ram; 10 Ellison combined diff. draft gauges, 0 to 1 1/2; 1 2 in. Worthington tube boiler feed meter, complete; 2 C.P.

angle wood boring machines; 1 Yale & Towne model 20 imp. electric chain hoist; 1 C.F.M., 12 x 7 x 12 full brass fitted washout pump; 1 Bertram 26 in. back geared crank shaper, M. 38; 1 Lancashire size J.F. 3.5 h.p. motor; 1 Westinghouse 25 h.p. motor; 1 Lancashire size M.F. 10 h.p. motor; 18 acetylene cutting equipments. A number of jacks, pneumatic tools and Yale & Towne chain blocks were also ordered.

The orders were divided among: John Bertram & Sons Co.; Canada Machinery Corporation; A. R. Williams Machinery Co.; Williams & Wilson; Rudel-Belnap Co.; Alfred Herbert Machinery Co.; Canadian Fairbanks-Morse Co.; Peacock Bros.; Cowan & Co.; The Holden Co.; Canadian Car & Foundry Co.; Canadian Ingersoll-Rand Co.; Independent Pneumatic Tool Co.; Perfect Tool Co.; Lincoln Electric Co.; Northern Electric Co.; Lancashire Dynamo & Motor Co.; Canadian Westinghouse Co.; A. O. Norton Co.; Templeton, Kenley Co.; Canadian Liquid Air Co.

Ticket Thefts from the C.P.R.

Mark Portigal, proprietor of a confectionery store on Higgins Ave., Winnipeg, was arrested Feb. 22, charged with being involved in an organized theft of railway tickets from the C.P.R., and their sale through storekeepers and others. When brought before the Police Magistrate on Feb. 23, a charge of illegally selling tickets was laid against him under the Railway Act, and a second charge of receiving stolen property. He pleaded not guilty, and was remanded for a week, bail of \$1,000 being accepted. On March 1 he was re-arrested, charged with conspiring with A. A. Andrews, and others, names unknown, to steal from the C.P.R. railway tickets or money derived therefrom, and to defraud the company of the tickets. He was remanded until March 6, but was released on finding additional bail for \$1,000 more. On March 2, Philip Greenberg, a Main St. storekeeper, was arrested, being charged with complicity in the above mentioned charges, and specifically mentioning a sale of a ticket from Winnipeg to Toronto. The hearing was postponed, Greenberg being admitted to bail for \$500.

The case against Portigal was gone on with March 6, when the C.P.R. counsel stated that the investigations, which had been under way for some months, showed that a very extensive system of stealing railway tickets was going on, and that agents for the sale of the tickets were scattered all over the west. It was impossible to reach any conclusion as to the amount of money lost to the company. Evidence was given showing that Portigal had no authority to sell tickets; that detectives had, after tracing the illegal sale of tickets to him, bought tickets at less than the regular fares from him. A. A. Andrews, a sleeping car porter, who was given the court's protection, stated that, under an arrangement with him, he held tickets he collected, gave them to Portigal, receiving therefor 25% of their value, and on their sale a further percentage. Portigal was remanded until the following day. When the case was called on March 7, the C.P.R. counsel told the court that witnesses who had given evidence had been threatened with violence by relatives of the accused person, or others interested, and intimated that if it was continued, the Crown would be asked to interfere. Portigal was then committed for trial at the next assizes

on two charges of conspiracy, and two of receiving stolen goods, and was admitted to bail for \$3,000. The charge of illegally selling tickets entered under the provisions of the Railway Act, was held over pending enquiry as to the court's competency to hear it.

A Winnipeg press dispatch of March 25 said that Portigal was tried before Mr. Justice Galt at the assizes there, found guilty on two counts of the indictment, and sentenced to three years imprisonment.

Traffic Orders by Board of Railway Commissioners.

Rates On Newsprint Paper from Fort Frances.

33,407, March 3.—Re application of Minnesota & Ontario Paper Co., International Falls, Minn., for an order declaring that the rates on newsprint paper from Fort Frances, Ont., to stations in Western Canada, in Northern Pacific Tariff, C.R.C. no. 541, effective Jan. 9, 1922, should have been effective Dec. 1, 1921, under the provisions of general order 350; and for a direction to the Northern Pacific Ry. to make reparation on shipments between the said dates: Upon hearing the application at Winnipeg, Oct. 2, 1922, the applicant, the Northern Pacific and the Canadian Pacific Rys. being represented, and what was alleged; and upon the Chief Traffic Officer's report and recommendation, the Board declares that the rates published in the said tariff, should have been made effective Dec. 1, 1921, under the provisions of general order 350, and the Board orders that the Northern Pacific Ry. and other interested railway companies be authorized to make refund on shipments made between Dec. 1, 1921, and Jan. 9, 1922, of the difference between the freight charges based on the higher rates assessed and the rates which were published to become effective Jan. 9, 1922.

Amendment to Milling in Transit Arrangement.

33,413, March 6.—Re application of Toronto Board of Trade; Cannors Seeds Ltd., Wellington; Squier & Son, Lindsay; H. Coulthorp & Son, Port Hope, and Hume & Son, Port Hope, Ontario, for an order suspending Supplement 12 to the Canadian National Ry. Co.'s (Grand Trunk) Tariff, C.R.C. no. E-4411, which provides for an amendment confining the milling in transit arrangement, to apply on shipments of wheat, oats, barley, rye, corn and buckwheat: Upon reading the submissions filed in support of the applications, and on behalf of the railway company, the Board orders that the said supplement be suspended as from March 2, 1923, with leave to the railway company to make formal application to the Board to cancel the milling in transit arrangement on peas.

Claims For Express Goods Lost or Damaged at Flag Stations.

33,471, March 23.—Re complaint of P. Burns & Co., Prince Albert, Sask., against Canadian National Express Co., with respect to claims for goods lost or damaged at flag stations: Upon hearing the complaint at Calgary, Alta., Sept. 28, 1922, the complainant, the Canadian National Express Co., the Dominion Express Co. and the Canadian Pacific and Canadian National Railways being represented, and what was alleged; and upon the report and recommendation of its Chief Traffic Officer, the Board orders that the complaint be dismissed.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Steamship Lines Ltd.—A. A. AULD, heretofore Superintendent, Northern Navigation Co., Sarnia, Ont., has been appointed Manager, New Ontario Dock, C. S. L. Ltd., Sault Ste. Marie, Ont.

Canadian Government Merchant Marine.—R. T. ARMSTRONG, heretofore in Customs and Immigration Department, C.G.M.M., Montreal, has been appointed Travelling Agent. Headquarters, Montreal.

W. A. CUNNINGHAM, heretofore General Freight Agent, has been appointed Traffic Manager. Office, Montreal.

A. DAVIDSON has been appointed Assistant Freight Agent at Vancouver, B.C.

C. W. TOURTELLOTTE, heretofore chief clerk to General Agent, Vancouver, B.C., has been appointed Assistant to Pacific Coast Manager, Vancouver, B.C.

Canadian National Rys.—JOHN CARROLL, heretofore dock agent, Seattle, Wash., is reported to have been appointed dock agent, Victoria, B.C., vice James McArthur, transferred to Vancouver, B.C.

J. J. CROWE, heretofore Signal Supervisor, Edmonton, Alta., has been appointed Signal Supervisor, Saskatoon, Sask., vice R. C. Gardiner, transferred to Edmonton, Alta.

R. C. GARDINER, heretofore Signal Supervisor, Saskatoon, Sask., has been appointed Signal Supervisor, Edmonton, Alta., vice J. J. Crowe, transferred to Saskatoon, Sask.

C. E. HERBERT, heretofore Assistant Foreman, tender shop, has been appointed Assistant Foreman, erecting shop, St. Malo, Que., vice J. D. Ouellette, who has been transferred to machinist there.

C. H. KNOWLES, heretofore machinist, has been appointed Assistant Foreman, tender shop, St. Malo, Que., vice C. E. Herbert, transferred to erecting shop.

C. A. LONG, heretofore Assistant Foreman, erecting shop, has been appointed Assistant Foreman, machine shop, Moncton, N.B., vice F. G. Williams, transferred to draftsman.

J. S. McADAM, heretofore acting Trainmaster, Ottawa Division, Eastern Lines, G.T.R., Ottawa, Ont., has been appointed Trainmaster, Ottawa Division, Montreal District, Central Region, C.N.R. Office, Ottawa.

JAMES McARTHUR, heretofore dock agent, C.N.R. and Grand Trunk Pacific Coast Steamship Co., Victoria, B.C., is reported to have been appointed dock manager, C.N.R., Vancouver, B.C.

W. E. WEEGAR, heretofore acting Superintendent, Barrie Division, Ontario Lines, G.T.R., Allandale, Ont., has been appointed Superintendent, Barrie Division, Southwestern District, Central Region, C.N.R. P. J. Lynch, Superintendent, Barrie Division, Ontario Lines, G.T.R., died recently. Office, Allandale, Ont.

Other appointments made in connection with the co-ordination of the Canadian National Rys., consequent on the amalgamation of the G.T.R., are given on an earlier page of this issue, under "Completing the Canadian National Rys. Co-ordination."

Canadian Pacific Ry.—F. W. ALEXANDER, heretofore District Engineer, Alberta District, Calgary, has been appointed District Engineer, British Columbia District, vice H. Rindal, transferred to Calgary, Alta. Office, Vancouver.

W. G. ANNABLE, heretofore Assistant Passenger Traffic Manager, Ocean Traffic, has been appointed Assistant Steamship Passenger Manager. Office, Montreal.

WM. BALLANTYNE, heretofore General Passenger Agent, Ocean Traffic, has been appointed Steamship General Passenger Agent. Office, Montreal.

J. DONALDSON, heretofore Night Locomotive Foreman, Field, B.C., has been appointed Night Locomotive Foreman, Revelstoke, B.C., vice W. H. Moles, appointed Locomotive Foreman, Weyburn, Sask.

S. P. FRASER has been appointed Locomotive Foreman, North Bend, B.C., vice A. E. Bennets, deceased.

W. H. LEE, heretofore Locomotive Foreman, Weyburn, Sask., has been appointed Night Locomotive Foreman, Field, B.C., vice J. Donaldson, transferred to Revelstoke, B.C.

H. M. MacCALLUM, heretofore Assistant General Passenger Agent, Ocean Traffic, has been appointed Assistant Steamship General Passenger Agent. Office, Montreal.

WALTER MAUGHAN, heretofore Assistant to General Passenger Traffic Manager, Montreal, has been appointed Steamship Passenger Manager. Office, Montreal.

W. H. MOLES, heretofore Night Locomotive Foreman, Revelstoke, B.C., has been appointed Locomotive Foreman, Weyburn, Sask., vice W. H. Lee, appointed Night Locomotive Foreman, Field, B.C.

G. F. NICHOLS has been appointed District Freight Agent, C.P.R., Minneapolis, St. Paul & Sault Ste. Marie Ry., Duluth, South Shore & Atlantic Ry. and Spokane International Ry. Office, 1025 W.O.W. Building, Omaha, Neb.

H. RINDAL, heretofore District Engineer, British Columbia District, Vancouver, B.C., has been appointed District Engineer, Alberta District, vice F. W. Alexander, transferred to Vancouver. Office, Calgary, Alta.

E. STONE, heretofore on special work, General Passenger Agent's office, Montreal, has been appointed Assistant to Steamship General Passenger Agent. Office, Montreal.

Delaware & Hudson Co.—F. P. GUTELIUS, heretofore Vice President, Operating and Traffic Departments, Albany, N.Y., and formerly General Manager, Canadian Government Rys., Moncton, N.B., has been appointed Resident Vice President, D. & H. Co., Montreal, vice C. S. Sims, resigned.

J. T. LOREE, heretofore General Manager, Operating Department, has been appointed Vice President and General Manager, in charge of Operating and Traffic Departments. Office, Albany, N.Y.

Northern Navigation Co.—J. E. ADAMS, heretofore chief steward, s.s. Hamonic, has been appointed Chief Commissary, vice J. H. Morrison, promoted. Office, Sarnia, Ont.

J. H. MORRISON, heretofore Chief Commissary, has been appointed Superintendent, vice A. A. Auld, resigned, to enter Canada Steamship Lines service. Office, Sarnia, Ont.

Northern Pacific Ry.—W. H. JAYNES, formerly chief clerk to Assistant General Freight Agent, Portland, Ore., who was appointed Assistant General Agent, Vancouver, B.C., Jan. 15, has been appointed General Agent, Freight Department, there, vice H. Swinford, who retired March 31.

C.P.R. Trans-Canada Train.—We are officially advised that the C.P.R.'s trans-continental passenger train, the Trans-Canada, which will resume operation on May 20, will have its running time cut by one hour in each direction. Westbound, the train will start in two parts, one from Montreal and the other from Toronto, and are consolidated at Sudbury, Ont., for further westbound movement. Eastbound, the train starting from Vancouver will be split at Sudbury, one part proceeding to Montreal and the other to Toronto. The Montreal leaving time will be 5 p.m. and Toronto 9 p.m., as formerly, but the arriving time at Vancouver will be 9 on the fourth morning, instead of 10. Eastbound, the leaving time at Vancouver will be 4 p.m. instead of 3 p.m., with the arriving times at Toronto and Montreal the same as formerly, viz., 9 a.m. and 2 p.m., respectively. It is possible that an additional 20 minutes will be taken off the time of the eastbound train to Toronto, to meet an operating condition, making the arriving time 8.40 a.m. instead of 9 a.m.

Caraquet Railway Purchase.—The following questions were asked in the House of Commons recently by W. F. Garland, Carleton, Ont., the answers being given by the acting Minister of Railways, Mr. Graham:—Q. "What price was paid for the Caraquet Railway?" A. "\$200,000, and the cancellation of indebtedness of the Caraquet & Gulf Shore Ry. to the Canadian Government Rys., amounting to \$96,399.60." Q. "Who were the shareholders of the company at the time of the purchase, and what were their respective interests?" A. "The Government bought the physical property, not the stock, though 24,444 shares of the par value of \$50 each, in the names of E. B. Stockdale and C. S. Hamilton, in trust, and by them endorsed in blank, were, together with certain debentures, turned over to the Government, Jan. 13, 1921, by the Trusts and Guarantee Co., Toronto, trustees for bondholders, as security for an advance of \$175,000 on purchase price, pending settlement of differences regarding title."

Canadian National Railways Hotels.—The House of Commons passed a motion, by G. G. Coote, Macleod, Alta., recently, for a return showing: How many hotels are owned by the Canadian National Rys.? What was the cost of construction of each of them? What is the present value of equipment of each? How much fire insurance is carried on each hotel and equipment, and in what companies? Are all these hotels being operated by the railways? What was the revenue of each of these hotels in each of the last three fiscal years? What was the expenditure in connection with each of these hotels in each of the last three fiscal years? In regard to each of these hotels operated by the railways, in each of the last three fiscal years, what was the net profit or loss in connection with the operation, including all charges such as insurance, interest on investment, and allowance for depreciation on building and equipment?

Mainly About Railway People Throughout Canada.

James Coleman, who has been appointed General Superintendent, Car Equipment, Central Region, Canadian National Rys., Toronto, was born at Port Huron, Mich., and started work with the G.T.R. as a car department apprentice in 1873. He worked at Port Huron until 1889, when he was appointed foreman at Chicago, remaining in that position until 1899, when he was appointed Master Car Builder, Central Vermont Ry., at St. Albans, Vt. In 1905 he entered the Canada Car Co.'s service at Montreal, taking charge of the manufacturing department, and in 1906 returned to his former position with the Central Vermont Ry. From Jan. 1908 to May 1, 1920, he was Superintendent, Car Department, G.T.R., Montreal; May 1, 1920, to Feb. 28, 1923, Assistant to General Superintendent of Motive Power and Car Departments, G.T.R., Montreal. He is chairman of the American Railway Association, Mechanical Division.

W. S. Cookson, who has been appointed Manager, Tariff and Ticket Bureau, Canadian National Rys., Montreal, was born at Port Jervis, Orange County, N.Y., June 12, 1871, and entered railway service July 15, 1886, since when he has been, to Nov. 1, 1886, clerk in Car Record Office, Erie Rd., Jersey City; Nov. 1, 1886, to Dec. 1, 1899, clerk in General Roadmaster's office, Chicago & Western Indiana Rd., Chicago, Ill. (the G.T.R. is part owner of this railway); Dec. 1, 1899, to May 1, 1909, chief clerk, Assistant General Passenger Agent's office, G.T.R., Chicago, Ill.; May 1, 1909, to June 1, 1910, Assistant General Passenger Agent, G.T.R., Chicago, Ill.; June 1, 1910, to Nov. 13, 1915, Assistant General Passenger Agent, G.T.R., Montreal; Nov. 13, 1915, to March 9, 1923, General Passenger Agent, G.T.R., Montreal.

Arthur Crumpton, Valuation Engineer, Central Region, Canadian National Rys., addressed the Engineering Institute of Canada's Toronto branch, on March 8, on the federal valuation of United States railways.

W. R. Devenish, General Superintendent, Northern Ontario District, Canadian National Rys., left Toronto, March 22, for a fortnight's holiday, owing to slight illness.

W. E. Duperow, who has been appointed Passenger Traffic Manager, Central Region, Canadian National Rys., except lines west of St. Clair and Detroit Rivers, Toronto, was born at Stratford, Ont., Sept. 4, 1872, and entered transportation service Nov. 3, 1893, since when he has been, to Oct. 15, 1894, in G.T.R. service at Seaforth, Ont.; Oct. 15, 1894, to June 1, 1896, ticket clerk, G.T.R., London, Ont.; June 1, 1896, to July 11, 1898, ticket clerk, G.T.R., Toronto; July 11, 1898, to Aug. 1, 1899, theatrical and excursion clerk, General Passenger Agent's office, G.T.R., Toronto; Aug. 1, 1899, to April 19, 1902, chief clerk, same office; April 19, 1902, to Feb. 15, 1907, General Manager, Secretary and Treasurer, Huntsville, Lake of Bays and Lake Simcoe Navigation Co., Huntsville, Ont.; Feb. 15, 1907, to June 1, 1910, Travelling Passenger Agent, G.T.R., Toronto; June 1, 1910, to April 15, 1912, City Passenger and Ticket Agent, G.T.R., and Grand Trunk Pacific Ry., Victoria, B.C.; Apr. 15, 1912, to Mar. 1, 1914, General Agent, Passenger Department, G.T.R., G.T.P.R., and Grand

Trunk Pacific Coast Steamship Co., Vancouver, B.C.; Mar. 1, 1914, to Sept. 1, 1917, Assistant General Passenger Agent G.T.P.R., Winnipeg; Sept. 1, 1917, to March 9, 1923, Assistant General Passenger Agent, Canadian National Rys., Winnipeg.

R. L. Fairbairn, who has been appointed Manager, Passenger Service Bureau, Canadian National Rys., Montreal, was born at Stillwater, Minn., Nov. 24, 1880, his parentage being Canadian. He entered railway service in July 1899, since when he has been, to Mar. 1904, in office of Auditor of Passenger Receipts, G.N.R.; Mar. 1904 to May 1, 1906, in Passenger Traffic Manager's office, same road; May 1 to Dec. 1, 1906, assistant rate clerk, Passenger Department, same road; Dec. 1, 1906, to June 1, 1908, chief rate clerk, Passenger Department, same road; June 15, 1908, to Oct. 1910, chief clerk, Passenger Department, Canadian Northern Ry., Winnipeg; Oct. 1910 to Apr. 1911, District Passenger Agent, C.N.R., Saskatoon, Sask.; Apr. 1911 to May 1912, Assistant General Passenger Agent, lines east of Port Arthur, C.N.R., Toronto; May 1912 to Oct. 4, 1920, General Passenger Agent, Eastern Lines, Canadian Northern Ry., and latterly Canadian National Rys., Toronto; Oct. 4, 1920, to March 9, 1923, Assistant Passenger Traffic Manager, Eastern Lines, Canadian National Rys., Toronto.

F. B. Goedike, who has been appointed Engineer, York Tp., Ont., is a graduate of Queen's University, and, prior to graduation, served as transit man on the construction of the Canadian Northern Ry. Ottawa-Hawkesbury line. He was subsequently engaged on plane table surveys for the C.P.R. irrigation works at Calgary, Alta., and was Assistant Engineer on the construction of 22 miles of main canal for that company. In 1912 he conducted a hydrographic survey of Toronto Bay, for the Toronto Harbor Commissioners. In 1915 he acted as locating and estimating engineer for a commission investigating possible radial railway entrances to Toronto, and later became Assistant Engineer, Toronto Harbor Commission. In 1918 he joined the firm of Barber & Wynne-Roberts, consulting engineers, Toronto, and did designing and other work for the Hydro Electric Power Commission of Ontario, and later carried out some waterworks extensions for Toronto, and at the time of his present appointment was Resident Engineer on tunnel sewer construction for Hamilton, Ont.

Casimir Stanislaus Gzowski, who has been appointed Chief Engineer, Construction Department, Canadian National Rys., Montreal, was born at Toronto, May 1, 1876, and entered transportation service in April, 1897. While attending Toronto University he was engaged during the summers on survey work, in 1897 being with the C.P.R. on survey and construction on its Crowsnest Branch and subsequently in various positions in charge of location and construction work for the C.P.R. and other roads. In 1905 he became a partner in Macdonell, Gzowski & Co., Vancouver, B.C., and later with a branch in Spokane, Wash., under the name of G. O. Foss & Co., as contractors and engineers, building the C.P.R. Nicola Branch, changes of line on C.P.R. at Rogers Pass, near Nelson, B.C., and on the Esquimalt & Nanaimo Rys., Vancouver Island. The firm also built

parts of the Milwaukee extension westward, Great Northern Ry. changes of lines and parts of branches in Canada and the U.S.; C.P.R. spiral tunnels at Field, B.C., and considerable other railway work in Canada and the U.S., until its dissolution in 1914, after which he did valuation work for the Dominion commission of enquiry into railways and also acted as special engineer for the Canadian Northern Ry. on the government arbitration of its stock valuation. From June, 1919, to Sept. 1920, he was Special Engineer to Vice President, Operation, Maintenance and Construction, Canadian National Rys., Toronto; Sept. 1920 to Feb. 19, 1923, Assistant to Vice President of Construction, Canadian National Rys., Toronto.

D. B. Hanna, ex-President, and A. J. Mitchell, ex-Vice President, Finance and Accounting, Canadian National Rys., expect to leave Toronto, about the middle of April, to spend several weeks in Great Britain.

H. T. Hazen, who has been appointed Assistant Chief Engineer, Central Region, Canadian National Rys., Toronto, was born at Truro, N.S., Mar. 14, 1870, and commenced his railway career on survey work on the Hants Central Ry., Truro, N.S., since when he has been, to 1893, rodman and Resident Engineer on location and construction, Ottawa & Gatineau Ry.; 1893 to 1894, Locating Engineer, Restigouche & Victoria Colonization Ry.; 1894, Locating Engineer, New Brunswick Trunk Line Ry.; 1894 to 1895, on topographical survey of Riviere du Lievre; 1895 to 1896, Resident Engineer, St. Lawrence & Adirondack Ry.; 1896 to 1897, Resident Engineer, Cobourg, Northumberland & Pacific Ry.; 1897 to 1898, Resident Engineer, Montreal & Ottawa short line, C.P.R.; 1898 to 1899, Resident Engineer, C.P.R. double-tracking; 1899, Assistant Engineer, Great Northern Ry. of Canada; 1899 to 1900, Assistant Engineer, Ottawa & Gatineau Ry.; 1900 to 1904, Assistant Engineer, Grand Trunk Ry.; 1904, in charge of exploration surveys, Midway & Vernon Ry.; 1904, Superintendent and Engineer for contractor, Ragged Rapids dam on Severn River; Jan. 1, 1905, to Oct., 1909, with Canadian Northern Ry. as Division Engineer, location Parry Sound to Sudbury, Division Engineer of construction, Parry Sound to French River and Key Branch, and Engineer in charge Garneau to Quebec, St. Jerome-Montfort Branch and St. Jacques Branch; Oct., 1909, he was appointed Chief Engineer, Duluth, Winnipeg & Pacific Ry.; and from July, 1911, to Aug., 1915, also District Engineer, Canadian Northern Ontario Ry.; Aug. 1915, to Oct. 1917, Chief Engineer, Toronto Suburban Ry., Toronto; Oct. 1917 to Oct. 1920, Engineer Maintenance of Way, Eastern Lines, Canadian Northern Ry., Toronto; Oct. 1920 to Feb. 28, 1923, acting Chief Engineer, and latterly Chief Engineer, Eastern Lines, Canadian Northern Ry., Toronto.

Robert Alexander Cecil Henry, who has been appointed Director of the Bureau of Economics, Canadian National Rys., Montreal, was born there Sept. 20, 1884, and graduated from McGill University with the degrees of B.A. and B.Sc. He has been, from June 1905 to Oct. 1906, chairman, rodman and leveller, C.P.R.; Apr. 1907 to Oct. 1908, Assistant Engineer, C.P.R.; June to Dec. 1909,

Assistant Engineer of Water Power Investigation, Interior Department, Ottawa; Dec. 1909 to Sept. 1910, private work; May to Nov. 1911, Superintendent of Concrete Construction, Jago & Co., Montreal; May 1912 to Dec. 1913, Inspecting Engineer, Railways and Canals Department, at North Bay and Ottawa, Ont.; Dec. 1913 to March 1920, Assistant Engineer, Railways and Canals Department; March 1920 to June 1922, engineer in charge of G.T.R. arbitration, for Railways and Canals Department; June 1922 to March 1, 1923, Special Engineer, Railways and Canals Department.

Cecil Wray Johnston, who has been appointed Passenger Traffic Manager, Canadian National Rys., Montreal, was born at Actonvale, Que., July 27, 1879, and entered G.T.R. service Sept. 1, 1897, since when he has been, to Mar. 8, 1900, operator and agent at Richmond, Que.; Berlin, Ont.; Island Pond, Vt., and Sherbrooke, Que., consecutively; Mar. 9, 1900, to June 21, 1901, clerk to Auditor of Freight Accounts, Montreal; June 22, 1901, to June 25, 1902, ticket clerk, Montreal; June 26, 1902, to Dec. 31, 1904, Travelling Passenger Agent, Montreal; Jan. 1, 1905, to Feb. 15, 1907, excursion clerk, General Passenger Agent's office, Montreal; Feb. 16, 1907, to May 10, 1909, Travelling Passenger Agent, Montreal; May 11, 1909, to Jan. 31, 1912, chief clerk, General Passenger Agent's office, Grand Trunk Pacific Ry., Winnipeg; Feb. 1, 1912, to May 25, 1913, chief clerk, Assistant Passenger Traffic Manager's office, G.T.R., Montreal; May 26, 1913, to Feb. 15, 1914, chief clerk, Passenger Traffic Manager's office, Montreal; Feb. 15, 1914, to Nov. 13, 1915, Assistant to Passenger Traffic Manager, Montreal; Nov. 13, 1915, to March 5, 1923, Assistant General Passenger Agent, G.T.R., Montreal.

Commissioner Calvin Lawrence, of the Board of Railway Commissioners, Ottawa, formerly of St. Thomas, Ont., and his daughter-in-law, Mrs. Ruby Lawrence, of St. Thomas, have given \$1,000 for the memorial hospital to be built at St. Thomas, the donation to be used to furnish a ward in memory of the Commissioner's son, Clarence Victor, who died overseas, while serving with the Canadian Air Force.

J. G. Rutherford, C.M.G., one of the members of the Board of Railway Commissioners for Canada, who went to the Pacific coast some weeks ago, became so ill that he had to go to a hospital, and he is now with relatives in Vancouver, convalescing. He is not expected back in Ottawa until probably the end of April.

John S. Thomson, of Jersey City, who was at one time junior secretary to the late Sir Joseph Hickson, a former Grand Trunk Ry. General Manager, is a candidate for appointment as United States Minister to China. He was at one time Manager, at Hong Kong, of the Pacific Mail & Toyo Kisen Kaisha Steamship Co.

Sir Henry Thornton, President, Canadian National Rys., had to be away from his office, in Ottawa, for about 10 days prior to March 22, owing to illness. On March 24 he spoke at a dinner in Kingston, Ont., in celebration of the local board of trade's 50th anniversary. He has been elected an American Railway Association director.

W. Walker, chief clerk, C.P.R., Sudbury, Ont., was seriously injured, and his wife lost her life, March 12, in a fire in the building in which their apartment was situated.

Exemption of Government Railways, Etc., from Sales Tax.

Sir Henry Drayton asked in the House of Commons, recently, what, if any, rulings, orders or regulations, had been made or adopted which exempt, or declare to be exempt, from the operations of the sales tax; purchases when made by certain individuals, organizations, or companies, or what, if any, rebates or remissions have been made or authorized to be made in respect of taxes payable under the sales tax?

The Minister of Customs and Excise, Mr. Bureau, in reply, gave particulars of the ruling made on Dec. 2, 1922, exempting certain railways owned by the Government from payment of sales tax, which was published in Canadian Railway and Marine World for March, and also gave particulars of the following remissions authorized by order in council:—

July 27, 1922.—On importations, and sale, or deliveries, of material entering into the construction of the new international bridge for the Michigan Central Ry., to be built at Niagara Falls.

July 27, 1922.—Remission of sales tax on launch being built by Vancouver Shipyards Co., for the Church and Manse Board of the Presbyterian Church in Canada for missionary work.

Sir Henry Drayton brought the matter up a second time and said:—"By a return tabled on Feb. 28, it appears that goods purchased by the Canadian Government Railway Group, 'not for resale,' were, on Dec. 2, 1922, ruled exempt from sales tax on or after May 24, 1922, such railway group comprising in all some 14 different railways. The ruling was retroactive and exempted purchases on or after May 24, 1922. What was the amount of purchases made by said railway group between May 24 and Dec. 2, 1922, in respect of which the ruling was made, and what was the amount of the sales tax payable thereon? What is the estimated amount of revenue lost by the department under this ruling? What was the former practice under which the sales tax was collected on purchases by railways irrespective of ownership changed owing to alleged insufficiency in the statute or on other legal grounds or as a matter of Government policy? If, owing to alleged insufficiency of the statute or other legal grounds, is it the Government's intention to bring down further and remedial legislation?"

The Minister of Customs, Mr. Bureau, replied:—"I should like to be allowed to answer the hon. gentleman by informing him that since the reorganization of the Canadian National Rys., sales tax is being collected from, or paid by, all railways. I hope that will satisfy my hon. friend."

In order to obtain more definite information in regard to this matter, Canadian Railway and Marine World communicated with the Customs and Excise Department, and has received a reply, which reads in part as follows:—"On account of the changed status of the Canadian Government railway group, which took place on Jan. 20 last, the Department has ruled that, with effect from that date, the exemption enjoyed prior to that date by certain lines of the Canadian National Rys. would become non-effective, and that goods purchased by the Canadian National Rys. for all lines are taxable. This ruling does not alter the exemption in respect of goods purchased by the Timiskaming & North-

ern Ontario Ry. and the Hydro Electric Power Commission of Ontario, when such goods are for their own use."

It would appear from the above that the Minister was misinformed when he said that the "sales tax is being collected from, or paid by, all railways."

National Defence Department's Railway Committee.—Authority has been granted for the formation of a railway committee, to advise the Minister on all matters concerning the operation of railways and their subsidiary services, so far as pertains to the requirements of the Canadian naval, military and air forces, and on such other matters concerning the defence of Canada, in which the operation of railways may be involved in peace and in war. The committee will be composed of the Quartermaster General, and the Director of Supplies & Transport, National Defence Department; a Railways & Canals Department representative, a Canadian National Rys. representative, and a C.P.R. representative. The Quartermaster General will be chairman of the committee and the Director of Supplies & Transport will act as secretary.

The American Society of Mechanical Engineers will hold its spring meeting in Montreal, the railway session being fixed for May 29. H. R. Naylor, Assistant Works Manager, Angus Shops, C.P.R., Montreal, will read a paper on construction of steel frame box cars by the jig method, which will describe the methods employed at Angus shops, and detail the jig plan of car construction, which is a definite step forward in car building. C. E. Brooks, Chief of Motive Power, Canadian National Rys., will read a paper on railway motor cars, giving experience with, and qualifications of, various designs of these cars, of which the C.N.R. has a considerable number.

G.T.R. Arbitration Counsel.—The Minister of Justice stated in the House of Commons recently, in answer to A. J. Benoit, St. John's and Iberville, Que., that the minister who engaged the various counsel in connection with the G.T.R. arbitration during 1919, 1920 and 1921, was the Right Hon. C. J. Doherty, then Minister of Justice, who was then, and still is, receiving an annual statutory pension of \$4,666.66, as a superannuated judge of the Quebec Superior Court.

Canadian National Rys.' Hotels for Maritime Provinces.—Senator McDonald, Shediac, N.B., moved in the Senate recently for the appointment of a special committee to enquire into and report upon the extension of the C.N.R. hotel system throughout Canada, and especially in New Brunswick, Nova Scotia and Prince Edward Island. After a brief discussion, in which Senator J. D. Reid, formerly Minister of Railways, took part, the motion was withdrawn.

Fidelity Insurance, Canadian National Rys.—Acting Minister of Railways Graham stated in the House of Commons recently, in answer to D. M. Kennedy, Edmonton West, Alta., that the London Guarantee & Accident Co., the Guarantee Company of North America, and Lloyd's, London, carry the C.N.R. fidelity insurance, the approximate amount of the schedule being \$10,000,000, and the annual cost of premium approximately \$16,000.

Loop Tunnel Relining.—The C.P.R. has given a contract, for renewing the timber lining of the loop tunnel, at mile 4.8, Fernie Subdivision, B.C., to Nickson Construction Co., Vancouver.

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The Misuse of the Name Mogul.

Toronto daily newspapers stated recently that when the C.P.R. express train from Vancouver was approaching Bolton, Ont., on the day previous, en route to Toronto, and travelling about 35 miles an hour, the steel tire of one of the locomotive driving wheels splintered, that the locomotive man's attention was drawn to it by a loud, rasping noise, and that he was slowing down, when the "big mogul" suddenly left the rails, but by applying the emergency brakes speedily, he succeeded in preventing the cars from being derailed. It was also stated that an examination of the damaged tire showed that it had splintered in many places, there not being 2 ft. of the entire tire left intact. The same matter was sent from Toronto as a press dispatch, and published in a number of other daily newspapers.

Canadian Railway and Marine World is not calling attention to the report referred to primarily because it is inaccurate, for the reason that when a railway sees in an average daily newspaper an account of some railway occurrence, he naturally expects it to be characterized by inaccuracy more than anything else. The inaccuracy in this particular case lies in the fact that it was not a driving wheel tire which splintered, but a tender truck wheel tire, and also in the fact that the locomotive was not derailed, the only derailment taking place being that of the pair of tender truck wheels which included the wheel with the broken tire, those wheels dropping alongside the rails when the train was about stopped.

However, the thing to which we desire to call attention particularly is the use of the word "mogul" to describe a locomotive. It seems that newspaper reporters, moving picture producers and a large proportion of the general public cannot mention a locomotive without referring to it as "a mogul." The locomotive concerned in the slight mishap mentioned above was a Pacific type passenger locomotive. It is indeed a strange thing, when mention of a mogul type locomotive makes a railway man think of some wheezing old-timer, equipped with D valves, using saturated steam, and operating on a logging road away back in the woods, that the general public should continue to entertain the idea that the degree to which locomotive development has been perfected can best be expressed by simply stating in awe-inspiring tones that the heavy trains of to-day are pulled by giant, powerful "moguls."

Unfair Government Discrimination.

T. E. Ross, Simcoe North, Ont., asked in the House of Commons recently:—"1. Is the Great Northwestern Telegraph Co. virtually owned or controlled by the Dominion Government? 2. If so, are all officials of the Government instructed to send and receive, if possible, all messages by this company? 3. If such instructions have not been issued, what is the reason?" The acting Minister of Railways, Mr. Graham, replied to question 1: "Yes," and added, "Although up to the present no general instructions have been issued, the Dominion Government officials are expected, wherever practicable, to make use of the Canadian National Telegraphs for public business."

Mr. Ross then asked the following question:—"Are all Dominion Government officials instructed to send and receive, where possible, all parcels by Canadian National Express, thus swell-

ing the Government's receipts? If not, why?" Mr. Graham replied: "Although, up to the present, no general instructions have been issued, Federal officials are expected, when making shipments by express, to make use of the Canadian National Express, where it is practicable to do so."

Mr. Graham's answer shows that the C.P.R. Telegraphs and Dominion Express Co.'s services are only to be used by Dominion Government officials when it cannot be avoided, and not to any competitive points; in other words, that the C.P.R. Co., which, as President Beatty stated a short time ago, is the largest Canadian taxpayer, is to be discriminated against. This is a striking illustration of the difficulty of securing fair play by the Government, as between a Government-owned public utility and a privately-owned one.

The National Transcontinental Ry. and the Maritime Provinces.

The Moncton Times, in discussing the division of the Canadian National Ry. into regions, complains that the greater part of the National Transcontinental Ry., which, it says, was "supposed to have been built especially to serve maritime interests, is to be administered from Toronto." This is the first time we have ever heard it contended that the National Transcontinental was built especially to serve the maritime provinces. When it was projected, it was certainly argued by Sir Wilfred Laurier that it was to be built in the interest of the whole Dominion. The desire of the late C. M. Hays, then General Manager of the G.T.R., to build another line north of Lake Superior, starting at North Bay, Ont., and ending at the Pacific coast, was, of course, most ill advised and unfortunate, finally resulting in the G.T.R. Co's practical bankruptcy. The proposition was made worse by demands of Quebec politicians to have the line extended eastward to Quebec City, followed by maritime provinces members' demands for a further extension to Moncton, N.B. The late Hon. A. G. Blair, then Minister of Railways, opposed the whole project, and resigned from the Government rather than have anything to do with it. The building of the line from Cochrane to Quebec was a bad enough blunder. Its extension from Quebec to Moncton was a worse one, if not a political crime. As Canadian Railway and Marine World frequently contended, the Intercolonial Ry. should have been double tracked from Montreal to Halifax, and had that been done, many millions would have been saved in the cost of original construction, and many more in annual maintenance and operating charges. The contention that the National Transcontinental was built especially to serve maritime interests, is absurd and will not hold water.

"Heads C.P.R. Steamships."

Some misconception has been caused by announcements in various daily papers, of Walter Maughan's appointment as Steamship Passenger Manager, C.P.R., the majority of which have published matter under the heading, "Heads C.P.R. Steamships," following an expression used, evidently, in error, in information sent out by the company's press bureau. The head of the Canadian Pacific Steamships Ltd., is the Chairman, G. M. Bosworth. The C.P.R. is Traffic Agent for Canadian Pacific Steamships

Ltd., and the steamships' freight and passenger business therefore comes under W. R. MacInnes, Vice President, Traffic Department, the passenger portion being again under C. E. E. Ussher, General Passenger Traffic Manager, who issued the circular announcing Mr. Maughan's appointment, which was approved by Mr. MacInnes. Mr. Maughan's promotion is a well merited one, and his new position a very important one, but it is misleading to say that he "heads C.P.R. steamships."

Legal Appointments, Canadian National Railways.

The St. Jean Baptiste Society's St. Stanislas, Que., section has, according to a press report, passed a resolution protesting that no French-Canadian has been included in the Canadian National Rys.' recent appointments, especially in the Legal Department, which, the resolution maintains, does not need the services of railway experts, and might have been equipped with one or more capable French-Canadian lawyers. The recent appointments in the Legal Department have not been filled by new men, but are really merely transfers, and, as far as Canadian Railway and Marine World is aware, all the positions have been filled by persons theretofore in either Canadian National or Grand Trunk service. It is certainly advisable that appointees to a railway's legal department should have a knowledge of railway law.

A Business Car Boom.

By ordering a business car to be provided, for taking, from Moncton to Montreal and return, the maritime provinces delegates, who are to meet him on April 19 to discuss the Canadian National Rys. Atlantic Region western termini, Sir Henry Thornton has certainly overwhelmed them with courtesy, but he will probably not want it to be considered as a precedent. There will doubtless always be districts which think they have grievances, and more often wants, and their representatives will desire to meet the C.N.R.'s chief executive. If they were all to be conveyed to and fro in business cars, the number of the latter would have to be considerably increased.

Valuable Farm Work by C.P.R.

The C.P.R.'s National Resources Department has added to the many improved services it has rendered farmers, by demonstrating, at Strathmore, Alta., the feasibility of a trench silo system for providing winter fodder for cattle, instead of erecting silo buildings. It is believed that the trench system will materially reduce the cost of cattle raising, and save approximately 20% in production costs of dairy products.

W. N. Tilley's Employment re G.T.R. Arbitration.—The Minister of Justice stated in the House of Commons recently, in answer to A. J. Benoit, St. John's and Iherville, Que., that W. N. Tilley, K.C., was employed by the Dominion Government, in connection with the Grand Trunk arbitration, on or about Dec. 1, 1919, his services in that connection ceasing in July, 1922. It was not specified how many hours a day he devoted to the Government's service, when he was drawing fees amounting to \$100 and \$400 a day, respectively.

The Purchases and Stores Division, American Railway Association, will hold its annual meeting at Hotel Sherman, Chicago, May 15-17.

Southern New England Railway Construction Resumption Proposed.

The Southern New England Railway Co. was incorporated in Massachusetts and Rhode Island, U.S.A., to build a line from Palmer, Mass., on the Central Vermont Ry., to tidewater at Providence, R.I. The stock is controlled by the Central Vermont Ry., which is owned by the G.T.R. Co., now part of the Canadian National Rys. Construction of the line was started in 1910, but was suspended owing to financial and other reasons in 1912. The charter was kept alive, the last extension being to Dec. 31. The Massachusetts and Rhode Island Legislatures are being asked to extend the time for the completion of the line for two years.

J. S. Murdock, Vice President S.N.E. Ry., Providence, R.I., is reported to have said recently in a letter to the Rhode Island Legislature, that the G.T.R. management had definitely decided to proceed with the completion of the extension to Providence. The grading was very nearly completed when work was suspended in 1912.

Canadian National Rys. officials are reported to have had a conference with the New Brunswick Premier on March 22, respecting the extension of the Southern New England Ry., at which it was stated that the object of the construction is to avoid the possible loss of \$12,000,000 already invested, and \$5,000,000 in penalties for non-completion. When completed, the line will be a valuable feeder for the rest of the system. The cost of terminals for export traffic would be very great, but the management does not contemplate making any expenditure thereon.

The question of the extension came up in the Senate at Ottawa on March 22, on a notice of motion covering five questions, by Senator Tanner, Pictou, N.S., who said the matter had received very wide consideration in the maritime provinces. There was a desire to know how far its construction will, or will not, affect the interests of maritime province ports particularly, and Canadian ports generally, and how far, if at all, it will affect Canadian trade passing through Canadian channels. It was a matter of common knowledge that at times a large part of the winter freight, grain particularly, goes to Portland, Me., instead of to St. John, N.B., or Halifax, N.S. Halifax practically receives none of that freight; St. John receives a little, but Portland is the outlet for the largest share. The maritime provinces had reason to complain in regard to railway transportation, export of Canadian produce and the import of goods for Canada. When the National Transcontinental-Grand Trunk Pacific Ry. was under consideration, great stress was laid on the statement that their construction was proposed, not only to develop the inland provinces, but for securing the export trade for Canadian ports. The maritime provinces had waited 20 years for the fulfilment of these promises, but they were still waiting, and were compelled to watch a large proportion of Canadian export trade being carried to Portland. They were very anxious to know if there was any intention of building a railway which will take still more Canadian business into the U.S. for export through U.S. ports.

Senator Dandurand, Government leader, replied that when the National Trans-

continental Ry. was built, he claimed that within 50 years it would be shown that the then government policy was based upon sound principles. The Southern New England Ry. belongs to the G.T.R. System, which expended considerable money upon its construction towards Providence. Steps must be taken to conserve the rights of Canada in that line. The matter had been seriously considered by the Canadian National Rys. directors and the Government. He was not in a position to say what conclusions had been arrived at, but the Senator could be assured that the matter was being looked into with a single eye to the interest and welfare of Canada's finances.

The Vacant Railways and Canals Portfolio.

The following discussion occurred in the House of Commons recently:—

Mr. Meighen, leader of the Opposition: "Will the Prime Minister be good enough to tell us now when we may expect an end of the present makeshift arrangement as to the Department of Railways and Canals?"

Hon. Mr. Graham: "Order."

Mr. Mackenzie King: "The present arrangement is a very good one."

Mr. Meighen: "I think the House has a right to a better answer than that. I used the term 'makeshift' because it was the name the Prime Minister himself applied a few years ago to a similar arrangement. I think the Prime Minister owes it to the House to say what his intentions are as to time in this regard—how long he expects it will be before there will be a regularly constituted minister in charge of this department. The House is in session and the need of a regularly constituted minister is much greater than if the House were not in session."

Mr. Mackenzie King: "I do not think the House has been embarrassed in any way, in view of the arrangement at the present time. My hon. friend will appreciate that, in the matter of filling a cabinet vacancy, the Prime Minister must be allowed sufficient time, if he thinks necessary in the public interest. I do not think it is necessary to fill the vacancy at present."

Mr. Meighen: "I know the Prime Minister must be allowed sufficient time, but all I am asking is, not that he be not allowed the time, but that he advise the House as nearly as he can what time he considers necessary."

Mr. Mackenzie King: "I am not in a position to give my hon. friend a definite answer."

Toronto New Union Station.—Sir Edward Kemp asked in the Senate recently: "When will the new union station in Toronto be used by the Canadian National Rys?" Senator Dandurand replied: "The Canadian National Rys. represent only a partial interest in the station. Before it is opened for service, a number of related questions will require to be considered and decided by all parties interested. It is hoped that negotiations to that end will be shortly inaugurated by the Canadian National Rys.' management."

Hon. W. H. Taft's Fee.—The acting Minister of Railways, Mr. Graham, stated in the House of Commons recently, that Mr. Taft was paid \$75,000, in connection with the arbitration as to the value of G.T.R. securities, the payment being made by G.T.R. shareholders, and not by the G.T.R. company.

Steam Railway Operating Statistics for Year Ended Dec. 31, 1921

Name of Railway	First track mileage	Passenger earnings	Freight and switching earnings	Gross earnings from operations	Maintenance of way and structures	Maintenance of equipment	Traffic and transportation expenses, etc.	General expenses	Net operating earnings
Algoma Central & Hudson Bay..	346.20	\$ 115,012	\$ 1,874,493	\$ 2,019,157	\$ 593,765	\$ 341,886	\$ 605,659	\$ 91,318	\$ 47,923
Algoma Eastern	89.45	54,354	459,958	555,055	149,462	89,133	216,907	42,386	57,227
Alberta & Great Waterways.....	113.20	51,115	118,075	175,514	311,966	36,960	105,464	9,635	-253,759
Atlantic, Quebec & Western.....	104.50	53,063	147,434	200,498	98,791	56,642	116,612	24,163	-95,711
Brandon, Sask. & Hudson Bay....	69.45	31,306	51,323	83,709	56,924	16,920	91,923	8,013	-90,072
British Yukon	90.32	49,377	134,185	185,845	49,374	12,156	52,339	23,263	48,710
Canada & Gulf Terminal.....	38.10	39,409	95,195	138,446	25,029	18,540	59,178	8,987	26,710
Canada Southern	380.55	6,862,205	12,820,954	20,310,505	2,138,937	3,800,393	7,353,269	432,526	6,140,147
Canadian Government	4,536.42	10,781,623	29,293,399	40,964,303	10,393,436	10,032,760	24,945,394	511,831	-5,587,268
Canadian Northern	9,717.33	14,170,698	51,408,303	67,403,439	17,917,596	16,555,146	37,947,291	1,972,046	-6,671,832
Canadian Pacific	13,350.40	56,613,313	129,742,629	193,178,868	29,038,641	36,845,032	81,816,128	3,919,859	37,323,449
Central Canada	48.50	17,768	37,928	58,239	88,393	20,607	70,587	4,102	-125,450
Central Vermont	137.19	181,272	316,216	502,352	159,381	35,187	226,855	22,998	58,498
Crowsnest Southern	74.18	15,363	316,307	333,202	112,236	77,002	154,471	13,087	-23,596
Cumberland	32.00	28,852	217,303	249,765	68,707	50,189	97,952	8,606	24,308
Detroit River Tunnel.....	2.72								
Dominion Atlantic	288.36	776,504	1,360,371	2,163,531	411,998	209,209	965,096	88,031	489,195
Eastern British Columbia.....	14.00	3,324	24,594	29,795	21,811	8,149	24,914	3,740	-28,812
Edmonton, Dunvegan & B.C.....	407.08	315,216	709,004	1,115,781	1,012,703	243,917	592,442	39,865	-792,964
Essex Terminal	21.00		168,445	219,689	32,252	40,606	66,195	48,835	31,770
Esquimalt & Nanaimo.....	199.20	374,664	965,133	1,367,482	235,153	183,955	531,958	11,189	405,226
Fredericton & Grand Lake.....	31.10	13,805	161,118	175,354	34,230	8,715	64,050	6,552	61,805
Grand Trunk	8,589.62	20,488,492	54,801,761	76,858,032	12,862,797	17,809,497	37,158,627	2,904,024	5,678,739
Grand Trunk Pacific.....	2,743.09	3,062,398	13,346,129	16,638,677	5,020,065	4,834,838	10,588,771	514,235	-4,029,691
Hereford	53.06	31,677	67,203	99,748	92,913	42,760	119,275	8,771	-163,972
Inverness Ry. & Coal Co.....	60.91								
International Bridge Co.....	1.02								
Kent Northern	29.00	11,995	24,619	36,886	17,435	3,126	16,455	9,576	-9,707
Kettle Valley	357.38	349,350	696,987	1,087,893	596,130	140,178	500,242	21,516	-187,806
Lake Huron & N. Ontario.....									
Maine Central.....	5.10	10,255	6,533	25,788	2,887	6,563	21,370	1,409	-6,442
Manitoba Great Northern.....	91.92	9,990	57,346	67,559	56,380	9,143	71,674	6,715	-76,354
Maritime Coal, Ry. & P. Co.....	16.40	10,678	132,204	143,109	29,203	13,499	55,651	5,843	38,912
Massawippi Valley	35.46	112,053	175,992	290,341	61,621	73,928	208,217	28,277	-81,704
Midland of Manitoba.....	6.40	195,924	330,217	548,670	95,996	94,525	316,351	20,630	-6,177
Montreal & Atlantic.....	184.40	370,853	1,222,198	1,611,221	424,481	320,119	1,052,472	67,003	-252,855
Morrissey, Fernie & Michel.....	10.85	15,283	118,107	133,390	17,538	26,758	57,564	18,283	13,246
Napierville Jct.	28.46	325,679	224,470	552,281	171,166	35,232	232,107	52,333	61,441
Nelson & Fort Sheppard.....	54.84	25,690	55,549	83,714	71,335	13,921	76,085	8,586	-86,213
New Brunswick Coal & Ry.....	59.02	22,536	48,344	75,142	68,976	5,445	31,940	4,592	-35,818
New Westminster Southern.....	3.72		1,592	1,621	1,102	255	674		-411
Ottawa & New York.....	56.90	130,384	229,478	362,412	118,714	68,266	271,595	6,948	-103,100
Pacific Great Eastern.....	360.80	132,926	244,992	383,389	359,404	121,122	285,052	56,186	-368,542
Pere Marquette	199.04	252,476	5,051,646	5,321,033	681,613	439,504	1,899,482	194,534	2,106,198
Quebec Central	295.53	815,366	1,928,636	2,798,840	390,756	395,192	1,316,498	115,507	551,494
Quebec, Montreal & Southern....	190.78	185,244	405,183	594,912	205,635	364,884	350,768	53,228	-379,604
Quebec Oriental	100.00	110,234	214,425	324,660	94,569	59,754	135,666	26,114	8,555
Quebec Ry., Light & Power Co..	28.60	12,953	144,687	158,010	21,594	50,077	91,705	14,537	-19,903
Red Mountain	9.47	1,176	2,944	4,433	7,744	861	11,383	564	-16,119
Roberval-Saguenay	37.00	43,335	456,886	533,405	93,485	56,734	161,061	15,437	206,668
Rutland & Noyan.....	3.39		7,653	7,653	1,759	1,923	3,558	263	148
St. Clair Tunnel.....	2.24								
St. John & Quebec.....	158.11	101,921	205,531	311,010	224,772	37,524	171,846	4,251	-127,434
St. Lawrence & Adirondack.....	46.14	379,318	850,307	1,234,897	191,912	82,623	707,275	11,733	240,353
Sydney & Louisburg.....	77.49	88,958	2,062,783	2,212,879	354,352	1,142,378	586,624	62,053	67,468
Temiscouata	122.18	87,995	337,089	429,301	127,528	64,123	144,129	27,902	65,617
Timiskaming & N. Ontario.....	328.50	1,354,538	2,839,448	4,359,480	966,915	695,299	2,165,283	155,859	317,930
Thousand Islands	6.08	17,602	36,346	58,924	9,276	891	33,567	7,708	7,481
Toronto, Hamilton & Buffalo.....	99.95	693,663	1,923,275	2,677,984	444,028	519,151	1,072,264	112,604	492,326
Van Buren Bridge Co.....	1.07								
Vancouver, Victoria & Eastern..	230.75	244,035	604,953	893,045	374,110	120,593	513,109	31,547	-152,720
Wabash (in Canada).....		329,233	5,273,618	5,647,986	1,059,350	1,113,328	2,638,169	190,285	630,197

[39,771.16|120,531,317|324,560,512|458,008,890| 88,268,355| 97,447,140|219,176,318| 12,059,110| 55,201,773
 -19,774,088

\$35,427,685

In the table given above, the column headed "First track mileage" includes the first track of main line, branches and spur lines, represented by the respective companies' capital stock, the lines of proprietary companies, the lines operated under lease, and the lines operated under contract, but not lines operated under trackage rights, the mileages of which are included in those for the respective owning companies.

There were 28 companies operating under trackage rights over 1,111.54 miles of other companies' tracks, the principal being: Canadian Northern, 163.82 miles; Canadian Pacific, 93.90; Grand Trunk

Pacific, 128.88; Midland Ry. of Manitoba, 69.88; Pere Marquette, 137.93; Vancouver, Victoria & Eastern, 54.95; Wabash, which does not own any line in Canada, 245.40. In addition to the 39,771.16 miles of first track operated, there were 2,628.72 miles of second track, owned by the following companies:

	Miles
Canada Southern	242.53
Canadian Government	118.42
Canadian Northern	29.63
Canadian Pacific	1,446.30
Detroit River Tunnel	2.72
Grand Trunk	723.21
Grand Trunk Pacific	25.97
Montreal & Atlantic	6.50
Quebec Ry., Light & Power Co.	9.50

Sydney & Louisburg	1.00
Timiskaming & N. Ontario	1.70
Toronto, Hamilton & Buffalo	14.07
Vancouver, Victoria & Eastern	7.12

The figures in the column headed "Gross earnings from operation," include passenger and freight earnings, as well as miscellaneous earnings, the latter not being shown separately; the next four columns give the principal operating expenses, classified under their various headings, and the last gives the net earnings or net loss. The figures in the latter column are ascertained by deducting the totals of the four columns referred to, plus certain other figures referred

to below, from the figures in the gross earnings column. These additional figures cover the cost of water transportation, in which four companies are interested to the amount of \$1,710,103, and miscellaneous expenses connected with operation, amounting to \$6,034,416, distributed among 15 different companies. The column headed "Transportation for investment, Cr.," also has to be taken into account in ascertaining the total operating expenses. This affects 13 companies as follows:

Algoma Eastern	\$	63.25
Alberta & Great Waterways.....		36,038.44
Canada Southern		158.06
Canadian Northern	1,607,066.41	
Central Vermont		568.96
Grand Trunk		17,974.09
Grand Trunk Pacific.....		380,477.04
Ottawa & New York.....		22.00
Pacific Great Eastern.....		69,834.33
Pere Marquette		301.29
Temiscouata		450.85
Vancouver, Victoria & Eastern.....		8.96
Wabash		1,276.24

Total \$2,114,239.92

The following companies have either not reported, or are not operating their railways: Inverness Ry. & Coal Co.; Lake Huron & Northern Ontario Ry.

The Detroit River Tunnel, operated by the Michigan Central Rd., which controls the Canada Southern Ry.; the International Bridge, and the St. Clair Tunnel owned by the G.T.R.; and the Van Buren Bridge, are of an international character and are reported on in the following table, together with the Pullman Co.:

	Total Revenue	Total Operating Expenses	Total Operating Revenue
Detroit River Tunnel Co.	\$1,059,874.90		\$1,059,874.90
Int. Bridge Co.	409,509.59	\$144,144.58	265,365.01
Pullman Co.	1,001,077.00	1,026,722.31	25,642.31
St. Clair Tunnel Co.	309,584.88	246,486.47	63,098.41
Van Buren Bridge Co.	15,369.37	2,123.23	13,246.14
Total	\$2,795,415.74	\$1,419,476.59	\$1,401,584.46
			25,645.31
			\$1,375,939.15

Freight Car Locations on Canadian Railways.

The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on March 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Grand Trunk; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo; Wabash, in Canada; Central Vermont, in Canada; Michigan Central, in Canada; Pere Marquette, in Canada, as follows: Number of cars owned, 220,254; home cars on Canadian foreign lines, 20,578; home cars on U.S. lines, 62,492; home cars on home roads, 137,184; Canadian owned foreign cars on home lines, 18,001; U.S. owned foreign cars on home lines, 32,591; total cars on lines, 187,776; per cent. on lines to total owned, 85.2; deficiency on lines to total owned, 32,478; home cars in bad order, 10,545; foreign cars in bad order, 568; total cars in bad order, 11,113; per cent. in bad order, 5.9; privately owned U.S. cars on lines, 2,502; privately owned Canadian cars on lines, 913.

Birthdays of Transportation Men in April.

Many happy returns of the day to:—
F. G. Adams, Assistant General Freight Agent, Canadian National Rys., Winnipeg, born at St. John's, Nfld., April 6, 1878.

W. H. Ardley, ex Comptroller, G.T.R., and Grand Trunk Pacific Ry., Montreal, born at London, Eng., April 24, 1858.

Jas. Black, Freight Claim Agent, C. P. R., Vancouver, B.C., born near Seaford, Ont., April 19, 1858.

C. G. Bowker, General Manager, Central Region, Canadian National Rys., Toronto, born at Medford, N.J., April 21, 1871.

G. C. Briggs, Architect, Western Lines Canadian National Rys., Winnipeg, born at Cockermouth, Eng., April 23, 1886.

Major F. D. Burpee, Manager and Director, Ottawa Electric Ry., and President, Canadian Electric Railway Association, Ottawa, Ont., born there April 25, 1876.

J. R. Caswell, Division Engineer, Sudbury Division, Ontario District, C.P.R., Sudbury, Ont., born at Coldwater, Ont., April 13, 1892.

G. Cobb, Superintendent, Western Division, Reid Newfoundland Co., Bishop's Falls, Nfld., born at Coupar Angus, Scotland, April 21, 1885.

A. V. Collins, Travelling Auditor, Canada Steamship Lines Ltd., Toronto, born at Island Pond, Vt., April 21, 1868.

G. E. Cowie, General Freight Agent, United Kingdom Traffic, Canadian National Rys., London, Eng., born at Iowa City, Iowa, April 30, 1883.

J. P. Doherty, Export Freight Agent, Canadian Government Merchant Marine Ltd., Montreal, born at Portland, Me., April 8, 1889.

L. A. W. Doherty, Freight Traffic Manager, Canada Steamship Lines Ltd., Montreal, born at Toronto, April 10, 1878.

W. A. Duff, Engineer of Standards, Canadian National Rys., Toronto, born at Hamilton, Ont., April 20, 1877.

Lieut.-Col. F. A. Gascoigne, D.S.O., Secretary - Treasurer, Canadian Pacific Steamships Ltd., Montreal, born at Gosport, Hants, Eng., April 2, 1866.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, born at Udwella, Ceylon, April 12, 1875.

V. A. Harshaw, Manager, Fredericton & Grand Lake Coal & Ry. Co., and New Brunswick Coal & Ry., Fredericton, N.B., born at Mono, Ont., April 26, 1865.

L. M. Hatfield, Assistant Marine Superintendent, Canadian Government Merchant Marine Ltd., Montreal, born at Yarmouth, N.S., April 4, 1880.

E. J. Hilliard, Division Freight Agent, Canadian National Rys., Ottawa, Ont., born at Montreal, April 14, 1870.

John Hulbert, Representative, Royal Mail Steam Packet Co., Halifax, N.S., born in London, England, April 2, 1879.

J. H. Johnston, formerly Stores Department, G.T.R., Montreal, now at Barrie, Ont., born at Uxbridge, Ont., April 22, 1866.

A. A. Larocque, President, Sincennes-McNaughton Line Ltd., Montreal, born at Henryville, Que., April 30, 1865.

G. W. Lee, Chairman, Timiskaming & Northern Ontario Ry. Commission, North Bay, Ont., born at Renfrew, Ont., April 15, 1871.

J. A. Macgregor, Manager, Edmonton, Dunvegan & British Columbia Ry., Edmonton, Alta., born at Dufftown, Scotland, April 5, 1873.

G. P. MacLaren, Engineer, Maintenance of Way, Central Region, Canadian

National Rys., Toronto, born at London, Ont., April 4, 1878.

Paul J. Myler, President, Canadian Westinghouse Co. Ltd., Hamilton, Ont., born at Pittsburgh, Pa., April 24, 1869.

J. H. Norton, Assistant General Freight Agent, Eastern Lines, Canadian National Rys., Moncton, N.B., born at Shaftesbury, Eng., April 21, 1884.

G. D. Perry, Vice President and General Manager, Canadian National Telegraphs, Toronto, born at Whitby, Ont., April 19, 1858.

R. A. Pyne, Superintendent of Motive Power and Car Department, Western Lines, C.P.R., Winnipeg, born at Toronto, April 10, 1874.

R. E. Richmond, Assistant City Ticket Agent, Canadian National Rys., Toronto, born at Uxbridge, Ont., April 5, 1888.

Lieut. R. S. Richardson, Superintendent, Canadian National Rys., Fort William, Ont., born at Napanee, Ont., April 9, 1865.

E. W. Smith, Superintendent; Sleeping, Dining and Parlor Cars and Railway Restaurants, Canadian National Rys., Toronto, born at North Bridge, Mass., April 21, 1869.

J. J. Sullivan, Roadmaster, C.P.R., Lauder, Man., born at Fishers, N. Y., April 29, 1866.

G. M. Thomas, Commercial Agent, Canadian National Rys., Windsor, Ont., born at Dundas, Ont., April 21, 1876.

C. H. Towle, Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., born at Enfield, Me., April 13, 1878.

W. Woollatt, Vice President and General Manager, Essex Terminal Ry., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., April 2, 1855.

Railway Earnings.

Canadian National Railways.

Following are total operating revenues, total operating expenses, and net operating revenues or deficits, for the Canadian Northern Ry. System (steam lines only), Grand Trunk Pacific Ry., and Canadian Government Rys., the last including the Intercolonial Ry., Prince Edward Island Ry., and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government:—

	Revenue.	Expenses.	Net.	Decrease.
Jan.	\$9,550,296	\$10,706,673	\$1,156,377	\$1,066,785
Incr'se	\$1,339,895	\$ 273,110		
Decr'se			\$1,066,785	

Approximate gross earnings for February, \$7,758,241, and for three weeks ended March 21, \$5,941,522, against \$7,733,660 for February, and \$6,410,247 for three weeks ended March 21, 1922.

Grand Trunk Railway.

Following are total operating revenues, total operating expenses, and net operating earnings, or deficits, of the whole system, for 1923 and 1922:—

	Revenue.	Expenses.	Net.	Increase.
Jan.	\$8,623,348	\$7,937,775	\$ 685,573	\$ 89,768

Incr'se \$1,283,743 \$1,193,975 \$ 89,768

Approximate gross earnings for February, \$7,924,775, against \$7,171,690 for February, 1922.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross.	Expenses.	Net.	Increase.
Jan.	\$13,148,914	\$12,428,888	\$ 720,026	\$ 236,549

Incr'se \$ 1,810,939 \$ 1,574,390 \$ 236,549

Approximate gross earnings for February, \$10,737,000, and for three weeks ended March 21, \$8,866,000, against \$10,923,000 for January, and \$9,247,000 for three weeks ended March 21, 1922.

Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

33,300. Jan. 19.—Declaring that for the present, Canadian National Rys. crossing north of Lyn station, Ont., is protected to Board's satisfaction, provided gasoline operated cars equipped with hand brakes only shall be operated over crossing at speed not exceeding 10 miles an hour.

33,301. Jan. 18.—Approving agreement between Bell Telephone Co. and Plummer, Aberdeen & Galbraith Rural Telephone Association, Algoma District, Ont.

33,302. Jan. 19.—Approving plan showing standard timber overhead crossing of C.P.R. designed to carry a 15-ton motor truck.

33,303. Jan. 15.—Directing that all switching movements over G.T.R. at Preston, Ont., be flagged.

33,304. Jan. 19.—Extending to May 1, time within which G.T.R. may build siding for Carroll Bros., Sherston, Ont.

33,305. Jan. 22.—Authorizing Ontario Public Highways Department to divert Bath Road, Collins Bay, Ont., across G.T.R.

33,306. Jan. 22.—Dismissing application of residents of St. Telephore, Que., for order directing Glengarry & Stormont Ry. to provide station and 5-car siding at St. Telephore.

33,307. Jan. 16.—Authorizing Canadian National Rys. to build across C.P.R. and across the Mattawin River, near Rowan, Ont.

33,308. Jan. 20.—Ordering C.P.R. to build road diversion and overhead bridge on road allowance, east of Sec. 15, Tp. 9, Range 17, west 3rd Meridian, Sask.

33,309. Jan. 22.—Authorizing Canadian Northern Ry. to make highway crossing over its tracks between Secs. 26 and 27, Tp. 50, Range 9, Vegreville Subdivision, Alta.

33,310. Jan. 22.—Authorizing Richmond Tp., B.C., to make highway over Vancouver & Lulu Island Ry. (B.C. Electric Ry.), at intersection of Secs. 25, 26, 35 and 36, Block N.

33,311. Jan. 19.—Declaring that general order 252, Oct. 26, 1918, prescribed interswitching rates for freight not exceeding 4 miles, which when added to the line carriers' rates to or from the interchange point, fixed the legal maximum joint rates in respect of the traffic covered by the order. This order is given fully on another page of this issue.

33,312. Jan. 24.—Authorizing Canadian Northern Ry. to connect with G.T.R. near Lampman, Sask.

33,313. Jan. 25.—Authorizing C.P.R. to open for traffic, portion of its Langdon North Branch (Acme to Empress), from mile 74.29 to 77.88.

33,314. Jan. 22.—Authorizing Crownstey Southern Ry. to build spur for East Kootenay Power Co., near Elko, B.C.

33,315. Jan. 22.—Approving revised location of connection between Grand Trunk Pacific Ry. and Qu'Appelle, Long Lake & Saskatchewan Ry., near Regina, Sask.

33,316. Jan. 19.—Ordering G.T.R. to build farm crossing for A. Knipfel, Petersburg, Ont.

33,317. Jan. 22.—Declaring that for the present, the second crossing west of Scarboro Jet. station (Kennedy Road), over G.T.R., is protected to Board's satisfaction.

33,318. Jan. 22.—Authorizing Fort William Municipal Ry. to build across Grand Trunk Pacific Ry. on Montreal St., Fort William, Ont.

33,319. Jan. 17.—Approving agreement between Bell Telephone Co. and Bradden Telephone Co., Hastings County, Ont.

33,320. Jan. 25.—Authorizing Canadian Northern Ry. to build spur for Prince Albert Mineral Water Co., Prince Albert, Sask.

33,321. Jan. 25.—Declaring that for the present, the first public crossing south of Sundridge, Ont., over G.T.R., is protected to Board's satisfaction.

33,322. Jan. 25.—Approving agreement between Bell Telephone Co. and People's Mutual Telephone Co., Prince Edward County, Ont.

33,323. Jan. 25.—Authorizing Kettle Valley Ry. to build spur for Summerland Lumber Co., at mile 229.47 on joint section of Kettle Valley Ry. and Vancouver, Victoria & Eastern Ry. & Navigation Co., B.C.

33,324. Jan. 26.—Approving agreement between Bell Telephone Co. and Tay Tp. Municipal Telephone System, Simcoe County, Ont.

33,325. Jan. 25.—Approving G.T.R. plan showing addition to bell at crossing at Maxville, Ont.

33,326. Jan. 26.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to appeal from Board's order 31,647, Oct. 15, 1922, authorizing Vancouver Harbor Commissioners to operate trains over V. V. & E. Ry. tracks at Burrard Inlet, B.C.

33,327. Jan. 26.—Authorizing C.P.R. to connect its siding with Congoleum Co. of Canada's siding on G.T.R., Montreal Parish, Que.

33,328. Jan. 26.—Approving agreement between Bell Telephone Co. and the Canadian Explosives, Ltd., Parry Sound District, Ont.

33,329. Jan. 26.—Authorizing use of bridge carrying public highway on Lot 12, Con. 2, Chaffey Ap., Ont., across G.T.R., near Huntsville, Ont.

33,330. Jan. 26.—Authorizing Canadian Northern Ry. to make road diversion and highway crossing at Dawson Road, mile 34.6, west of Port Arthur, Ont.

33,331. Jan. 27.—Authorizing Alberta Public Works Department to make highway across Edmonton, Dunvegan & British Columbia Ry. in s.w. ¼, Sec. 9, Tp. 78, Range 21, west 5th Meridian, Alta.

33,332. Jan. 27.—Approving Michigan Central Rd. plan showing changes in location of signals 3 and 4 in connection with interlocking plant at east end of M.C.R. yards, at Windsor, Ont.

33,333. Jan. 27.—Amending order 33,199, Dec. 6, 1922, relieving Canadian National Rys. from speed limitation of 10 miles an hour at crossing west of Minard, Sask., by changing order to read east instead of west, of Minard, Sask.

33,334. Jan. 22.—Extending to June 15, time within which British Columbia Public Works Department may make highway across Great Northern Ry. at mile 173.04, Nelson-Fort Sheppard-Spokane Branch, authorized by order 32,903, Sept. 29, 1922.

33,335. Jan. 27.—Authorizing C.P.R. to use bridge 6.8, Orangeville Subdivision, Ontario District.

33,336. Jan. 29.—Declaring that for the present the first public crossing north of Longford station, Ont., over G.T.R., is protected to Board's satisfaction.

33,337. Jan. 29.—Declaring that for the present, the C.P.R. crossing in Tp. 16, Range 16, west 3rd Meridian, near Centaur, Alta., is protected to Board's satisfaction.

33,338. Jan. 29.—Authorizing C.P.R. to build spur for Pembroke Shook Mills, Ltd., in Con. 11, Clara Tp., Ont.

33,339. Jan. 29.—Approving agreement between Bell Telephone Co. and Arundel Development Co., Terrebonne, Argenteuil and Ottawa Counties, Que.

33,340. Jan. 30.—Authorizing C.P.R. to build spur for Ontario Highways Department in Lot 28, Arthur Tp., Ont.

33,341. Jan. 30.—Approving general location and detail plan of foot subway under Canadian National Rys. main line and elevator track at Main St., Dauphin, Man.

33,342. Jan. 30.—Approving until further order, conditions to be printed, and signed by holders of free annual transportation issued by C.P.R.

33,343. Jan. 29.—Authorizing C.P.R. to put on attachment to jackknife style gates at crossing of Talbot Ave., Winnipeg.

33,344. Jan. 31.—Dismissing complaint of Spanish River Pulp & Paper Mills, Ltd., that rates on Group A descriptions of paper from Sturgeon Falls and Espanola to Toronto and other destinations in Ontario, are higher, distances considered, than from Montreal, Lachute and other origin stations named in C.P.R. and Canadian National Rys' tariffs. This order is given in full on another page.

33,345. Jan. 31.—Ordering G.T.R., where cars are stored on passing track most easterly of two tracks over Orillia St., Washago, Ont., to keep same back 350 ft. from street line.

33,346. Jan. 31.—Authorizing C.P.R. to build spur across 13th St., Owen Sound, Ont., for Imperial Oil Ltd.

33,347. Jan. 31.—Approving location and details of Canadian Northern Rys. station building at Giroux, Man.

33,348. Jan. 31.—Authorizing C.P.R. to build spur for Backus-Brooks Co., Kenora, Ont.

33,349 to 33,351. Feb. 1.—Approving Bell Telephone agreements with West Lake Telephone Co., Algoma District; Belmont Tp. Telephone System, Peterborough County, and Fordwich Rural Telephone Co., Huron and Perth Counties, Ont.

33,352. Feb. 2.—Authorizing Canadian Northern Ry. to use bridge over Sinclair St., Cobourg, Ont.

33,353. Jan. 27.—Declaring that for the present, C.P.R. crossing of Hunter St., Woodstock, Ont., is protected to Board's satisfaction.

33,354. Feb. 1.—Approving agreement between Bell Telephone Co. and Springbank Telephone Co., Huron and Wellington Counties, Ont.

33,355. Feb. 1.—Dismissing application of Great West Sand & Gravel Co., and Braid & McCurdy, Winnipeg, for reduction in rates on building sand, gravel and crushed stone from Birds Hill to Winnipeg.

33,356. Feb. 5.—Amending order 33,299, Jan. 19, re C.P.R. crossing at King St., St. Stephen, N.B., by providing that all train movements over crossing during the 4 days of the annual exhibition, be flagged.

33,357. Feb. 5.—Approving G.T.R. plan showing installation of switch box at first highway crossing west of Carp station, Ont.

33,358. Feb. 3.—Declaring that for the present, the G.T.R. crossing of Government Road, near Waterville, Que., is protected to Board's satisfaction.

33,359. Feb. 6.—Approving and authorizing clearance on C.P.R. at proposed tank car shed of Imperial Oil Ltd., Calgary, Alta.

33,360. Feb. 6.—Authorizing Westbourne municipality, Man., to make highway crossing over

Manitoba & Northwestern Ry., at mile 27.21, Minnedosa Subdivision, Man.

33,361. Feb. 2.—Declaring that for the present, between 7 a.m. and 11 p.m., the C.P.R. crossing at Dundas St., Trenton, Ont., is protected to Board's satisfaction, and ordering that between 11 p.m. and 7 a.m., speed of trains over crossing be limited to 10 miles an hour.

33,362. Feb. 7.—Dismissing application of Dominion Sheet Metal Corporation, Hamilton, Ont., against rates on galvanized sheets to Winnipeg.

33,363, 33,364. Jan. 30.—Dismissing application of Quebec Ry., Light, Heat & Power Co. for order distributing cost of maintenance and operation of crossings at Crown and St. Valer Sts., Quebec, between C.P.R., G.T.R., Quebec Central Ry. and Quebec Ry., Light, Heat & Power Co.

33,365. Feb. 7.—Approving route map of general location of portion of Manitoba & Northwestern Ry., Tuffnell to Prince Albert line, mile 0 to 211.75, Sask.

33,366. Feb. 6.—Suspending until further order, rule 5-A in Supplement 4 to C.P.R. tariff, C.R.C. no. W-2658.

33,367. Feb. 9.—Authorizing C.P.R. and Canadian National Rys., to install bell and wigwag signals in lieu of watchman at Kingston Road crossing in Lot 33, Con. 1, Hastings County, Ont.

33,368. Feb. 7.—Amending order 3,079, April 23, 1907, authorizing Vancouver, Westminster & Yukon Ry. to cross British Columbia Electric Ry. at Venables St., Vancouver, B.C., by providing that conditions in the Railway Act, 1919, secs. 306 and 307, be observed by the railways, at this crossing.

33,369. Feb. 9.—Authorizing G.T.R. to build spur for J. M. Schneider & Sons, Kitchener, Ont.

33,370. Feb. 10.—Approving details and location of Canadian National Rys. freight and passenger shelter at Bredin, Sask.

33,371. Feb. 7.—Rescinding order 25,449, Sept. 20, 1916, in so far as it authorizes building portions of sidings serving James Playfair's mill yard on Lot 108, Con. 2, Tay Tp., Ont.

33,372. Feb. 10.—Declaring that for the present, G.T.R. crossing at Wilson St., Woodstock, Ont., is protected to Board's satisfaction.

33,373. Feb. 9.—Declaring that for the present, Canadian National Rys. crossing near Lilac, Sask., is protected to Board's satisfaction.

33,374. Feb. 12.—Authorizing Canadian National Rys. to build across highway between Secs. 26 and 25, Tp. 26, Range 8, West 3rd Meridian, Sask.

33,375. Feb. 12.—Approving location and detail plans of Canadian National Rys. station at Brussels, Ont.

33,376. Feb. 12.—Declaring that for the present, C.P.R. crossing near Chesterville station, Ont., is protected to Board's satisfaction.

33,377. Feb. 12.—Declaring that for the present, Pere Marquette Rd. crossing over first road south of Mooretown station, Ont., is protected to Board's satisfaction.

33,378. Feb. 12.—Authorizing City of Weyburn, Sask., to make highway crossing over Grand Trunk Pacific Ry. between 4th and 5th Aves. North, Weyburn, Sask.

33,379. Feb. 16.—Authorizing G.T.R. to rebuild bridge carrying highway between Lots 13 and 14, Broken Front Concession, Darlington Tp., Ont., over its tracks.

33,380. Feb. 16.—Authorizing Saskatchewan Highways Department to make highway across C.P.R. in n.w. ¼ Sec. 17, Tp. 14, Range 15, west 2nd meridian, near Sedley, Sask.

33,381. Feb. 17.—Authorizing G.T.R. to build spur for Carriage Factories, Ltd., South Orillia Tp., Ont.

33,382. Feb. 19.—Authorizing C.P.R. to open for traffic, portion of its line from mile 100.74 to 101.93, in Lot 3, Kingston Tp., Ont.

33,383. Feb. 19.—Declaring that for the present, G.T.R. crossing near Jarvis, Ont., is protected to Board's satisfaction.

33,384. Feb. 19.—Authorizing G.T.R. and Toronto, Hamilton & Buffalo Ry. to build six spurs for Massey-Harris Co., Brantford, Ont.

33,385. Feb. 19.—Authorizing C.P.R. to build connection with Spokane & Alberta Coal & Coke Co. in s.w. ¼ Sec. 7, Tp. 8, Range 5, west 5th meridian, Alta.

33,386. Feb. 20.—Ordering C.P.R. to pay Ontario Public Highways Department, \$1,368.50 as its proportion of cost of new drainage system at subway at Dundas St. crossing, Whitby Tp., Ont.

33,387. Feb. 21.—Declaring that for the present, C.P.R. crossing near Dranoel, Ont., is protected to Board's satisfaction.

33,388. Feb. 21.—Amending order 33,218, Dec. 7, 1922, re Furncoal Road crossing, Rodney, Ont., by Michigan Central Rd. and Pere Marquette Rd. by providing that cost be paid 25% out of railway grade crossing fund and remainder by M.C.R. and P.M.R.

33,389. Feb. 21.—Rescinding orders 26,423 and 26,591, Aug. 14 and Oct. 2, 1917, prohibiting the sounding of any locomotive or steam whistle or other engine of C.P.R., G.T.R. and Canadian Northern Ry. when approaching highway crossings in Brighton, Ont., as provided by bylaw A115, Aug. 7, 1917.

33,390. Feb. 21.—Authorizing Canadian Northern Ry. to cross Paipoon Road, Kashabowie Subdivision, Neebing Tp., Ont.

33,391. Feb. 21.—Declaring that for the pres-

ent, C.P.R. crossing at Zorra St., Beachville, Ont., is protected to Board's satisfaction.

33,392. Feb. 21.—Ordering G.T.R. to stop train 58, westbound on flag, at Moose Creek, Ont., on Sunday evenings.

33,393. Feb. 23.—Authorizing Canadian Northern Ry. to build spur for Eastern Collieries of Bienfait Ltd., near Bienfait, Sask.

33,394. Feb. 20.—Amending order 33,258, Jan. 2, 1923, approving plan showing change in operation of bell at crossing of Beverley and Dundas Sts., Galt, Ont., by G.T.R., Grand River Ry. and C.P.R., by striking out C.P.R.

33,395. Feb. 23.—Authorizing Canadian Northern Ry. to build spur for Wm. Addie, near Bienfait, Sask.

33,396. Feb. 23.—Authorizing C.P.R. to build spur for St. Lawrence Paper Mills, Ltd., Three Rivers, Que.

33,397. Feb. 19.—Ordering Toronto, Hamilton & Buffalo Ry. to remove board fence on south side of tracks at crossing of First Governor's Road, 1.24 miles west of Mineral Springs station,

Ont., and to cut down embankment on north side to provide better view of approaching trains.

33,398. Feb. 19.—Dismissing complaint of Coteau Landing village, Que., against G.T.R. refusal to supply cars for the shipment of hay, coal and grain.

33,399. Feb. 21.—Authorizing G.T.R. to build extension of passing track across public road at Brighton, Ont.

33,400. Feb. 26.—Ordering G.T.R. to trim trees to improve view of approaching trains at crossing between cons. 10 and 11, near Drayton, Ont.

33,401. Mar. 3.—Declaring that for the present, C.P.R. crossing of Crown St., Quebec, Que., is protected to Board's satisfaction.

33,402. Mar. 3.—Dismissing Canadian National Ry. application to close divisional point at Jasper, Alta., and consolidate it with divisional point at Lucerne, B.C., and ordering that divisional point at Lucerne be consolidated with divisional point at Jasper, Alta.

33,403. Feb. 26.—Rescinding order 26,133, May 21, 1917, authorizing G.T.R. to build spur for The

William Kennedy & Sons, Ltd., at Collingwood, Ont.

33,404. Feb. 28.—Authorizing Canadian National Ry. to rebuild bridge carrying public highway between Lots 18 and 19, Con. D, Scarborough Tp., Ont., across G.T.R.

33,405. Feb. 28.—Authorizing Canadian National Ry. to cross and divert Dawson Road, near Rowan, Ont.

33,406. Feb. 28.—Ordering Canadian National Ry. to appoint station agent at Ardley, Alta., by April 1.

33,407. Mar. 5.—Declaring that rates published in Northern Pacific tariff C.R.C. 541 should have been made effective Dec. 1, 1921, under provisions of general order 350; and authorizing Northern Pacific Ry. and other interested railways to make refund on shipments made between Dec. 1, 1921, and Jan. 9, 1922, of the difference between freight charges based on the higher rates assessed and the rates which were published to become effective Jan. 9, 1922 (complaint of Minnesota & Ontario Paper Co., International Falls, Minn.).

Canadian Pacific, Canadian National and Grand Trunk Railways' Earnings.

C.P.R. January gross earnings were \$13,148,914, an increase over Jan. 1922 of \$1,810,939; operating expenses were \$12,428,888, an increase of \$1,574,390. Net earnings for Jan. 1923 were \$720,026, being \$236,549 greater than in Jan. 1922.

The Canadian National Ry. (Canadian Northern Ry., Canadian Government Ry. and G.T.P. Ry., steam lines only) January gross earnings were \$9,550,296, against \$8,210,401 in Jan. 1922; operating expenses were \$10,706,673, against \$10,433,563 in Jan. 1922. The operating

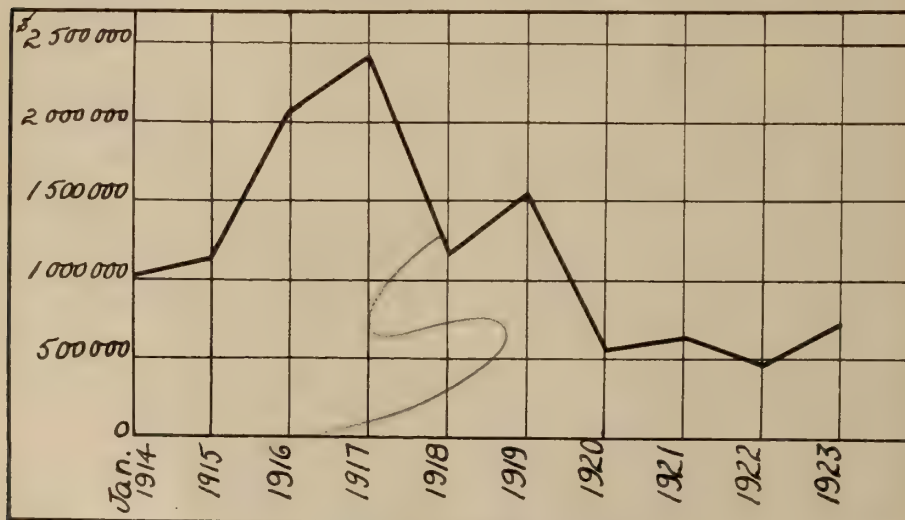
compensate for the operating loss on the original Canadian National system. The loss for the system as a whole, however, was much smaller than in Jan. 1923.

There has been a lot of conjecture in railway and financial circles as to how the railways would fare with the reduced rates, after the bulk of the grain crop had been moved, and the January figures furnish a partial answer, indicating that traffic conditions are now such as to enable the roads to get better net results, with lower rates, than they could in Jan. 1922 with higher rates. The improve-

to see the railways deriving net returns to compare favorably with those of 1922, with lower rates prevailing, with labor costs not decreased commensurately, and with a commodity market marked by increasing, rather than decreasing, prices, the only way they can do it is by securing and handling a much larger traffic than in 1922.

This will be all the more difficult, because 1922 was a year in which the usual seasonal improvement in traffic which takes place as autumn approaches, was accompanied by another improvement which was not seasonal, but which was due entirely to improving business and economic conditions. How much further traffic improvement can be expected to result from this cause is largely problematical, but if the improvement in economic conditions continues, and results in continued improvement in railway traffic, then it may be at least hoped that the railways can turn this condition to good account, in counterbalancing the rate reductions which are keeping down gross revenues.

But even if the railways should secure net results throughout 1923, as good as, or somewhat better than, in 1922, they will have a long way to go before their net earnings will be nearly as favorable as prior to 1920. The accompanying graph of the net earnings secured by the C.P.R. in each January from 1914, shows that while the net in Jan. 1923 was better than in January of 1920, 1921 or 1922, it was not nearly so large as in January of any of the preceding years back to 1914. The condition illustrated is broadly applicable to the Canadian railway industry in its entirety, and when it is considered that the net earnings in January of 1914, and the five following years, were derived from gross earnings much smaller than in January of 1920 and the three following years, it is evident that railway operating expenses still constitute an unduly large portion of gross earnings. As stated above, under the present relationship between unit revenues and expenses, the railways' only salvation is in a continued heavy traffic movement. Consideration of the position in the railway industry which has been indicated, together with the fact that the railways have had, and continue to have, their facilities, particularly cars, taxed to the limit to meet the traffic now offering, leads to the belief that if the railways were now deriving net earnings more in proportion to those enjoyed prior to 1920, they would be in a much more favorable position to provide facilities to look after further traffic increases.



C.P.R. January Net Earnings, 1914-1923.

deficit in Jan. 1923 was \$1,156,377, against \$2,223,163 in Jan. 1922, an improvement of \$1,066,786.

Grand Trunk Ry., all lines, gross revenues for Jan. 1923 were \$8,623,348, against \$7,339,605 in Jan. 1922; operating expenses were \$7,937,775, against \$6,743,800, and net earnings were \$685,573, against \$595,805 in Jan. 1922. G.T.R. Canadian lines gross earnings for Jan. 1923 were \$6,046,562, against \$5,354,317 in Jan. 1922; operating expenses were \$5,695,596, against \$4,984,953, and net earnings were \$350,966, against \$369,364 in Jan. 1922.

It is evident that all three roads derived better net earnings in Jan. 1923 than in Jan. 1922, the improvement accomplished by the Canadian National Ry., in the reduction of the operating deficit, being of greater magnitude than that accomplished by either the C.P.R. or G.T.R. in increasing their net earnings. The month resulted in an operating loss for the national system as a whole, the net earnings secured by all G.T.R. lines not being large enough to

ment in net in Jan. 1923 was made possible, primarily, by a substantial increase in gross earnings. Examination of the relationship between operating revenues and expenses, indicates clearly that had not the revival in traffic taken place which the larger gross earnings record, the railways would be in a most unenviable position with the present relationship between unit rates and expenses. As to succeeding months, preliminary statements for February indicate that the steady increase in gross, compared with corresponding weeks in 1922, which was experienced throughout January, was not maintained; some weeks in February showing considerable decreases in gross earnings for all roads. It may be possible that with various items of operating expense influenced favorably by better weather and other conditions, operating expenses in February and March will have been held down to accord with the manner in which lower rates have kept the gross earnings down; but however this may have been, it must be evident that if the immediate future is

Combined Operating Results of Dominion Government Railways.

While Canadian Railway and Marine World has from time to time published statistics showing the financial and operating results on the different lines constituting the Canadian Government-owned railways, as the figures became available, no table showing the complete returns for the Government-owned lines as a whole has been given heretofore. The Railways and Canals Department's report for the year ended Mar. 31, 1922, issued recently, contains a table showing the combined results of the operation of the various railways comprising the Government system, which is reproduced below. The total deficits recorded for

1920 and 1921 show how serious has been the drain imposed upon the public treasury. The smaller operating loss experienced in 1921 by the roads as a whole was almost counterbalanced by the large increase in fixed charges over those for 1920. When it is considered that after the Canadian National Rys. management succeeds in making those railways earn their operating expenses, the large fixed charges will still remain as an ever-present liability, some idea of the immensity of the country's railway problem is furnished. There are indications that for 1922 the operating expenses were about earned, but the fixed charges remaining

to be paid constitute a compelling argument in support of the proposition that Canada's population, and industrial and agricultural activity, must be increased, so that a vastly increased traffic can be offered to her railways.

The figures for the Canadian National System include those relating to the Canadian Northern and the former Government lines, the Intercolonial and the National Transcontinental, which were combined for co-ordinated operation in the closing months of 1918, and the Grand Trunk Pacific, which has been operated as an integral part of the National System since Oct., 1920. For the first time, it is possible to present, in comparable detail, the result of the operation of the Grand Trunk and the Central Vermont, in which the G.T.R. has a controlling interest. For purpose of reference, the combined result of the operation of these various railways has been set out in the statements given herewith.

Grain in Store at Elevators.

The Dominion Bureau of Statistics, Internal Trade Branch, reports that the quantity of grain in store for the week ended March 9, had decreased: wheat 1,714,806 bush., flax 7,346, rye 96,327; and increased, oats 491,361, barley 119,088 bush. Western country elevators showed increases in all grains: wheat 1,262,821 bush., oats 543,313, barley 75,652, flax 4,295, rye 30,461. The receipts for the previous week were 6,255,026 bush. total, and the shipments 4,341,114 total.

Interior terminal elevators showed increases: wheat 135,884 bush., oats 121,431, barley 8,635. Flax decreased 747 bush.

Public and private terminal elevators at Fort William and Port Arthur showed increase: wheat 301,905 bush., barley 44,561, rye 62,222, and decreases, oats 138,535 bush., flax 23,815. The receipts at Fort William and Port Arthur, Ont., from Sept. 1, 1922, were 245,405,504 bush., and at Vancouver, B.C., 12,286,997 bush.

Winnipeg private terminal elevators showed decreases: wheat 13,461 bush., oats 9,542, and increases: barley 317 bush., flax 935.

Public elevators in the east showed decreases: wheat 883,946 bush., oats 52,137, barley 87,312, and an increase in flax of 11,986 bush. The receipts of all grains were 247,986 bush. by ship and 850,605 by rail, the shipments being 307,941 bush. by ship and 1,592,298 by rail. The quantity of U.S. grain in store was 2,076,349 bush., compared with 3,781,166 at the same period 1922.

U.S. lake ports show decreases in all grains: wheat 976,450 bush., oats 65,000, barley 23,885, rye 291,785.

U.S. Atlantic seaboard ports showed increases in oats 91,829 bush., barley 100,620, rye 102,775, and a decrease of 663,337 in wheat.

Reid Newfoundland Co.—As stated previously in Canadian Railway and Marine World, the arrangement between the Newfoundland Government and the Reid Newfoundland Co., for continuing operation of the railway and steamship lines, was extended until Feb. 15. We have reason to believe that it has been further extended until June 30.

Operating Revenues			
	1921	1920	
Canadian Northern Railways.....	\$69,088,474 16	\$66,695,398 80	
Canadian Government Railways.....	40,964,303 92	44,537,803 85	
Grand Trunk Pacific Railway.....	16,638,677 64	14,408,549 66	
Total Canadian National Railways.....	\$126,691,455 72	\$125,641,752 31	
Grand Trunk System—			
Canadian lines.....	76,858,032 27	81,442,647 32	
Western lines.....	22,193,256 82	22,106,707 15	
New England lines.....	2,910,515 43	2,936,869 55	
Central Vermont.....	7,135,753 06	6,737,710 50	
Total Grand Trunk.....	109,097,557 58	113,223,934 52	
Total Canadian National.....	126,691,455 72	125,641,752 31	
Grand total operating revenues.....	235,789,013 30	238,865,686 83	
Operating Expenses			
	1921	1920	
Canadian Northern Railway.....	\$75,564,385 30	\$82,953,978 60	
Canadian Government Railways.....	46,551,602 67	54,987,680 28	
Grand Trunk Pacific Railway.....	20,668,869 51	24,543,063 60	
Total Canadian National Railways.....	\$142,784,857 48	\$162,484,722 48	
Grand Trunk System—			
Canadian lines.....	71,179,292 80	76,213,815 16	
Western lines.....	22,641,181 93	21,389,912 07	
New England lines.....	3,592,005 72	3,712,544 75	
Central Vermont.....	7,312,559 48	7,568,556 60	
Total Grand Trunk.....	104,725,039 93	108,884,828 58	
Total Canadian National.....	142,784,857 48	162,484,722 48	
Grand total operating expenses.....	247,509,897 31	271,369,551 06	
Operating Net or Deficit			
	1921	1920	
Canadian Northern Railway.....	\$ 6,475,911 14	\$16,258,579 80	
Canadian Government Railways.....	5,587,298 75	10,449,876 43	
Grand Trunk Pacific.....	4,029,691 87	10,134,513 94	
Total operating deficits, Canadian National Rys.....	16,092,901 76	36,842,970 17	
Grand Trunk System—			
Canadian lines.....(net rev.)	5,678,739 47*	5,228,832 16*	
Western lines.....	447,925 11†	716,795 08*	
New England lines.....	681,490 29	775,675 20†	
Central Vermont.....	176,806 42	830,846 10†	
Total net revenue, Grand Trunk (including C.V.).....	4,372,517 65	4,339,105 94	
Canadian National deficit.....	16,092,901 76	36,842,970 17	
Grand Trunk net revenue.....	4,372,517 65	4,339,105 94	
Total operating deficit.....	\$11,720,384 11	\$32,503,864 23	
*Net revenue. †Deficit.			
Income and expenditure other than operation added \$602,350.17 to the operating deficit of 1921, making the total deficit before fixed charges \$12,322,734.28, compared with \$26,812,422.28 for 1920. To this must be added as follows:—			
Fixed Charges and Total Deficit			
	1921	1920	
Canadian Northern Railway—			
Interest due public.....	\$17,595,707 51	\$13,993,695 36	
" " Government.....	13,224,208 27	10,326,260 69	
Grand Trunk Pacific—	30,819,915 78	24,319,956 05	
Interest due public.....	3,977,447 36	4,270,244 38	
" " Government.....	1,535,474 22	1,539,224 00	
" on receiver's certificates.....	1,702,886 64	808,351 63	
" due Grand Trunk Railway.....	2,742,191 60	2,256,467 90	
Total fixed charges, Canadian National lines.....	9,957,999 82	8,874,287 91	
Grand Trunk Railway System—	40,777,915 60	33,194,243 96	
Interest payable to Dominion Government.....	2,107,420 66	771,450 67	
Interest payable to others—			
Canadian lines.....	18,385,194 04	10,765,944 62	
Western lines.....	2,077,098 70	1,935,583 49	
Central Vermont.....	675,870 28	552,658 29	
Total Grand Trunk fixed charges.....	19,245,583 68	14,025,637 07	
Total Canadian National fixed charges.....	40,777,915 60	33,194,243 96	
Grand total fixed charges.....	60,023,499 28	47,219,881 03	
Add net deficit.....	12,322,734 28	26,812,422 28	
Add loss on St. John and Quebec Railway (leased).....	\$72,346,233 56	\$74,032,303 31	
Total deficit.....	\$72,346,233 56	\$74,032,303 31	
Total deficit.....	\$72,662,278 16	\$74,378,318 80	

The operating results of the Grand Trunk Western lines, New England lines, and the Central Vermont during 1920 are for 10 months only from March 1, when the United States roads were turned over to their owners for operation after the war-time period of Government control with standard return.

Railway Rolling Stock Orders and Deliveries.

The Essex Terminal Ry. has received 1 six-wheel locomotive, with cylinders 20 x 26 in., from Montreal Locomotive Works.

Sir William Arrol & Co., sub-contractors on Welland ship canal, St. Catharines, Ont., have bought 7 second hand Western, long cylinder, all steel dump cars, 12 cub. yd. capacity, 19 ft. bed, the floors being wood, steel lined, from Canadian Equipment Co., Montreal.

The C.P.R., between Feb. 11 and March 14, received 133 freight refrigerator cars from National Steel Car Corporation, and 2 Jordan ballast spreaders.

The National Steel Car Corporation, between Feb. 12 and March 20, delivered 135 refrigerator cars to the C.P.R., and expected to deliver 39 more before the end of the month, thus completing an order for 250.

The Timiskaming & Northern Ontario Ry. has ordered 50 steel under frame, single sheathed box cars, 40 tons capacity, from National Steel Car Corporation. They will be the same as to dimensions, construction, etc., as the 1,000 box cars ordered recently by Canadian National Rys. from National Steel Car Corporation. The T. & N. O. Ry. cars will have Andrews steel truck side frames, instead of arch bar construction as applied to the C.N.R. cars.

The C.P.R. gave orders for rolling stock, between Feb. 11 and March 14, as follows:—6 buffet parlor cars, 6 cafe parlor cars, and 15 first class passenger cars, frames of each lot to be built by Canadian Car & Foundry Co.; 12 mail and express cars, and 300 coal cars, each lot to be completely built by Canadian Car & Foundry Co.; 300 freight cars, to be completely built by Eastern Car Co.

We were officially advised early in March, in regard to the Canadian National Rys. orders given Canadian Car & Foundry Co., that preparations were being made to proceed with the construction of the ballast cars, and that it was the intention to start on the freight and passenger cars as soon as sufficient material had been secured. Delivery of the entire order is expected to be completed by Aug. 1.

The Canadian National Rys. have ordered 7 transfer locomotives from Canadian Locomotive Works. They will have similar dimensions, and will be similar in design to, the five 0-8-0 transfer locomotives built by the G.T.R. at its Montreal shops last year, which have a weight on drivers of 242,750 lb., tractive effort of 52,329 lb., driving wheel base of 15½ ft., and extended wagon top type boiler, carrying working pressure of 170 lb., and are equipped with brick arch and all modern appliances.

United States locomotive plants' shipments declined somewhat in February, compared with January, but unfilled orders were considerably higher at the end of February than at the end of January. Both shipments and unfilled orders for foreign countries continued to decline throughout February. The shipments in February were 207 locomotives, compared with 229 in January and but 44 in Feb. 1922. Unfilled orders at the end of February were 2,220, compared with 1,788 at the end of January, and but 239 at the end of Feb. 1922. Of the 2,220 unfilled orders at the end of February, 79 were foreign.

We are officially advised, in regard to the work equipment ordered by the Canadian National Rys., as stated in Canadian

Railway and Marine World for February and March, that at March 16, shipments had been made as follows:—Erie ditcher, to Toronto; 150-ton wrecking crane, to Transcona, Man.; one of the 160-ton wrecking cranes, to St. Thomas, Ont.; 3 Industrial cranes, 6 ballast ploughs, and 1 concrete mixer, billed to Winnipeg. The equipment is for use in the territory around the point to which billed in each instance. We were also advised that delivery on the balance of the work equipment ordered was expected in the near future.

The British-American Oil Co., Toronto, has ordered 50 type A center anchorage tank cars from Standard Tank Car Co., Sharon, Pa. The principal dimensions will be as follows:—

Length over striking plates.....	35 ft. 9 in.
Length overall of tank.....	32 ft. 11 in.
Bend line to bend line.....	31 ft. 4½ in.
Height over all.....	14 ft. 6½ in.
Width.....	9 ft. 3 in.
Distance between truck centers.....	25 ft.
Truck wheelbase.....	5 ft. 6 in.
Capacity of tank.....	10,050 gall.

The cars will be mounted on 50-ton arch bar trucks and will be equipped with Cardwell G-11 draft gears.

Quebec Development Co., Quebec, Que., has ordered 8 four-wheel locomotives, Q 318, and 5 four-wheel locomotives, Q 319, from Montreal Locomotive Works. Following are chief details:—

	Q 318	Q 319
Gauge.....	4 ft. 8½ in.	4 ft. 8½ in.
Weight, total.....	80,000 lb.	66,000 lb.
Wheel base.....	7 ft.	6 ft. 3 in.
Cylinders, diam. and stroke.....	14 x 22 in.	13 x 20 in.
Driving wheels, diam.....	40 in.	36 in.
Driving journals.....	7 x 8 in.	6½ x 8 in.
Boiler, type.....	Straight top	Radial stay
Boiler pressure.....	190 lb.	180 lb.
Firebox, length.....	46½ in.	47 11/16 in.
Firebox, width.....	50¼ in.	36¼ in.
Tubes, no. and diam.....	111—2 in.	90—2 in.
Tubes, length.....	11 ft. 8 in.	10 ft.
Heating surface, tubes.....	675 sq. ft.	472 sq. ft.
Heating surface, firebox.....	60 sq. ft.	53 sq. ft.
Heating surface, total.....	735 sq. ft.	525 sq. ft.
Grate area.....	16.2 sq. ft.	12 sq. ft.
Tractive power.....	17,400 lb.	14,400 lb.
Factor of adhesion.....	4.6	4.6
Tank, type.....	Saddle	Saddle
Capacity, water.....	1,700 gall.	1,600 gall.
Capacity, coal.....	1,600 lb.	1,200 lb.

United States Railways' Financial Results.

U.S. class 1 railways had in January the best month experienced since the Transportation Act was passed, so far as net operating income earned is concerned. The net operating income earned by them as a whole was \$60,544,700 for the month, or at the annual rate of 5.54%. The highest rate at which they earned previous to January, since the passage of the act setting up a "just and reasonable" return at which to aim, was 5.4%, in Oct. 1921. The rate prescribed as just and reasonable is now 5.75%. In Dec. 1922 they earned at the rate of 5.15% annually, and in Jan. 1922 at but 2.75%.

Operating revenues in Jan. 1923 were \$500,683,400, an increase of 27% over Jan. 1922. Operating expenses were \$407,615,000, an increase of 21% over Jan. 1922. The operating ratio for the month was 81.4, compared with 85.3 in Jan. 1922. Freight traffic was 39% heavier, expressed in ton mileage, than in Jan. 1922, and on the assumption that passenger traffic was about constant, the fact that operating revenues increased only 27% makes evident the effect of the lower rates under which the U.S. railways are now operating.

The Bad Order Car Situation.

The Railway Association of Canada reports that on March 1 there were 187,776 freight cars on Canadian lines, of which 11,113 were in bad order. On the A.R.A. basis, which assumes that a normal percentage of bad order cars is 7, a total of 13,144 bad order cars could have been expected. The bad order percentage was 5.9. A shortage of 4,810 cars was reported.

The American Railway Association's Car Service Division reports that, at Feb. 1, out of 2,287,258 freight cars on U.S. lines, 209,471, or 9.2%, were awaiting repairs. Out of 1,047,171 box cars, 88,966, or 8.5%, were in bad order; out of 59,295 refrigerator cars, 6,303, or 10.6%; out of 962,375 gondolas, 95,093, or 9.9%; out of 80,931 stock cars, 7,669, or 9.5%; and out of 95,041 flat cars, there were 8,729, or 9.2%, in bad order.

The situation in Canada at March 1, when there were 11,113 cars in bad order, was not quite as good as at Feb. 1, when there were but 10,952, the latter figure being but 5.73% of the total. The situation in the U.S. at Feb. 1, when 9.2% of all freight cars were in bad order, was somewhat better than at Jan. 15, when there were 9.6%. The difference in the situation on Canadian and U.S. roads in favor of the former is still notable, however. If U.S. lines had but 5.9% of their freight equipment in bad order, instead of 9.2%, it would mean that they would have only 134,948 cars tied up, instead of 209,471.

Canadian Freight Cars in United States.

Sir Edward Kemp enquired in the Senate recently: "How many Canadian National Rys. freight cars were in United States territory according to the latest statistics?" Senator Dandurand replied: "On Feb. 1, 28,672 Canadian National (all lines) freight cars were located on foreign lines in the United States." In answer to further questions by Senator McMeans as to whether he could tell the number there at the time of the enquiry, and when the cars would be returned to Canada, Senator Dandurand said: "No. This is the answer I received from the Department," and added: "There is a constant interchange of freight cars between Canada and the United States. Of course, the honorable gentleman is aware that these cars, when detained a certain number of days, are paid for, and that there is an exchange office at Chicago, to the maintenance of which all railways contribute, for the purpose of tracing the cars and reporting daily as to their movements. We can always know from day to day where the Canadian cars are, and it would perhaps be interesting to know, when there is a majority of cars on the other side, what is the total return to our railways for demurrage."

Doctors Employed by Canadian National Rys.—The House of Commons passed a motion recently by J. E. S. E. D'Anjou, Rimouski, Que., for a return showing the number of doctors employed by the Canadian National Rys., including the Intercolonial, Canadian Northern and Grand Trunk, in Quebec province, their names and addresses, salaries received, on whose recommendation the appointments were made, and whether they are allowed to take part in politics, either Dominion or provincial.

Railway Wages and Working Conditions in Canada and the United States.

Developments in the railway wage and working condition situation in Canada during March were few and included none of what may be termed country-wide importance, with the exception of Mr. Justice Galt's decision in regard to the Brotherhood of Locomotive Engineers status, which is dealt with fully elsewhere in this issue. Among other developments have been the following:

The Canadian Brotherhood of Railway Employees applied to the Minister of Labor, for a conciliation board, under the Lemieux Act, to investigate a dispute between the Canadian National Rys. and certain sleeping car porters and dining car employes, the majority of whom are members of the Canadian Brotherhood of Railway Employees. Application for a board was made originally in 1922, but as it was thought possible to effect a settlement by direct negotiation, the application was not acted on. After many meetings, covering several months, an agreement was not arrived at, hence the latest application. We were advised on March 16 that the appointment of a board has been further delayed pending investigation by Labor Department officials to see if a direct agreement could be arrived at. The dispute has to do largely with back time, accruing since 1920, claimed by the employes.

The agitation for the adoption of the one big union idea, in railway labor organization, has continued, the propaganda originating in and spreading from Montreal, where addresses have been delivered in favor of the scheme by Z. Foster. Reports state that over 100 shopmen's local unions have declared in favor of the plan, and that the majority of the carmen, machinists, blacksmiths and boilermakers are ready to repudiate the craft union form of labor organization. The maintenance of way employes have also been circularized, and the intention is to try to get the running trades interested also. The success which the one big union agitators will meet with among the latter does not promise to be very great, as it is probable that the train and locomotive employes will have nothing to do with them. The opinion is freely expressed among men well versed in railway labor organization matters that it would be thought that the shopmen, like the train and locomotive men, would recognize that the one big union theory is impracticable and unproductive of desirable result, without having to discover that fact by trying it all over again.

In accordance with the agreement reached between the C.P.R. and its clerical employes, as stated in a previous issue, these employes have been accorded the slightly increased rates of pay provided for, ranging from \$2 to \$10 a month.

The International Association of Machinists held a meeting in Winnipeg, early in March, at which wages and working conditions were discussed. Much dissatisfaction with some of the working conditions introduced in the May, 1922, agreement was expressed, particularly with the clauses dealing with overtime and Sunday work.

Canadian National Railways shopmen are planning a readjustment of committees to accord with the reorganization of the national system, so that there will be committees for each of the three regions and proper co-relation between the local organizations through these

committees and the system general committee. Plans have been made by the shopmen's officials to go into this matter thoroughly in the near future.

G. W. Lee, Chairman, Timiskaming & Northern Ontario Ry. Commission, is reported to have assured International Association of Machinists' officials on March 8 that all contracts let by the Commission will contain a fair wage clause, so that all labor performed in connection with them will be paid for at equitable rates. Dissatisfaction with wages paid in connection with the construction of some locomotives for the Commission is said to have led the machinists' officials to seek the assurance obtained.

The C.P.R. was reported about March 20 to have decided to lay off a number of junior employes at the various car and locomotive shops throughout the system, to prevent the temporary shut-downs which have been the rule during the past two years, and to which the shop employes have strenuously objected. A Montreal press dispatch of March 24 stated that the C.P.R. Angus shops had been closed on March 23, and would remain closed to April 3, in consequence of an arrangement between the management and the employes, arising from a suggestion from the latter, that instead of there being a staff reduction, with the junior men laid off, all employes should be retained and the work available spread among them.

Ash Kennedy, Vice Chairman, Brotherhood of Locomotive Engineers, is reported to have stated that preliminary meetings had been held with a view to merging the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen, and that next year something definite might be done. Such a merger has been mooted for so many years, without getting past the discussion stage, that any real action in the matter would be a surprise.

A. R. Mosher, President, Canadian Brotherhood of Railway Employees, issued a statement pointing out that that organization is registered under the Trade Unions Act, and is therefore not an illegal organization operating in restraint of trade, as the Brotherhood of Locomotive Engineers was declared to be in the judgment referred to above.

United States Situation.—It is reported that the U.S. Government is to be asked by the American Federation of Labor, Railway Employees' Department, and associated organizations, to take over and operate, as in wartime, the railways on which strike conditions still prevail. This was stated by Tim Healy, President, International Brotherhood of Firemen and Oilers, who was in Montreal recently, attending the pulp and paper makers' convention, in the interests of stationary firemen employed in pulp mills. He expressed the opinion that in 10 years all U.S. railways will be government-owned and operated. The request to the President to take over those roads, not many in number, where the shopmen have not come to a settlement with the management, is in line with labor's desire generally to see all the railways under government control.

Practically all U.S. roads have entered into agreements with their train, locomotive and yard employes, providing for the continuation of existing wage and working condition agreements for another year.

The U.S. Railroad Labor Board gave a decision, effective March 1, granting freight handlers and common laborers an increase of 2c. an hour, with time and a half for overtime and for Sunday work, or for work on any other day which the employe should have free if he has to work on Sunday on account of the demands of the service. The rule in connection with the latter matter is the same as that laid down by the Board for signalmen recently, as explained in Canadian Railway and Marine World for March. In connection with punitive rates for overtime and Sunday, the Board said:—"The Board is of the opinion. . . that the insistence of this class of employes that they should be allowed time and a half for all time in excess of the basic 8-hour day, is a just and reasonable contention. The overtime work of this class of employes is so largely under the control of the carrier, that the time and a half rule will not impose any appreciable financial burden. The Sunday and holiday rule, herein promulgated, simply recognizes the justice of the principle that every employe is entitled to one day off duty in seven."

Equalization of Freight Rates from Prairie Provinces Westward.

In the article in Canadian Railway and Marine World for March, on pg. 120, dealing with British Columbia and Alberta's appeal from the Board of Railway Commissioners' decision on freight rates, as affecting the interests of those provinces, attention was called to a notice of motion placed on the House of Commons order paper by J. A. Clark, Burrard, B.C., as follows:—"That in the opinion of this House, railway rates westward from the prairie provinces should be reduced to an equality with railway rates eastward from said provinces, for similar goods and distances."

Mr. Clark introduced his motion on March 5, but stated that he had been requested by some members interested in the matter to allow it to stand, and having received assurance of the acting Minister of Railways that an opportunity would be given to debate it, he had agreed to do so. On March 19, the motion again came up, but the Speaker stated that he had reason to believe that the question involved was sub judice, and asked Mr. Clark to suspend the presentation of the resolution till he had made up his mind on that matter. On being assured that the motion would hold its place and be called in its turn, if found to be in order, Mr. Clark agreed, and it was arranged that the matter would be brought up again on March 26.

A Calgary press dispatch of March 24 stated that the Calgary and Edmonton boards of trade would ask the Alberta Government to reconsider its decision to support British Columbia's application for an equalization of freight rates.

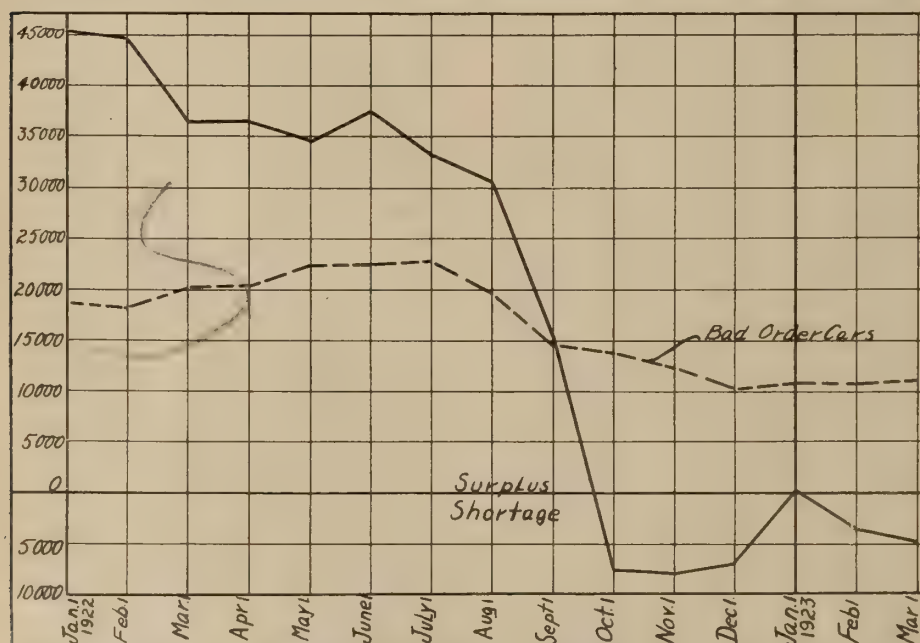
C.P.R. Quebec Terminals.—The House of Commons passed a motion recently, by G. Parent, Quebec West, for a copy of all contracts entered into between the C.P.R. and the National Transcontinental Ry. Commission, or the Dominion Government, concerning the price and conditions for the use by the Canadian National or the National Transcontinental Rys. of C.P.R. terminals and station at Quebec, Que.

Freight Car Surplusage and Shortage.

The accompanying diagram shows the conditions on Canadian railways, in regard to freight car surplusage and shortage, and also the bad order car situation, from Jan. 1, 1922, to March 1, 1923. At the start of the period there was a large surplus of serviceable freight cars on Canadian railways, amounting to 45,333. At Feb. 1, 1922, there were 44,928. At Aug. 1, 1922, there were 30,603; by Sept. 1 it had been reduced to 15,871, and by Oct. 1, so sudden was the increase in the demand by shippers, that a shortage of 7,667 freight cars had developed. This shortage continued throughout the crop moving season to Jan. 1, when the Railway Association of Canada reported a surplus of 244. This state of affairs was most temporary, however, as developments between Jan. 1, 1923, and March 1 showed, the shortage reported on March 1 being 4,810 cars.

The broken line representing the bad order car situation demonstrates that considerable improvement has been

shown did exist. In the words of the man on the street, the first part of 1922 marked the "last part of the worst slump the country ever experienced," and as business conditions are invariably truthfully reflected in traffic conditions, the lack of demand for freight cars was not surprising. But with the economic recovery becoming more pronounced as time passes, it is becoming increasingly evident that the country's normal traffic is going to require all the freight cars the railways can furnish, and on studying the diagram, one is liable to ask himself what the situation will be next autumn, if there is another large crop, when the situation in the winter months will be that there will be more demands for cars than can be filled. It is a fact that after every periodical slump, recovery brings a railway traffic greatly in excess of what was thought possible but a few short years before, and if the experiences of the past can be combined with present indications to point to any conclusion, it must be that the cars the



Freight Car Surplusage and Shortage, and Bad Order Car Situation, Jan. 1, 1922, to March 1, 1923

effected since last summer. At June 1, 1922, there were 22,408 cars in bad order, or 11.5% of all freight cars on line. At March 1, 1923, there were only 11,113 in bad order, or but 5.9% of the total. In view of the fact that the American Railway Association holds that a railway is accomplishing about all that can be expected of it if it keeps 93% of its freight equipment in operative condition, it is evident that there is not much room for improvement in the Canadian railway position, as far as the bad order car situation is concerned.

The diagram is of interest not only as a record of the past, but also as an indication of what may be expected in the future. A noticeable feature of the situation presented is that, contrary to frequently expressed expectation, a large car surplus did not develop with the coming of 1923. Those who thought that, with the bulk of the crop movement accomplished, the periodical and seasonal surplus would develop, were badly out in their calculations.

Looking back at 1922, it is scarcely to be wondered at that the car surplus

railways now own, and those they have on order, will have to make an unprecedented number of car miles per day to meet the country's transportation needs. Either that, or there will have to be more cars.

Railways' Department's Estimates for 1923-4.

The estimates for the year ending March 31, 1924, submitted in the House of Commons recently, contain the following items:

Chargeable to Capital.

To provide for purchase of Moncton & Buctouche Ry., revote \$70,000; interest estimated, from date of taking possession to March 31, 1924, not exceeding (including revote, \$21,125), \$23,625. Total\$93,625
To pay claim of Fortin & Moffat (National Transcontinental Ry.).....\$5,390
Hudson Bay Ry. Port Nelson terminals\$40,000

Chargeable to Income

To supplement pension allowances pay-

able under Intercolonial and Prince Edward Island Ry. Employees' Provident Fund Act so as to make the minimum payment, during the current fiscal year, of \$30 a month, instead of \$20, as fixed by the Act.....\$50,000
Arbitration and awards and costs of litigation\$2,000
Board of Railway Commissioners, maintenance and operation of.....\$228,969
Canada Highways Commission: To provide for organization and payment of staff, including A. W. Campbell, Chief Commissioner of Highways, at \$5,000 a year, and W. R. Smythe, Commissioner of Highways, at \$4,000....\$70,000
Governor General's cars: Attendance, repairs and alterations.....\$10,000
Miscellaneous works, not provided for\$2,000
Printing and stationery: outside service\$7,000
Surveys and inspections, railways, including salaries and expenses of experts employed temporarily.....\$55,000
Amount not exceeding \$73,000,000 to meet expenditures made or indebtedness incurred (where amounts available from net operating earnings may be insufficient) by or on behalf of the Canadian National Ry. Co., or any company specified in the first schedule to the act incorporating the Canadian National Ry. Co., chap. 13, Statutes of Canada, 1919, or by the company in respect of any railways, properties or works entrusted to the company from time to time under the provisions of sec. 11 of the said act, or by or on behalf of any company specified or referred to in chap. 13 of the Statutes of 1920; or any one or more of them, on any of the following accounts:—
Operating deficits whenever incurred or ascertained; acquisition of property, materials and supplies; interest and sinking funds on notes, securities or obligations; principal and interest of maturing or matured loans secured or unsecured; construction and betterments; co-ordination or consolidation of railway lines and facilities; guarantees of securities. The amount herein authorized may be applied from time to time, in the discretion of the Governor in council:—To meet expenditures made or indebtedness incurred by the company in respect of railways, properties and works entrusted to the company as aforesaid. By way of loans in cash, or by way of guarantee, or partly one way and partly the other, subject, however, as follows:—If by way of loans, the amount or amounts advanced shall be repayable on demand, with interest at the rate fixed by the Governor in council, from time to time, payable half-yearly, secured if and when directed by the Governor in council by mortgage or mortgages upon such properties, in such form and containing such terms and conditions, not inconsistent herewith, as the Governor in council may approve. If by way of guarantee, any such guarantee may be of the principal and interest of the notes and obligations or securities of one or more of the said companies specified by the Governor in council, and may be signed by the Minister of Finance, in such form and on such terms and conditions as the Governor in council may determine to be appropriate and applicable thereto\$73,000,000
Salaries of Board of Railway Commissioners authorized by statute.....\$58,500
Chargeable to Collection of Revenue.
Staff and repairs.....\$2,232,000

Sir Henry Thornton's Contract with Dominion Government.

In response to a motion by the leader of the Opposition, Mr. Meighen, acting Minister of Railways Graham submitted in the House of Commons recently, a copy as follows: "An agreement made at Ottawa, Ont., Oct. 4, 1922, between His Majesty The King, on behalf of the Dominion of Canada, herein represented by the acting Minister of Railways and Canals (hereinafter called 'His Majesty'), of the first part; and Major General Sir Henry Worth Thornton, K.B.E. (hereinafter called the 'Managing Head'), of the second part. Whereas His Majesty in the right of the Dominion of Canada has acquired control of the Canadian Northern Ry. Co., of the Grand Trunk Ry. Co. of Canada, and of the various constituent and subsidiary companies comprising the systems of these respective railway companies, and also controls the Canadian Government Merchant Marine Ltd., operating various steamships owned by individual companies, and it is expedient to provide for the operation of the companies aforesaid, together with the Canadian Government Rys. as a national system, or enterprise, under one management, as outlined and provided for in the act to incorporate the Canadian National Railway Company, being chap. 13 of the Statutes of 1919, or any amendments hereafter made to such act, and, to that end, to appoint an officer who shall be the Managing Head of the enterprise, as may from time to time during the period hereafter specified be constituted and existing. Witnesseth that the parties have agreed as follows:

"Engagement.—His Majesty hereby agrees to employ, or cause to be employed, the Managing Head to serve, and the Managing Head hereby agrees to serve, as the directing head of the railways, works, steamships, undertakings and enterprise above referred to, together with such other works and undertakings as may from time to time be owned or controlled by His Majesty, and may by order in council be placed under the same management, but excepting any works or undertakings which may at any time be withdrawn by His Majesty by order in council from any such management.

"The Period of the engagement hereby entered into shall extend for three years from Oct. 4, 1922, subject to earlier termination, as hereinafter specified.

"The Remuneration of the Managing Head shall be a fixed annual salary, irrespective of the magnitude or extent of the work or duties to be performed from time to time and without any extra fees or remuneration of any description, of \$50,000 a year, payable in equal monthly instalments on or about the first day of each month, but not in advance; such remuneration, however, to be subject to adjustment at any time by mutual agreement of the parties hereto.

"Exclusive Services.—During the continuance of his employment, the Managing Head shall devote his whole time exclusively to his duties as herein provided, or as from time to time specified by the Governor in council, or by the board of directors of the various companies owning or controlling the properties referred to in this agreement.

"General Duties.—The said Managing Head shall diligently and faithfully perform, to the best of his skill and ability, all the duties that may devolve upon him by virtue of this agreement, and shall use all reasonable means to preserve and extend the interests entrusted to him.

"Presiding Officer.—His Majesty will arrange that the Managing Head shall, subject to all applicable bylaws, rules or regulations, statutory or otherwise, be the presiding officer, when present, at all meetings of the board of directors of the principal companies referred to in this agreement.

"Expenses.—The Managing Head shall, subject to the said bylaws, rules and regulations, be entitled to be paid all reasonable out of pocket expenses incurred in connection with the duties of his office.

"Termination of Agreement.—In case either party hereto desires to terminate this agreement, he may do so upon giving 6 months notice, and in such event the other party shall be entitled to such compensation on account of said termination as may be mutually agreed upon, or, failing agreement, as may be determined by three arbitrators, one to be appointed by each party, and the third by the two so appointed; but, upon their failure to agree, then such third arbitrator shall be appointed by the Chief Justice of the Supreme Court of Canada.

"Restraints.—The Managing Head shall not, directly or indirectly, hold any stock, share or interest in, nor become a director, partner, or other officer in any company or firm from or with which on behalf of the enterprise or any part thereof: any materials, supplies or other commodities whatsoever are purchased or acquired; or any contract for any work or services is entered into; nor shall he permit any such materials, supplies or other commodities to be purchased, or acquired, from, nor any contract to be entered into, with, any such company or firm while the conditions above prohibited exist."

This agreement was signed by Hon. G. P. Graham, acting Minister of Railways and Canals; J. W. Fensley, Secretary, Railway and Canals Department, and Sir H. W. Thornton; the witness being Major G. A. Bell, Deputy Minister of Railways and Canals.

Daylight Saving and the Railways.

The Railway Association of Canada sent the following letter to the newspapers recently: "May we request the influence of your valuable publication toward obtaining—among those municipalities that may adopt daylight saving hours this summer—uniform dates for beginning and ending the period of changed time? You are aware of course that the railways take no part in any dispute as to the merits or demerits of daylight saving, and have no interest in influencing any community for or against it. Where daylight saving is likely to be adopted, however, they respectfully urge that it be made effective from midnight, commencing the Sunday nearest to May 1 (April 29, this year) to midnight commencing the Sunday nearest Oct. 1 (Sept. 30 this year). These are the dates on which, as long experience has taught the railways, the nation wide changes from winter to summer train schedules, and back again, are best made. These approximate the beginning and end of summer about as closely as can be devised. They are easily fixed in memory. By becoming effective on Sunday, they interfere with less business than would be the case on other days. By making daylight saving effective over the same period as the summer train

schedules, confusion and inconvenience will be saved to travellers and the work of railway employes will be simplified. The necessary earlier arrival of summer trains will then coincide from the first with the earlier business hours of the municipality which may have adopted daylight saving. The reversion to winter schedules in the autumn will then coincide with the reversion to winter hours of work. The suburban dweller or the long distance traveller will both be better accommodated. May we ask that your influence be directed toward obtaining this desirable end?"

C. P. Riddell, General Secretary, Railway Association of Canada, is reported to have stated in an interview on March 10, that Ottawa was the only city that approved of daylight saving, although the matter was being discussed in a number of other places. In the absence of definite advice, the railways would proceed to make the schedules for summer trains on the assumption that daylight saving would not be adopted generally. Subsequently, the Westmount, Que., City Council adopted it, and on March 15, Montreal City Council, by 23 to 13, decided not to adopt it unless the Dominion Parliament should make its adoption general. Manufacturing and other interests immediately took action and a deputation waited on the council's executive council March 20, asking for the rescinding of the resolution and the adoption of one putting daylight saving into effect.

Quebec City Council, on March 17, postponed further consideration of the matter to March 22 on a number of petitions favorable to the new time being presented. The Toronto City Council, on March 19, voted unanimously to adopt daylight saving from May 13 to Sept. 9.

While the object aimed at by the Railway Association of Canada in its letter given above, has not been achieved, it is said that suburban trains serving cities which adopt the new time, will be changed so as to run an hour earlier, as was done in previous years.

Grain Inspected at Western Points.

The Dominion Bureau of Statistics, Internal Trade Branch, reports the number of cars inspected at Winnipeg and other points on the Western Division, for February, and for 6 months ended Feb. 1923 and 1922, as follows:—

	Feb. 1923	6 mons. to Feb. 28, 1923	6 mons. to Feb. 28, 1922
C.N.R.	3,138	97,927	83,563
C.P.R.	3,055	118,243	82,934
G.N.R.	43	1,515	770
Total	6,326	217,685	167,267

The total of cars inspected for the 1922-23 season to date of report was 217,685, which is the highest reached in any previous complete year, the previous highest being 209,637 in 1915-16.

Intercolonial Railway Earnings.—Senator McCormick, Sydney Mines, N.S., enquired in the Senate recently: "What were the earnings of the Intercolonial Ry. eastern division, between New Glasgow and Sydney, or between Truro and Sydney, for 1918, 1919, 1920, 1921 and 1922, giving amounts received in each year from freight and passenger traffic?" Senator Dandurand replied: "Railway accounting methods do not provide this information by divisions. Information, therefore, is not available."

The American Railway Association, Division 6, Purchases and Stores, will hold its annual meeting at Chicago, Ill., May 15 to 17, for consideration of committees' reports and discussion of papers.

Brotherhood of Locomotive Engineers Declared an Illegal Organization.

Mr. Justice Galt, of the Manitoba Court of King's Bench, on March 10 decided, in effect, that the Brotherhood of Locomotive Engineers is an illegal organization, operating in restraint of trade. The brotherhood had taken action to recover funds alleged to have been unaccounted for by Samuel Starr, Secretary-Treasurer, at the time of his enforced resignation. The case came to trial in Dec. 1922, and progressed until Jan. 15, when Starr's counsel sought to amend the statement of defence, and moved for a non-suit on the ground that the organization is illegal, which the judge granted. The decision was based on the fact that the brotherhood had not registered as a trade union, under the Trade Unions Act, and in his decision, based on a case in England, for want of a precedent in Canada, the judge said: "I cannot resist the conclusion that the provisions in the legislation and ritual of the plaintiffs relating to strikes are open, under our Canadian law, to the same objection as were the rules of the respondent Russell vs. Amalgamated Society of Carpenters. They are in direct restraint of trade, and render the plaintiffs an unlawful trade union, to the extent of preventing them from enforcing rights in a court of law. It is unnecessary to decide whether, to what extent, they could have enforced their claim against the defendant if they had registered their organization under the Trade Unions Act."

The Trade Unions Act apparently assumes that any labor organization is a combination in restraint of trade and that legality is conferred upon it only as a special privilege, and then only when the clause requiring registration has been complied with. It provides as follows:—"In this act . . . trade union means such combination, whether temporary or permanent, for regulating the relations between workmen and masters, or for imposing restrictive conditions on the conduct of any trade or business, as would, but for this act, have been deemed to be an unlawful combination by reason of some one or more of its purposes being in restraint of trade. . . . This act shall not apply to any trade union not registered under this act. . . . The trustees of any trade union under this act. . . may bring or defend, or cause to be brought or defended, any action, suit, prosecution or complaint, in any court of competent jurisdiction. . . ."

J. G. O'Donoghue, a Toronto lawyer specializing in labor organization matters, is reported to have stated that, in view of Justice Galt's decision, very few Canadian labor organizations are endowed with legality. This, of course, does not mean that they are in danger of being prevented from continuing to function, for the criminal code, which prohibits combinations in restraint of trade, specifically exempts labor unions, but it does mean that, unless unregistered unions register in compliance with the act, they cannot be successful in any legal action. Mr. O'Donoghue brought up this point two years ago when a hoisting engineers' union wanted to sue the Toronto Building Trades' Council; he pointed out to the union officials that if they went to court they would be non-suited, and as a result the case was dropped.

As a natural consequence of Justice

Galt's decision, trade unions which have not registered under the act have become apprehensive for their funds, a large part of which are invested in Canadian industries and securities, and H. B. Chase, General Chairman of the B. of L.E. for Canadian National Rys. lines, is reported to have stated that if the decision is upheld it will be necessary to remove all the brotherhood funds to the United States. Officers of other unregistered trade unions are reported to have made similar statements. The Canadian Brotherhood of Railway Employees has no worry in this connection, for, according to A. R. Mosher, President, it registered under the act some time ago. It is probable that a lot of the unregistered trade unions' officers' worry is needless, however; as, when asked if the decision means that any unprincipled person with union funds in his possession could get away with them, Mr. O'Donoghue stated that he could be proceeded against criminally, so there does not seem to be much likelihood of a series of raids on trade union treasuries materializing as a result of the decision. The future in the matter is uncertain. Apparently a good many of the trade unions have hesitated to register for fear that by so doing they would become more vulnerable in law suits, less powerful, and more restricted in their activities. Tom Moore, President of the Trades and Labor Congress of Canada, is reported to have stated that organized labor is definitely opposed to registration. Mr. Chase is reported to have stated that the decision will be appealed to the Manitoba Court of Appeals, and other labor leaders are reported to have said that the case will be carried to the British Privy Council if necessary. It is possible that the Dominion Parliament will be asked to amend the act by striking out the clause requiring registration, or to define explicitly how union status is affected by registration.

Transportation Events of Twenty-five Years Ago.

From Railway and Shipping World, new Canadian Railway and Marine World, for April, 1898.

Three dining cars placed on Intercolonial Ry.

Pontiac Pacific Jct. Ry. trains lit with acetylene gas.

C.P.R. building 12 steamboats for Stikine River trade.

Contract let for building Midland Ry. from Windsor to Truro, N.S.

A. H. Harris appointed General Traffic Manager, Canadian Government Rys., Moncton, N.B.

Restigouche & Western Ry. completed arrangements for building first 20 miles.

G. McL. Brown, Executive Agent, C.P.R., for British Columbia, makes Victoria his headquarters.

C.P.R. equips sleeping car, on Montreal-Toronto run, with electric light generated from axle.

J. A. Richardson appointed District Passenger Agent, Wabash Rd., with offices at Toronto and St. Thomas.

Prof. McLeod, of McGill University, given charge of time transmission over G.T.R. wires, also over company's clocks and employees' watches.

Canada Atlantic Ry. appointments at

Ottawa:—C. J. Smith, General Traffic Manager; M. Donaldson, General Superintendent; W. P. Hinton, Assistant General Freight Agent; J. E. Walsh, Assistant General Passenger Agent; J. Ogilvie, Superintendent, Motive Power.

Manager Thos. Tait, of Eastern Lines, C.P.R., gave notice that the company would not accept any car, to be hauled in passenger trains east of Fort William, unless equipped with M.C.B. vertical plane couplers, steel tired wheels and Westinghouse automatic air brake and train signal, interchangeable therewith respectively, and, during cold weather, unless equipped for steam heating.

Grand Trunk Ry. report, for six months ended Dec. 31, 1897, showed a surplus of \$275,263, and stated company free from debt for first time since 1890. Directors expressed regret that amicable arrangements with C.P.R. had been interrupted, the latter declining to agree with its U.S. competitors and the G.T.R. on equal passenger fares to and from western points. President Sir C. Rivers Wilson stated, at annual meeting, he did not believe Sir William Van Horne was serious in threatening to build a line from Toronto to North Bay.

The C.P.R. Co.'s report showed a very successful year in 1897, the company paying 4% dividend and carrying forward \$897,088 surplus to reserve. The ratio of working expenses to receipts had been reduced to 57%. The use of heavier locomotives had had a marked effect on costs of transportation. At the annual meeting, Sir William Van Horne said the G.T.R. and other lines had violated the agreement as to differential passenger rates to the Pacific coast, and the C.P.R. had published an open tariff, making such rates as the law provides and the C.P.R. interests seem to require. He alleged that the G.T.R.'s cancellation of the North Bay agreement was the result of an understanding with U.S. lines, and was intended to place the C.P.R. at a disadvantage.

Railway Accidents Throughout Canada. The total number of accidents on railways throughout Canada reported to the Board of Railway Commissioners for January and February was 464, in which 3 passengers, 19 employees and 15 others were killed, and 70 passengers, 415 employees and 41 others were injured. In "others" are included 21 highway crossing accidents, in which 4 persons were killed, and 23 injured. Crossings were unprotected in 15 of these cases, and in the others were protected in 4 cases by bells, 1 by a gate, and 1 by a watchman; automobiles were concerned in 8 of these accidents, resulting in 1 person being killed and 12 injured; other vehicles were concerned in 6, pedestrians in 5, and children coasting down hill on sleds and playing on tracks, 2.

Grand Trunk Railway Arbitration Fees.—Acting Minister of Railways Graham stated in the House of Commons, recently, in answer to a letter by D. F. Kellner, Edmonton East, Alta., that the following amounts were paid the arbitrators on the value of the G.T.R. and subsidiary companies' junior securities: Sir Thomas White, \$29,000; Sir Walter Cassels, in addition to amount paid by G.T.R., \$25,000. Hon. W. H. Taft was paid by the G.T.R. shareholders.

Canadian Railway Club.—G. Bulkeley, A.M.I.Mech.E., of the General Manager's staff, Great Western Ry. of England, read a paper before the Club on March 13, on "Can the 2-8-0 (or 4-8-0) locomotive be further developed?"

Mainly About Railway People Throughout Canada.

Other Mainly About Railway People is given on earlier pages of this issue.

R. B. Angus, a former C.P.R. director, who died at Montreal in Sept., 1922, left an estate of approximately \$4,000,000, on which succession duties amounting to \$257,000 have been paid to the Quebec Government.

Walter U. Appleton, who has been appointed General Superintendent, Atlantic Region, Canadian National Rys., Moncton, N.B., was born there, Jan. 29, 1878, and entered railway service Oct. 12, 1890, since when he has been, to Sept. 1895, junior clerk, Intercolonial Ry., Moncton; Sept. 1895 to May 1899, machinist apprentice, same road; 1900, clerk; 1901 to 1903, machinist; 1905 to 1909, chief clerk to Superintendent of Motive Power; 1909 to 1913, Assistant to Superintendent of Motive Power; 1913 to Feb. 1918, General Master Mechanic; Feb. to Dec. 1918, Superintendent of Motive Power, Canadian Government Rys., all at Moncton; Dec. 1918 to Sept. 15, 1920, Mechanical Superintendent, Eastern Lines, Canadian National Rys., Moncton; Sept. 15, 1920, to Feb. 28, 1923, General Superintendent of Rolling Stock, Eastern Lines, Canadian National Rys., Moncton, N.B.

George Turnbull Bell, who has been appointed Executive Assistant to Vice President of Traffic, Canadian National Rys., Montreal, was born there Sept. 7, 1861, and entered railway service in 1878, since when he has been consecutively, to Nov. 1880, clerk, car mileage office, Great Western Ry.; Nov. 1880 to Nov. 1882, stenographer, General Passenger Agent and Rate Clerk's Office, same road; Nov. 1882 to Jan. 1, 1884, Chief Clerk, Assistant Passenger Agent's Office, G.T.R.; Jan. 1, 1884, to Apr. 25, 1892, Chief Clerk, General Passenger Agent's Office, same road; Apr. 25, 1892, to Apr. 1896, Assistant General Passenger Agent, same road, Montreal; Apr. 1896 to Aug. 1899, Assistant General Passenger and Ticket Agent, same road, Montreal; Aug. 1899 to May 1900, First Assistant General Passenger and Ticket Agent, same road, Chicago, Ill.; May 1900 to Aug. 1908, General Passenger and Ticket Agent, same road, Montreal; Aug. 1908 to Apr. 1909, General Passenger and Ticket Agent, G.T.R., and G.T.P.R., Montreal; Apr. 1909 to May 1913, Assistant Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal; May 1913 to March 9, 1923, Passenger Traffic Manager, G.T.R., and to March 1919, also Passenger Traffic Manager, G.T.P.R., Montreal.

Major F. L. C. Bond, who has been appointed Regional Chief Engineer, Central Region, Canadian National Rys., Toronto, was born at Montreal in 1877, and educated at Montreal High School, Collegiate Institute and McGill University, graduating in 1898, when he entered G.T.R. service, since when he has been, to 1901, Assistant Resident Engineer, Eastern Division; 1901 to 1902, engineer in charge of double track construction; 1902, night superintendent on construction of the Park Ave. tunnel, New York; 1902 to 1913, Resident Engineer, Eastern Division, G.T.R.; 1913 to 1916, when he went overseas, Division Engineer, G.T.R., Montreal; Dec. 1918 to Feb. 19, 1923, Chief Engineer, G.T.R., Montreal.

C. G. Bowker, who has been appointed General Manager, Central Region, Canadian National Rys., Toronto, was born at

Medford, N.J., Apr. 21, 1871, and entered railway service in May, 1888, since when he has been, to Oct. 1890, operator, Philadelphia & Reading Rd.; Oct. 1890 to 1893, operator, New England Division, same road; 1893 to 1897, in charge of telegraph lines and electrical service,



G. T. Bell,
Executive Assistant to Vice President of Traffic,
Canadian National Railways.



H. R. Charlton,
Manager, Advertising Bureau, Canadian National
Railways.

Buffalo Division, Lehigh Valley Rd., Buffalo, N.Y.; May 1900 to Feb. 1902, train dispatcher, G.T.R., London, Ont.; Feb. 1902 to Nov. 1905, train dispatcher, G.T.R., Durand, Mich.; Nov. 1905 to May 1907, Chief Train Dispatcher, G.T.R., Stratford, Ont.; May 1907 to Sept. 1909, Trainmaster, G.T.R., Stratford, Ont.;

Sept. 1909 to May 13, 1911, Joint Superintendent, G.T.R., and Wabash Rd., St. Thomas, Ont.; May 13, 1911, to Jan. 1913, Superintendent Middle Division, G.T.R., London, Ont.; Jan. 1913 to May 1, 1918, General Superintendent, Eastern Lines, G.T.R., Montreal; May 1, 1918, to Oct. 10, 1922, General Superintendent, Ontario Lines, G.T.R., Toronto; Oct. 10, 1922, to Feb. 19, 1923, Operating Manager, lines east of Detroit and St. Clair Rivers, G.T.R., Montreal.

H. W. Brodie, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, who has been granted three months leave of absence, owing to illness, has gone on a trip from Vancouver to Australia, accompanied by Mrs. Brodie.

Charles Edward Brooks, who has been appointed Chief of Motive Power, Canadian National Rys., Montreal, was born at Constantinople, Turkey, July 3, 1886, and entered railway service in 1905, since when he has been, to 1908, apprentice, G.T.R., Montreal, 1908 to 1914, machinist, draftsman and Locomotive Foreman, Grand Trunk Pacific Ry., successively, Portage la Prairie and Rivers, Man., Watrous and Regina, Sask., Wainwright and Edmonton, Alta.; 1914 to May 1915, General Foreman, G.T.P.R., Transcona, Man.; May 1915 to Oct. 1, 1920, Superintendent of Motive Power, G.T.P.R., Transcona, Man.; Oct. 1, 1920, to Feb. 19, 1923, Mechanical Assistant, Locomotive Department, to Vice President, Operation and Maintenance, Canadian National Rys., Toronto.

Collingwood B. Brown, who has been appointed Chief Engineer, Operating Department, Canadian National Rys., Montreal, was born at Ithaca, N.Y., Aug. 27, 1879, and graduated from Cornell University. In the summer of 1898 he was an assistant on U.S. geological survey work in New York, and in the following summer acted as topographer and instrument man on survey for the New York State College of Forestry. He entered C.P.R. service in 1901, since when he has been, draftsman and rodman, Trail, B.C.; 1902, Assistant Engineer, Bridge Department, Montreal; Assistant Engineer in charge of erection of Red River bridge, Winnipeg, and also of the construction of the annexes to the elevators at Fort William, Ont.; 1902 to 1904, Resident Engineer, District 2, Ontario Division, London; and Resident Engineer, Toronto Terminals; 1904 to 1906, Assistant Division Engineer, Western Division, Calgary, Alta.; 1906 to 1908, Division Engineer, Atlantic Division, St. John, N.B.; 1908 to 1912, Division Engineer, Eastern Division, Montreal; 1912 to July 1913, Principal Assistant Engineer, Eastern Lines, Montreal; July 1913 to Oct. 1920, Chief Engineer, Canadian Government Rys., Moncton, N.B.; Oct. 1920 to Feb. 19, 1923, Engineering Assistant to Vice President, Operation and Maintenance, Canadian National Rys., Toronto.

Sir George McLaren Brown, European General Manager, C.P.R., London, made a tour of inspection of the company's agencies throughout Europe recently, except Germany, as he found the railway service too disorganized by the French occupation of the Ruhr district to go there. Among others, he met the Italian and Hungarian premiers, and also the Hungarian Governor, Admiral von Horthy.

Lady Brown, wife of Sir George McLaren Brown, European General Man-

ager, C.P.R., who spent part of the winter with her sister, Mrs. C. E. Neill, in Montreal, has returned to England.

Lafayette S. Brown, who has been appointed General Manager, Atlantic Region, Canadian National Rys., Moncton, N.B., was born at Nelson, N.B., Oct. 19, 1863, and entered Intercolonial Ry. service Dec. 1880, since when he has been, to Dec. 20, 1881, cleaning locomotives, and machinist helper, Newcastle, N.B.; Dec. 20, 1881, to Sept. 5, 1882, shunting in Newcastle yard and learning telegraphy; Sept. 5, 1882, to Nov. 25, 1883, assistant agent, Newcastle, N.B.; Nov. 26, 1883, to Oct. 4, 1898, train dispatcher, Moncton and Ste. Flavie District, Campbellton, N.B.; Oct. 4, 1898, to April 30, 1912, Chief Dispatcher, New Glasgow, N.S.; May 1, 1912, to July 31, 1913, Assistant Superintendent, Moncton and Ste. Flavie and Fredericton to Loggieville, N.B., Newcastle, N.B.; Aug. 1, 1913, to June 1, 1917, Superintendent, Truro, Sydney and Oxford District, I.R.C., afterwards District 4, Intercolonial Division, Canadian Government Rys., New Glasgow, N.S.; June 1 to Sept. 17, 1917, Assistant General Superintendent, Eastern Lines, Canadian Government Rys., Moncton, N.B.; Sept. 17, 1917, to Dec. 1918, General Superintendent, Eastern Lines, Canadian Government Rys., Moncton, N.B.; Dec. 1918 to Dec. 1, 1920, General Superintendent, Maritime District, Eastern Lines, Canadian National Rys., Moncton, N.B.; Dec. 1, 1920, to Feb. 19, 1923, Assistant General Manager, Eastern Lines, Canadian National Rys., Montreal.

A. C. Bryson, who died at Winnipeg, March 3, was head of A. C. Bryson & Son, railway contractors.

Sir Walter Cassels, who was chairman of the arbitration board which enquired into the value of certain G.T.R. stock in connection with the taking over of the company by the Dominion Government recently, died at Ottawa, March 1, aged 77. He was President of the Exchequer Court of Canada, and during his long career, he did considerable legal work for the C.P.R. and the Dominion Government.

H. R. Charlton, who has been appointed Manager, Advertising Bureau, Canadian National Rys., Montreal, was born Feb. 6, 1866, and after engaging for three years in newspaper work at St. John's, Que., was on railway survey work in 1883 and 1884, on the Waterloo and Magog Ry. He was in commercial business employment in St. John's, Que., until 1887, when from Feb. to June he travelled with the C.P.R. exhibition car, and after four years of newspaper work was given charge of the C.P.R. advertising department in April, 1891, remaining there until April, 1896, when he again went into business employment. From Jan., 1898, to March 9, 1923, he was General Advertising Agent, G.T.R., and to March, 1919, also General Advertising Agent, G.T.P.R., Montreal.

David Crombie, who has been appointed Chief of Transportation, Canadian National Rys., Montreal, was born at Hamilton, Ont., May 13, 1864, and entered railway service in June, 1882, since when he has been, to 1887, telegraph operator, G.T.R.; 1887 to 1889, ticket agent, same road, Chatham, Ont.; 1889 to 1890, dispatcher, same road, London, Ont.; 1890 to 1892, dispatcher, Flint and Pere Marquette Rd., Saginaw, Mich.; 1892 to 1894, car distributor, same road; 1894 to Jan. 1, 1900, Superintendent of Car Service, same road; Jan. 1 to July

1900, Superintendent of Car Service, Pere Marquette Rd., Detroit, Mich.; July 1900 to 1903, Superintendent of Transportation, same road; 1903 to Feb. 1907, in private business; Feb. to Oct. 1907, Master of Transportation, Middle Division, G.T.R., London, Ont.; Oct. 1907 to



W. R. Davidson,
General Superintendent, Montreal District, Central
Region, Canadian National Railways.



W. R. Devenish,
General Superintendent, Northern Ontario District,
Central Region, Canadian National Railways.

Nov. 22, 1910, Assistant to General Transportation Manager, same road, Montreal; Nov. 22, 1910, to Jan. 14, 1913, Assistant to Vice President, Transportation, Maintenance and Construction,

same road, Montreal; Jan. 14 to Aug. 1, 1913, General Superintendent of Transportation, same road, Montreal; Aug. 1, 1913 to May 1914, Inspector of Transportation, Pere Marquette Rd., Detroit, Mich.; May, 1914, to Nov., 1916, Inspector of Transportation, Canadian Northern Ry., Toronto; Nov. 1916 to Nov. 1, 1920, General Superintendent, Ontario District, Canadian National Rys., Toronto; Nov. 1, 1920, to Feb. 19, 1923, Transportation Assistant to Vice President, Operation and Maintenance, Canadian National Rys., Toronto.

J. E. Dalrymple who has been appointed Vice President in charge of Traffic, Canadian National Rys., Montreal, was born there Jan. 1, 1869, and entered G.T.R. service July 1, 1883, since when he has been, to 1890, in various capacities in the Treasurer's office, Montreal; Apr. 1, 1890, to Feb. 1, 1896, secretary to Traffic Manager, Chicago, Ill.; Feb. 1, 1896, to May 1, 1899, secretary to General Traffic Manager, Montreal; May 1 to Aug. 1, 1899, Division Freight Agent, Hamilton, Ont.; Aug. 1, 1899, to May 1, 1900, Division Freight Agent, Detroit, Mich., Manager, G. T. Despatch Fast Freight; May 1, 1900 to 1902, General Freight Agent, Central Vermont Ry.; 1902 to 1903, Assistant to General Manager, G. T. R., Montreal; 1903 to Aug. 14, 1905, General Freight Agent, Central Vermont Ry.; Aug. 14, 1905, to Apr. 1908, General Freight Agent, G. T. R., Montreal; Apr. 1908, to Oct. 2, 1911, Assistant Freight Traffic Manager, G. T. P. R. Winnipeg; Oct. 2, 1911 to Feb. 26, 1923, Vice President, Traffic, G.T.R., and from Oct. 2, 1911 to March 7, 1919, also Vice President, Traffic, Grand Trunk Pacific Ry., Montreal.

W. R. Davidson, who has been appointed General Superintendent, Montreal District, Central Region, Canadian National Rys., Montreal, was born at Everton, Mo., Nov. 8, 1871, and entered railway service in Jan. 1890, since when he has been, to July 1901, operator, Missouri Pacific Ry., at various points; July 1901 to March 1904, dispatcher, same road, Wichita, Kan.; Mar. to Oct. 1904, Chief Dispatcher, same road, Wichita, Kan.; Oct. 1904 to Mar. 1911, Trainmaster, same road, Wichita, Kan.; Mar. 1911 to Feb. 1913, Trainmaster, G.T.R., London, Ont.; Feb. 1913 to Mar. 1916, Superintendent, G.T.R., London, Ont.; Mar. 1916 to Sept. 1917, Superintendent, G.T.R., Detroit, Mich.; Sept. 1917 to May 1, 1918, General Superintendent, Western Lines, G.T.R., Chicago, Ill.; May 1, 1918, to Mar. 1, 1920, General Superintendent, Eastern Lines, G.T.R., Montreal; Mar. 1, 1920, to Oct. 10, 1922, General Superintendent, Western Lines, G.T.R., Chicago, Ill.; Oct. 10, 1922, to Feb. 28, 1923, General Superintendent, Eastern Lines, G.T.R., Montreal.

F. R. Diamond, of Canadian Bronze, Ltd., and Mrs. Diamond, left Montreal early in March, to spend about three weeks at French Lick, Indiana.

W. Roberts Devenish, who has been appointed General Superintendent, Northern Ontario District, Central Region, Canadian National Rys., Toronto, was born in County Tipperary, Ireland, Nov. 21, 1882, and entered transportation service in 1903, serving with the C.P.R. for eight years in various capacities in the Engineering and Maintenance of Way Departments, from rodman to Assistant Division Engineer, Lake Superior Division. He was appointed Division Engineer, Intercolonial Ry., Moncton,

N.B., in Sept. 1913, and for a time prior to that he acted as Assistant Engineer with the National Transcontinental Ry. Investigating Commission. From Nov. 1915 to Aug. 31, 1916, he was Superintendent, District 2, I.R.C., Campbellton, N.B.; Aug. 31, 1916, to Dec. 1, 1920, Superintendent, District 3, Intercolonial Division, Canadian Government Rys., Moncton, N.B.; Dec. 1, 1920, to Feb. 28, 1923, General Superintendent, Ontario District, Canadian National Rys., Toronto.

N. S. Dunlop, at one time Tax and Insurance Commissioner, and head of the Floral Department, C.P.R., Montreal, who died there June 2, 1922, left an estate valued at \$303,966, which, after providing for a few family bequests, goes to his widow.

Mrs. Duval, widow of J. E. Duval, formerly General Superintendent of Car Service, G.T.R., and Miss Gladys Duval, of Montreal, are spending some time in Boston, Mass.

Mrs. Fauquier, widow of E. F. Fauquier of Fauquier Bros., railway contractors, has left Ottawa to spend some time in Europe.

Robert H. Fish, who has been appointed General Superintendent, Southwestern Ontario District, Central Region, Canadian National Rys., Toronto, was born at Oakville, Ont., June 12, 1873, and entered G.T.R. service March 28, 1891, since when he has been, to Dec. 9, 1891, on construction work, Toronto; Dec. 9, 1891, to Dec. 1, 1893, in motive power shops, Toronto; Dec. 1, 1893, to Jan. 29, 1900, locomotive fireman, Toronto; Jan. 29, 1900, to Oct. 1, 1908, locomotive man, Toronto; Oct. 1, 1908, to Jan. 22, 1913, Road Foreman, Locomotives, London, Ont.; Jan. 22, 1913, to Nov. 1, 1916, Trainmaster, Brantford, Ont.; Nov. 1, 1916, to March 1, 1920, Superintendent, Stratford, Ont.; March 1, 1920, to Oct. 10, 1922, General Superintendent, Eastern Lines, Montreal; Oct. 1922 to Feb. 28, 1923, General Superintendent, Ontario Lines, G.T.R., Toronto.

D. E. Galloway, who has been appointed Chief Assistant to President, Canadian National Rys., Montreal, was born at Crief, Ont., Aug. 31, 1882, and entered G.T.R. service Feb. 1, 1901, since when he has been, to Nov. 1901, in Claims Department, Hamilton, Ont.; Nov. 1901 to Sept. 21, 1904, in Claims Department and General Freight Department, Montreal; Sept. 21, 1904, to Jan. 7, 1910, secretary to Second Vice President and General Manager, G.T.R., Montreal; Jan. 7, 1910, to Oct. 2, 1911, secretary to President, G.T.R. and G.T.P.R., Montreal; Oct. 1911 to Oct. 1922, Assistant to President, G.T.R., Montreal; Oct. 1922 to March 14, 1923, Assistant Vice President, G.T.R., Montreal.

R. P. Gough, one of the Canadian National Rys.' directors, Mrs. and Miss Marion Gough, left Toronto early in March for a visit to South Carolina.

Frederick Passmore Gutelius, who has been appointed Resident Vice President, Delaware & Hudson Co., Montreal, was born at Mifflinburg, Pa., Dec. 21, 1864, and graduated from Lafayette College as civil engineer in 1887. He entered railway service in 1888, since when he has been, to 1892, Assistant Engineer and Assistant Supervisor, Pennsylvania Rd., Pittsburgh, Pa.; 1885 to 1898, General Superintendent, Columbia & Western Ry.; 1898 to 1900, Superintendent, C.P.R., Nelson, B.C.; 1900 to 1902, in various positions in Engineering Department,

C.P.R.; 1902 to Mar. 1906, Engineer, Maintenance of Way, C.P.R., Montreal; Mar. 1906 to Sept. 15, 1908, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; Sept. 15, 1908, to Dec. 30, 1910, General Superintendent, Lake Superior Division, C.P.R., North Bay, Ont.; Dec. 30, 1910, to Jan. 1913, General



R. H. Fish.
General Superintendent, Southwestern Ontario District, Central Region, Canadian National Railways.



D. E. Galloway.
Chief Assistant to President, Canadian National Railways.

Superintendent, Eastern Division, C.P.R., Montreal; Jan. 1912 to Apr. 30, 1913, one of the commissioners investigating expenditures and other matters in connection with the construction of the National Transcontinental Ry. On the

abolition of the Government Railways Managing Board in May, 1913, he was appointed General Manager, Canadian Government Railways, with all powers usually vested in the executive of railway corporations, reporting to the Minister of Railways and Canals. He resigned in May, 1917, on his appointment as Vice President, Delaware & Hudson Co., Albany, N.Y., and on the taking over of the management of the U.S. railways by the U.S. Railroad Administration, during the war, he was appointed Federal Manager, Delaware & Hudson Rd., and on the relinquishment of that control, March 1, 1920, was appointed Vice President and General Manager of that road and its allied properties. In the latter part of 1920, he was retained by the Ontario Government Commission enquiring into the proposed hydro radial railway system.

D. B. Hanna, ex-President, Canadian National Rys., returned to Toronto early in March, with Mrs. and Miss Jean Hanna, after spending several weeks in Bermuda.

Charles A. Hayes, who has been appointed General Manager, Express Department, Canadian National Rys., Montreal, was born at West Springfield, Mass., Mar. 10, 1865, and entered railway service in 1882, since when he has been, to 1884, clerk, Freight Auditor's office, Connecticut River Rd., now Boston & Maine Rd.; 1884 to Oct. 1887, similar position, Boston & Lowell Ry., Boston, Mass.; Oct. 1887 to Nov. 1890, clerk, General Freight Agent's office, Boston & Lowell Ry., and its successor, Boston & Maine Rd.; Nov. 1890 to June 1892, General Freight and Passenger Agent, Central New England & Western Ry., Poughkeepsie, N.Y.; June to Oct. 1892, Division Freight Agent, Philadelphia & Reading Rd., while it had control of the C.N.E. & W.R., Hartford, Conn.; Oct. 1892 to June 1896, New England Agent, National Despatch Line, Boston, Mass.; June 1896 to July 1899, New England Agent and acting General Manager, National Despatch Line, Boston, Mass.; July 1899 to May 1903, Manager, National Despatch-Great Eastern Line, Buffalo, N.Y.; May 1903 to Apr. 1908, Assistant General Freight Agent, G.T.R., Chicago, Ill.; Apr. 1908 to Oct. 16, 1911, General Freight Agent, G.T.R., Montreal; Oct. 16, 1911, to June 1913, Freight Traffic Manager, G.T.R., Montreal; June 1913 to June 1, 1917, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B.; June 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, Canadian Government Railways, Moncton, N.B.; Dec. 1, 1918, to March 1, 1923, Vice President of Traffic, Canadian National Rys., Toronto.

Sir Herbert Holt, President, Royal Bank of Canada, and a C.P.R. director, returned to Montreal March 6, after a trip to Cuba.

Sidney P. Howard, who died suddenly in Montreal, March 13, was born there Dec. 30, 1866, and was a son of Capt. Thomas Howard, at one time harbor master, Montreal. He entered transportation service under the Montreal Harbor Commissioners, as clerk in the Wharfinger and Harbor Master's office, and subsequently became private secretary to the Chairman. He entered C.P.R. service Feb. 1, 1883, since when he had been, to 1886, stenographer to General Freight Agent; 1886 to 1888, chief clerk, Foreign Freight Department; 1888 to 1891, Travelling Freight Agent; 1891 to 1898, City Freight Agent, Montreal; 1898 to July, 1901, Assistant General Freight Agent; July 1901 to May 17,

1910, General Freight Agent, Eastern and Lake Superior Divisions, Montreal. He was President Canadian Freight Association in 1907. He resigned from C.P.R. service in May 1910, and entered real estate business in partnership with John Findlay, under the name of Findlay & Howard Co. Later he was Secretary-Treasurer, Montreal Drydock & Ship Repair Co., and from Feb. 1921 he was Special Agent, Traffic Department Canadian National Rys.

William A. Kingsland, who has been appointed General Manager, Central Region, Canadian National Rys., Toronto, was born at New York, N.Y., Jan. 5, 1869, and entered transportation service in 1887, since when he has been, to 1889, billing clerk, Delaware, Lackawanna & Western Ry., New York; 1889 to Oct. 26, 1900, clerk, Audit Department, New York Central Rd., New York; Oct. 26, 1900, to 1904, Auditor, Great Northern Ry. of Canada, Quebec, Que.; 1904 to Sept. 10, 1915, Auditor, Canadian Northern Quebec Ry., and also from Mar. 24, 1908, to Sept. 10, 1915, Auditor, Quebec & Lake St. John Ry., Quebec, Que.; Sept. 10, 1915, to Nov. 21, 1918, General Superintendent, Canadian Northern Ry., Montreal; Nov. 21, 1918, to Dec. 1, 1920, Assistant General Manager, Eastern Lines, Canadian National Rys., Montreal; Dec. 1, 1920, to Feb. 28, 1923, General Manager, Eastern Lines, Canadian National Rys., Montreal.

P. J. Lynch, Superintendent, Barrie Division, Ontario Lines, G.T.R., Allandale, Ont., died in Wellesley Hospital, Toronto, March 1, after a long illness. He entered G.T.R. service in 1879, and to Oct. 1, 1898, was conductor between Toronto and North Bay, Ont.; Oct. 1, 1898, to 1899, trainman, Stratford, Ont.; 1899 to 1900, trainman, Belleville, Ont.; 1900 to 1904, trainman, Stratford, Ont.; 1904 to June 1, 1910, Assistant Superintendent, Northern Division, Allandale, Ont.; June 1, 1910, to the time of his death, Superintendent, Barrie Division, Ontario Lines, Allandale, Ont. He was conductor of the train which carried the Duke of York (King George V.) and his party over the G.T.R. in 1901. The funeral, at Barrie, March 3, was attended by a number of railwaymen and others, including S. J. Hungerford, Vice President Operation and Construction; C. G. Bowker, General Manager, Central Region, and A. J. Hills, D. Crombie, C. B. Brown, G. E. Smart, C. E. Brooks, G. C. Jones, W. S. Wilson, G. A. Mitchell, D. McCooe, L. L. Grabill, C. E. Horning, R. W. Long, C. S. Proctor, F. R. Porter, G. A. Hoag, H. E. Whittenberger, C. Forrester, W. J. Piggott, and H. W. Matthews, all of Canadian National Rys.; James Clark, representing the Board of Railway Commissioners; C. O. Baker, North Bay, representing the Timiskaming & Northern Ry.; W. F. Wasley, Muskoka Lakes Navigation & Hotel Co., Gravenhurst, Ont.; F. H. McGuigan, formerly fourth Vice President, G.T.R.; U. E. Gillen, General Manager, Toronto Terminal Ry. Co.; A. L. Smith, Manager, Toronto Union Station; and Hon. E. C. Drury, Premier of Ontario. The pallbearers were W. R. Davidson, R. H. Fish, W. S. Wilson, C. Forrester, W. J. Piggott and W. E. Weegar.

Roderick J. Mackenzie, who died at Los Angeles, Cal., March 1, aged 49, was the oldest son of Sir William Mackenzie, ex-President, Canadian Northern Ry., Toronto. He was born at Kirkfield, Ont., and was educated at Ridley College, St. Catharines, Ont. He was engaged for some time under his father in the re-

building and electrifying of the Toronto Ry., and became associated with the construction firm of Mackenzie, Mann & Co., Ltd., of which he was a Vice President, and engaged in the construction of several Canadian Northern Ry. lines in the west, from the company's incep-



C. E. Friend.
Assistant General Comptroller, Canadian National Railways.



A. C. Egan,
Comptroller, Western Region, Canadian National Railways.

tion until its completion as a transcontinental railway. He later became concerned with oil properties, and continued his interest in horses, being a well known racehorse owner. The funeral took place at Kirkfield, Ont., March 11, and was

attended by numerous railway officials and former associates.

Malcolm H. MacLeod, who has retired from the position of Vice President in charge of Construction, and has been appointed Consulting Officer to the Executive, Canadian National Rys., was born in Skye, Invernesshire, Scotland, July 13, 1857. His railway record is as follows: 1877, chainman, Victoria Ry., Ont.; 1879 to 1880, rodman and leveller, Credit Valley Ry.; 1881, transitman location surveys, Ontario & Sault Ste. Marie Ry.; 1882, resident engineer, construction Toronto & Ottawa Ry.; 1883 to 1885, assistant engineer, construction Lake Superior Section C.P.R.; 1886, on location and construction C.P.R. lines east of Montreal; 1887, on construction C.P. R. Sault Ste. Marie branch; 1888 to 1889, locating engineer, and in charge of construction, Windsor Division, C.P.R.; 1890, locating engineer, Calgary & Edmonton Ry.; 1891, revision surveys C.P.R. and locating Niagara Falls, Park & River Ry.; 1892, revision surveys C.P.R., Chalk River to Sudbury; 1892 to 1895, Chief Engineer Lake Timiskaming Colonization Ry.; 1896, division engineer, construction, Montreal & Ottawa Short Line, C.P.R.; 1897 to 1900, locating engineer, assistant Chief Superintending Engineer, and Chief Engineer and Superintendent, Crowsnest Branch, C.P.R.; May 1900 to 1907, Chief Engineer, and from 1907 to Oct. 1918, General Manager and Chief Engineer, Western Lines, Canadian Northern Ry., Winnipeg; Oct. 1918 to Sept. 1920, Vice President, Construction, Operation and Maintenance, Canadian National Rys., Toronto; Sept. 1920 to Feb. 19, 1923, Vice President in charge of Construction, Canadian National Rys., Toronto.

Mrs. McNicoll, widow of David McNicoll, formerly Vice President, C.P.R., and the Misses McNicoll, have returned to Montreal from Jamaica.

Henry Hilaire Melanson, who has been appointed General Passenger Traffic Manager, Canadian National Rys., Montreal, was born at Scadouc, N.B., Mar. 9, 1872, and entered Intercolonial Ry. service Nov. 18, 1889, since when he has been, to Aug. 1892, clerk in Mechanical Department; Aug. 1892 to Dec. 1899, clerk in Passenger Department; Dec. 1899 to Mar. 1901, chief clerk, Passenger Department; Mar. 1901 to May 1903, General Baggage Agent; May 1903 to Nov. 1909, chief clerk, Passenger Department; Nov. 1909 to May 1913, Assistant General Passenger Agent; May 1913 to June 1917, acting General Passenger Agent; June 1917 to Dec. 1918, Passenger Traffic Manager, Canadian Government Rys., all at Moncton, N.B.; Dec. 1918 to March 1, 1923, Passenger Traffic Manager, Canadian National Rys., Toronto.

R. C. Morgan, Superintendent, Winnipeg Terminal Division, C.P.R., who has been granted several leaves of absence to enable him to act as General Manager, Reid Newfoundland Co., and who returned to St. John's, Nfld., about the middle of January, after spending a short time in Winnipeg, expects to leave again for Winnipeg, about the middle of April, to take Mrs. Morgan home, after she is able to leave the hospital, where she has been for some weeks, in consequence of having fallen on ice and breaking a leg.

John Pullen, President, Canadian National Express Co., Montreal, who has retired on superannuation, was born at Shepton Mallet, Eng., Jan. 23, 1863, and entered G.T.R. service in 1877, since

when he has been, to 1878, in various capacities in the Assistant General Freight Agent's office, Sherbrooke, Que.; 1878 to 1880, in General Freight Department, Montreal; 1880 to 1890, secretary to Traffic Manager, Chicago, Ill.; 1890 to 1896, Agent, West Shore Fast Freight Line, and subsequently Agent, Reading Despatch, Chicago, Ill.; 1896 to 1897, Division Freight Agent, Stratford, Ont.; 1897 to May 1, 1899, Division Freight Agent, Hamilton, Ont.; May 1, 1899, to May 1, 1900, General Freight Agent, Central Vermont Ry., St. Albans, Vt.; May 1, 1900, to Aug. 14, 1905, General Freight Agent, G.T.R., Montreal; Aug. 14, 1905, to Oct. 2, 1911, Assistant Freight Traffic Manager, G.T.R., Montreal; Oct. 2, 1911, to Sept. 1, 1921, President, Canadian Ex. Co., Montreal; Sept. 1, 1921, to March 10, 1923, President, Canadian National Express Co., Montreal.

H. Rindal, who has been appointed District Engineer, Alberta District, C.P.R., Calgary, Alta., was born at Tyvold, Norway, Nov. 1, 1879, and was from Sept. 1900 to Sept. 1902 with the Norwegian Government Rys., and Nov. 1902 to May 1903, rodman, Pennsylvania Rd., Pittsburgh, Pa. He entered C.P.R. service June 1903, since when he has been, to Sept. 1903, transit man, Winnipeg; Sept. 1903 to 1905, Resident Engineer, Fort William, Ont.; 1905 to 1907, Assistant Division Engineer, Winnipeg; 1907 to 1910, Assistant Engineer, Winnipeg; 1910 to Feb. 1923, District Engineer, British Columbia District, Vancouver.

W. D. Robb, Vice President, Insurance, Lands, Express, Telegraphs, Colonization, Development, etc., Canadian National Rys., Montreal, and Mrs. Robb, sailed from New York, March 3, to spend a few weeks at Hamilton, Bermuda.

Arthur St. Laurent, B.Sc., C.E., Chief Engineer, Dominion Public Works Department, Ottawa, died there March 6, after two months illness. He was born at Rimouski, Que., Nov. 20, 1859, graduated from l'Ecole Polytechnique, Montreal, in 1885, and for three years was engaged on Temiscouata Ry. location and construction. He entered the Dominion Public Works Department service Sept. 18, 1888, and to 1898, was Assistant Engineer, Winnipeg. He was afterwards engaged on various works throughout the Dominion for the Department; from 1908 to Feb. 1922 was Assistant Deputy Minister, and from Feb. 1922, Chief Engineer of the Department.

Sir William Scott, General Manager, Anglo-Newfoundland Development Co., who died in London, Eng., March 5, is reported to have been at one time an engineer in the C.P.R. Construction Department.

L. K. Silcox, General Superintendent, Motive Power, Chicago, Milwaukee & St. Paul Ry., and formerly Mechanical Engineer, Canadian Northern Ry., Toronto, read a paper, "A mechanical man's views on locomotive terminals," before the Western Society of Engineers, in Chicago recently.

Hon. J. A. Stewart, formerly Minister of Railways and Canals, who died at Montreal recently, left an estate valued at approximately \$420,000. After family bequests of \$50,000 are paid, the balance goes to his widow.

Major John W. Stewart, C.B., C.M.G., railway and harbor contractor, etc., Vancouver, B.C., and Mrs. and Miss Margaret Stewart, have returned from England.

Lady Thornton, wife of the President, Canadian National Rys., and Miss Thornton, who, since coming out from England, have spent some time with Sir Henry Thornton in Ottawa, left there early in March to be abroad for a few months.

A. E. Warren, who has been appointed General Manager, Western Region, Canadian National Rys., Winnipeg, was born at Taunton, Eng., June 9, 1874, entered railway service in 1889, and served in various capacities in Car Service Department, Superintendent's, General Superintendent's and Manager's offices, and station and yard service, C.P.R., until July, 1901, when he resigned to enter mercantile business. He entered Canadian Northern Ry. service in Aug. 1902, and served as station agent, chief clerk to General Manager, Superintendent, General Superintendent and Assistant to General Manager, Western Lines. From Jan. 1 to Aug. 1, 1918, he was loaned to the Dominion Government and acted as Chief Operating Officer, Department of Railways and Canals, Ottawa. He was appointed General Manager, Western Lines, Canadian National Rys., Winnipeg, in Nov. 1918, and in Aug. 1920, when the Grand Trunk Pacific Ry. was placed under C.N.R. management, was also appointed General Manager, G.T.P.R.

Among the Express Companies.

The Dominion Ex. Co. has opened offices at Glenton, La Gabelle, and St. Narcisse, Que.

O. A. Sharpe, heretofore route agent, has been appointed agent, Dominion Ex. Co., Hamilton, Ont., vice C. A. Dobson.

A. F. Boyer has been appointed acting agent, Dominion Ex. Co., North Bay, Ont., during absence of R. Glover on leave.

The Canadian National Ex. Co. has reopened its offices at Les Eboulements and Petite Riviere, Que., and has opened an office at Val Gagne, Ont.

J. A. Grignon, a money order clerk, Dominion Ex. Co., Montreal, committed suicide by shooting, in his cage, at the company's office there, March 24. He had been in ill health for some time, and was, apparently, in financial difficulties.

H. J. Palmateer, heretofore Assistant Superintendent, has been appointed Superintendent, lines east of Port Arthur, Dominion Ex. Co., Toronto, vice George Parker, deceased. The position of Assistant Superintendent has been abolished.

The Board of Railway Commissioners' order 33,471, dismissing P. Burns & Co.'s complaint against Canadian National Ex. Co., with respect to claims for goods lost or damaged at flag stations, is given in full, under "Traffic Orders by Board of Railway Commissioners," on an earlier page of this issue.

The delivery limit of express companies in Toronto have been extended, as follows: In the Moore Park district, the area bordered by Moore Ave., Welthe north Toronto section, the territory west of Duplex Ave. to Avenue Road, between St. Clement Ave. and Lytton Boulevard.

As stated in Canadian Railway and Marine World for February, the Railways and Canals Department notified the Canadian National Express Co., as successor to the Canadian Express Co., and also the Dominion Express Co., that

the arrangements they had for operation over the Canadian National Rys. lines south of the St. Lawrence River, formerly the Intercolonial and Prince Edward Island Rys., would be terminated on March 31. It was stated subsequently that this was preparatory to giving the Canadian National Ex. Co. exclusive operating rights on those lines. Towards the end of March it was stated that the Dominion Ex. Co. would not cease operating on the lines on March 31, and that the matter had been deferred for at least another month, but no official information is available.

National Dairy Council's Appeals.

The Dominion Government has dealt with two appeals by the National Dairy Council of Canada, by passing two orders in council on March 15, as follows:—

No. 494. "Whereas the committee of the Privy Council on Jan. 18, 1923, had under consideration the National Dairy Council of Canada's petition by way of an appeal under the Railway Act 1919, sec. 52, from a decision of the Railway Commissioners for Canada, refusing an application of the petitioners for the cancellation of a 20% increase in special commodity express rates on cream, granted by the Board's order of Feb. 2, 1921, and for the rearrangement of the special commodity express rates on cream in existence prior to that order, and whereas the committee is of the opinion that the bill should be allowed, therefore the Governor-General in council is pleased to order, and it is hereby ordered, that the special commodity express rates on cream in Canada in effect prior to Feb. 2, 1921, be re-established on and after April 1, 1923."

No. 495. "Whereas the committee of the Privy Council on Jan. 12 and 18, 1923, had under consideration the petition of the National Dairy Council of Canada by way of appeal under the provisions of the Railway Act 1919, sec. 52, from a decision of the Board of Railway Commissioners for Canada, refusing an application of the petitioners for the classification of ice cream as second class, instead of first class, in the Express Classification for Canada, for express rate purposes, and whereas, after hearing counsel for both parties to the contention, the committee has reached the conclusion that the appeal should be dismissed, therefore the Governor in council is pleased to dismiss the said appeal, and the same is hereby dismissed accordingly."

Telegraph, Telephone and Cable Matters.

The placing of all Canadian National Telegraphs wires underground in Montreal and London, Ont., is reported to be nearly completed.

Canadian National Telegraphs have opened offices at Cushing Lake and Peninsula, Que.; and Agate, Newcastle and Pass Lake, Ont., and have closed offices at Brucefield, Missongia and Wroxeter, Ont. The name of the office at Howell, Sask., has been changed to Prudhomme.

It was announced in London, Eng., recently that on account of the Government having decided to invite private enterprise to participate in the erection of a chain of wireless telegraph stations throughout the empire, the work was being taken in hand at once, and that, within two years, the Marconi Wireless Telegraph Co. will have several stations in England, in direct communication with the various dominions and with India.

Electric Railway Department

Toronto Terminals, Hydro Electric Railways, Toronto & York District.

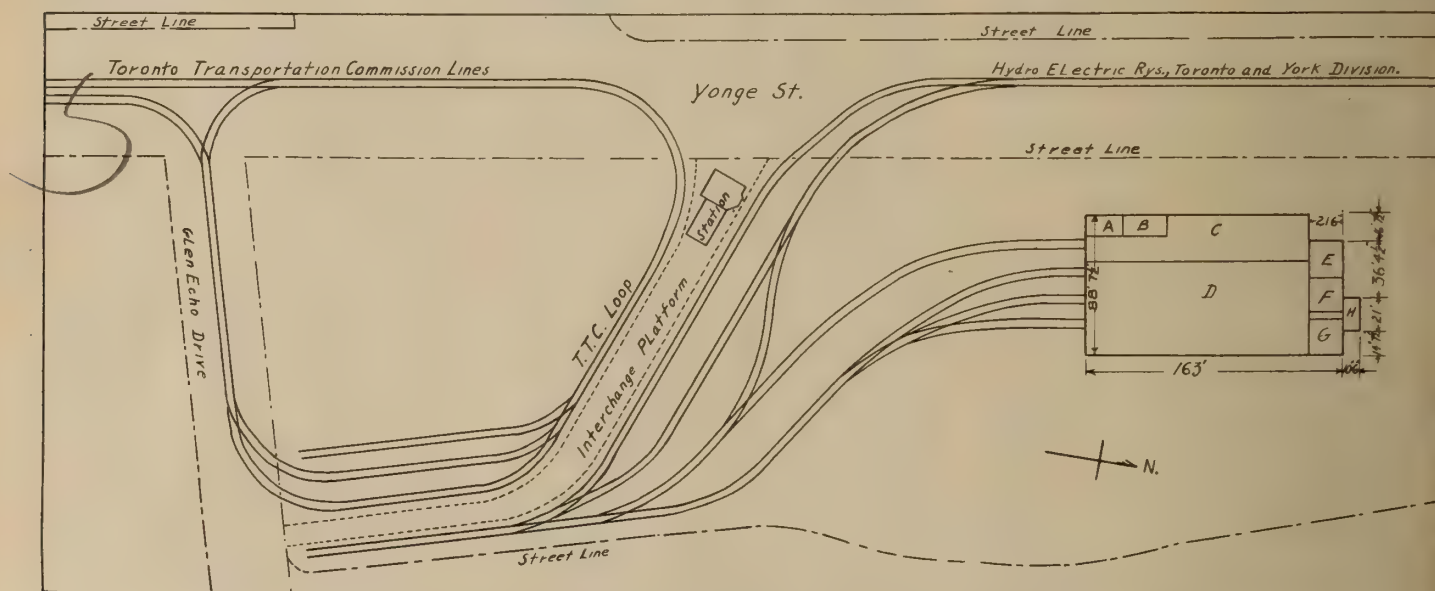
The Toronto & York Radial Ry. is now being operated by the Hydro Electric Power Commission of Ontario, and the old Metropolitan Division, running north from Toronto's north boundary, is designated the Hydro Electric Railways, Toronto & York District, Metropolitan Division. Consequent upon the Toronto Transportation Commission's lines on Yonge St. being extended to the north city limits, the radial railway single track line on Yonge St., between the former southern terminal and the north city limits, was taken up, and a new radial line terminal at the north city limits became necessary.

As stated in Canadian Railway and Marine World for February, terminal facilities have been provided near the Toronto Transportation Commission's north Yonge St. loop, and to permit their construction, Doncliffe Drive, a street

and interchange platform are exclusively those of the radial line, and consist of a main track, run-around track, a track leading to the freight house portion of the main building at the north end of the property, a connection between the two latter tracks, and a lead branching into three tracks entering the car barn. The building at the north end, also exclusively a radial line facility, is divided as follows, with reference to the lettering on the plan: A, office; B, perishable freight storage; C, freight house; D, car barn; E, blacksmith shop; F, machine shop; G, carpenter shop; H, lavatory and wash room. The portion of the building occupied by the carpenter shop and machine shop has a basement below it, in which are the boiler room and coal storage, and also has a second story, divided into an air brake, controller, etc., repair room, and an armature room.

ft. east. The roof eaves are 8 ft. above the platform, and the roof is 18 ft. wide and slopes to the eaves at an angle of 30 deg. to the horizontal. It is carried by steel I beam and angle supports, at 12 ft. centers, and is of steel truss construction, with wood rafters, and covered with wood and Spanish metal tiling.

The car barn, repair shop and freight house building is of steel truss and brick construction, with concrete foundations, and is divided as mentioned above. It is 173½ ft. long over all, and 88 ft. 7½ in. wide. The car barn portion is 141 ft. 1½ in. x 54 ft. One concrete pit, with 5 in. concrete floor on 8 in. cinder fill, extends underneath all three tracks, the bottom of the pit being 4 ft. 8 in. below the top of rail, and the tracks being supported on reinforced concrete piers. The track on the east side of the building is equipped with a 40-ton 4-screw hoist. Two sets



Toronto Terminals, Hydro Electric Railways, Toronto & York District.

formerly running east from Yonge St., one block north of Glen Echo Drive, was closed. Some of the terminal construction work was done jointly by the Hydro Electric Railways and the Toronto Transportation Commission; and the construction of facilities for use by the radial line alone, was done under contract from the Hydro Electric Power Commission's Railways Department.

The accompanying plan shows the layout of the new terminal and the arrangement of its facilities. Toronto Transportation Commission cars, from the downtown portion of the city, turn at the loop shown, while radial cars from north of the city proceed to the station and interchange platform, between the loop track and the radial track, where the passengers change from one line to the other. The interchange platform, a joint facility, follows the loop tracks all the way around from Yonge St. to the former street line of Glen Echo Drive. This platform was the first unit of the new facilities to be completed, having been finished early in the winter of 1922-23. The station is a purely radial railway facility. The tracks to the north of the station

The station, which is also a purely radial line facility, is of buff colored brick and hollow tile construction, with concrete foundations and Spanish tile roofing. The length over all is 50 ft. The one story or eastern portion is 22 ft. wide and the two story or western portion is 28 ft. wide. The height to eaves of the two story portion is 18½ ft., and of the one story portion, 10 ft. The west side is provided with a canopy, 9 ft. above the ground level. The interior is divided into a waiting room, 20 x 34 ft.; lavatories; a ticket office, 11 x 8 ft.; an annex for conductors, 5 ft. 5 in. x 3 ft., and a baggage room 14¼ x 15 ft. On the second floor are the Superintendent's office, 14 x 13 ft., and the dispatcher's office 14 x 13 ft. The interior is finished in lath and plaster; the floor downstairs is of tile, which also extends to the windows, and the partitions between the rooms are of tile. The building is heated by hot water and electrically lighted.

The interchange platform is 352 ft. long, and ranges in width from 27 to 36 ft. It is of concrete, and is covered in part by an umbrella roof, which adjoins the station building, and extends for 150

of stairs lead into the pit at the north end of the building and one at the south. Sand storage space of 60 tons capacity is provided at the east side, the sand being dried by steam coils.

The freight storage portion of this building, 31 ft. 1½ in. x 141 ft. 1½ in., includes the perishable freight room, 14 ft. x 23¼ ft., and an office, 14 ft. x 23 ft. 10½ in. The freight shed is served by the most westerly track entering the building. The flooring in the freight shed and perishable freight room is of 2 in. plank, with a top flooring of 1 in. white pine. The office portion has 1 in. maple flooring.

The shop portion of the building is of heavy mill type construction, and the various shops, the locations of which are given above, have the following dimensions: blacksmith shop, 21½ ft. x 19 ft. 10½ in.; machine shop, 20 ft. x 21½ ft.; carpenter shop, 21 ft. x 21½ ft.; boiler room and coal storage, equal in area to the machine shop and carpenter shop, under which they are located; armature shop and air brake repair shop, equal in area to the machine shop and carpenter shop respectively, over which they are

located. The blacksmith shop, machine shop and carpenter shop are fitted up to take care adequately of running repairs on electric car bodies and trucks, and the armature and air brake repair shops are equipped to take care of the motor and air brake work. A feature of the construction is that a hoist has been installed to lift armatures, motors, etc., out of the car barn portion of the building and to transfer them into the armature shop in the one straight line movement. Stairs leading to the boiler room and coal storage space in the basement, and leading to the armature shop and air brake repair shop in the second story, are located between the machine shop and carpenter shop. The building is heated by steam, with the low pressure system.

The interchange platform, provided jointly by the Hydro Electric Power Commission of Ontario's Railways Department and the Toronto Transportation Commission, was built by Toronto Transportation Commission forces, and the umbrella shelter, also provided jointly, was built by the Metallic Roofing Co., Toronto. The contractors for the station, and car barn, repair shop and freight house building, were Sullivan & Fried, Toronto. The buildings were designed by J. C. Crumm, Designing Engineer, Railways Department, Hydro Electric Power Commission of Ontario. Construction was in charge of T. U. Fairlie, Engineer, Railways Department, H.E.P.C., and the design and construction were carried on under the supervision of F. A. Gaby, Chief Engineer, H.E.P.C. Construction was begun about Nov. 1, 1922; all track-age and overhead work were completed Jan. 15, 1923, and the station and car barn and freight shed building were completed and placed in operation March 15.

The new facilities will serve the Hydro Electric Railways' Toronto and York District, Metropolitan Division, including the branch line from Aurora to Schomberg, formerly the Schomberg & Aurora Ry.

Street Car Traffic Conditions in Montreal.

Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., is reported to have said, in a recent interview:—"At two points the limit of density has practically been reached, so that it would not be possible to add additional cars during the rush hour. These points are Bleury St. and St. James St. from Place d'Armes to McGill St. The matter is receiving earnest study by the company and the commission. During the rush hour period we are operating 760 cars, a greater number than ever before. The week-day average of revenue passengers carried numbers approximately 600,000, with an additional 200,000 carried on transfers. Yet, despite that large number, the average number of passengers carried per mile is only 8.5, so that there are periods when travel is very light. Our car mileage is greater than ever before.

"One of the causes of trouble arises from the fact that the winter peak load is carried in a briefer period, between 5.30 and 6.30 p.m. In the summer the load is carried over a longer period, beginning at 4 p.m. As a matter of fact, there are no complaints in the summer, it is only in winter that complaints of overcrowding and delays occur. There are several causes for this. The effort to carry the people by putting more cars

in operation causes density of traffic. Take, for instance, the corner of Bleury and St. Catherine Streets, where a car moves in each direction every 15 seconds. In addition to that, there is considerable vehicular traffic, and motors get in between cars, further adding to the rush hour congestion. I think it would be a good plan to direct the vehicular traffic through other channels during the rush hour period. If this were done, it would greatly facilitate the movement of trams across this intersection. Similarly, if vehicular traffic could be diverted from McGill St., intersection trams could be moved across there more expeditiously. For instance, instead of stopping the westbound trams opposite the Bank of Nova Scotia, they could be shot across to the square and this would permit the trams turning at McGill to swing out of the way. As it is now, there are

service, and he was asked if that had received any consideration. He replied: "Buses could be used as auxiliaries and as feeders. Conditions in Montreal are against autobuses. In summer on asphalt roads they are all right, but in the winter they would be severely handicapped. Even in a good limousine, with nice springs, travel on winter roads is none too pleasant. In a motor 'bus with solid tires and chains, the experience would be most unpleasant.

"Costs now are more than double what they were previous to the war. This is due to the great increases in wages and in the costs of materials. It is true that fares have been increased 50%, but it requires the exercise of great care to prevent the expenses from rising too high and crossing the border of revenue."

Windsor, Essex and Lake Shore Rapid Ry. Organization Changes.

A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry., who has desired for some time to give up the General Managership, resigned it Oct. 31, 1922, but it was only accepted recently. He remains a director, and as Vice President, and will go into business in Windsor, Ont., in the near future to handle financial investments, real estate, insurance, valuations and adjustment of insurance claims.

T. P. Pinckard, President, has assumed executive charge of the company's affairs, with office at Windsor. He is Manager of the Dominion Traction & Lighting Co., which is a holding company for the Windsor, Essex & Lake Shore Rapid Ry. Co., and the Windsor Gas Co. He has announced the following organization, with offices at Kingsville:—

C. P. Cooper, heretofore Superintendent, to be General Superintendent, in charge of all departments, and reporting to President.

E. S. Hughes, heretofore Traffic Manager, to be Assistant General Superintendent, respecting all employes and departments, also Traffic Manager.

H. F. Macdonald, Auditor, continues in that position.

George C. Graham, heretofore Superintendent of Shops and Rolling Equipment, to be Superintendent of Power and Equipment, in charge of power house, shops and rolling stock.

C. G. Loop, heretofore Roadmaster, to be Superintendent of Way and Structures, in charge of tracks, roadway, overhead lines and gravel pit.

Fort William Municipal Railway Matters.—A. B. Ingram, Vice Chairman, Ontario Railway and Municipal Board, visited Fort William recently, and met the acting mayor, the city's public utilities committee, and some city officials, in connection with matters relating to the municipal railway. The city agreed to replace a Y, which had been complained of, by a loop, as soon as weather will permit. On Dec. 29, 1922, the Board approved of 5 one-man cars, and on Jan. 15, of 4 more, for operation on the railway, but there was some delay in issuing an order, on account of the law stamps required. This was adjusted satisfactorily. The Chippawa Park extension, and rates of fares charged, were discussed, but are still in a somewhat unsettled state. Delay in furnishing the Board with an annual report, and a report in regard to accidents, was discussed and adjusted satisfactorily.

Canadian Electric Railway Association.

Honorary President, E. A. Robert, President, Montreal Tramways Co., and Quebec Ry., Light, Heat & Power Co.

Honorary Vice President, Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co.

Honorary Council: Thos. Ahearn, President, Ottawa Electric Ry.; Acton Burrows, Proprietor, Canadian Railway and Marine World; Geo. Kidd, General Manager, British Columbia Electric Ry.; Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., and director, Quebec Ry., Light, Heat & Power Co.

President, Major F. D. Burpee, Manager and director, Ottawa Electric Ry.

Vice President, H. H. Couzens, General Manager, Toronto Transportation Commission.

Executive Committee: The President, the Vice President, the immediate past President (G. Gordon Gale, Vice President and General Manager, Hull Electric Co.) and D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; D. W. Houston, Superintendent, Regina Municipal Ry.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; R. Mayne-Reade, Superintendent, Quebec Railway, Light & Power Co.; W. R. Robertson, General Superintendent of Railways, Hydro-Electric Power Commission of Ontario; W. L. Weston, Manager, Nova Scotia Tramways & Power Co.; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

Treasurer, W. S. Hart, Managing Director, Three Rivers Traction Co.

Auditor, Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Ry.

Secretary, D. N. Gill, Comptroller, Ottawa Electric Ry., Ottawa, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

times when the street is lined with trams back to the square. I think it would be possible to find another passageway for the vehicles and motors during the rush hours, so as to relieve the congestion at McGill St.

"It is noticeable that there has been a decided increase in the use of motor cars during the winter. These automobiles naturally take to the streets in which the trams run, because there the streets are better kept and it is easier to travel, but that practice also adds to the delays.

"In addition to increased car mileage, there are now more large cars in use, and also an increase in the number of cars with trailers."

It was pointed out to Lt.-Col. Hutcheson that the agreement between the city and the company gives the latter the privilege of operating an autobus

Winnipeg Electric Railway Franchise, Finances, Etc.

After negotiations for a year the Winnipeg Electric Ry. Co. has withdrawn temporarily its request to the city council for an extension of its franchise. The city has the option of buying the street railway property in 1927. If it does not then buy, the franchise will be automatically extended for a recurring period of five years. Negotiations, looking to an agreement deferring the period at which the city could take over the railway property for 10 years, to 1937, were undertaken by the company, in order to enable it to do financing which would mean an extension of Winnipeg's transportation system on a large scale. A. W. McLimont, Vice President, who conducted the negotiations with the council, submitted plans for a transportation system that would keep abreast of the requirements of the city, which were incorporated in a draft agreement reached between the company and the city, and which was referred to in previous issues of Canadian Railway and Marine World. Amongst the concessions which Mr. McLimont agreed to, in consideration for the extension, was a schedule of lower fares; payment by the company of a share in the cost of building bridges and subways; placing wires underground in the business section; adjustment of franchises in municipalities outside the city limits, and a number of important extensions to track.

While this agreement met with the favor of the majority of the city council, the labor group raised strenuous objections to the franchise question being dealt with at any time prior to 1927. This opposition protracted the negotiations, and in his letter to the council suspending negotiations temporarily, Mr. McLimont said: "The bankers take the position that the very determined and continuous opposition to the franchise negotiations by certain members of the council, and from influential quarters elsewhere, is very detrimental to the company's financial standing and credit, and on account of the long delay that has taken place in negotiations, the uncertainty as to when the matter will be ended and what the final outcome will be, and the general conditions now prevailing in Winnipeg, the bankers seem very reluctant to consider any arrangement which would require them to provide for the large financial obligations involved, and which would be necessary to carry out the programme outlined in the draft agreement now before council, and advise us to suspend negotiations temporarily. Another matter strongly influencing the bankers is the financial showing made by the company's railway department for 1922, which was very disappointing. Conditions are not improving up to date this year, and it would be impossible, in the face of these conditions, to justify putting into effect the fares proposed in the agreement. Under all these circumstances we feel that the only proper action to take is to suspend negotiations for the time being. After considering all phases of the situation, the bankers intimate to me that they were prepared to consider providing us with sufficient money to meet our immediate and pressing obligations, and we now have negotiations pending with that end in view. When these are concluded we expect to take up the matter of our indebtedness to the city. Permit me to express the hope that the policy of negotiation and conciliation agreed to between

the company and the city, in the late Mayor Parnell's time, may be continued, and that any question that arises between the parties should, if possible, be settled in that way. I shall be glad to meet the city council at all times, in a spirit of co-operation, and in an endeavor to meet all questions arising, fairly and properly."

The company has effected new financial arrangements and a special general meeting of shareholders was held on March 19, to pass a bylaw authorizing a total issue of \$5,000,000 of 20-year 6% general mortgage and collateral trust gold bonds, of which there are to be presently issued \$3,250,000. This amount will be disposed of in retiring current indebtedness for capital expenditures, and for general corporate purposes, and will place the company in a splendid liquid position, with its interest charges less than they are now.

In 1921 the company found it necessary to provide additional electric energy to meet its growing demands and organized the Manitoba Power Co., to produce the required additional power. The Winnipeg Electric Railway owns a majority of the subsidiary power company's capital stock. This modern hydro electric plant placed its first unit in operation in Dec., 1922, and the second one at the end of Feb., 1923. These two units will furnish the company, under the full operating head of 56 ft. a total of 56,000 h.p. additional, being two units of 28,000 h.p. rated capacity. The plant is designed with an ultimate capacity of 168,000 h.p., thus assuring to the company a substantial amount of power for its present and future needs. The W. E. R. Co. is to be the distributor of this big power load, and in order to do so considerable money will have to be expended to instal plant, machinery and appliances for the distribution thereof.

In 1922 the company had 18,673 electric meters in service, with a connected load, as of Dec. 31, 1922, of 106,427 h.p., compared with 88,304 h.p. at Dec. 31, 1921. During 1922 the electric department's total sales were 86,389,905 k.w. hours, an increase of about 24% over 1921.

The city council's finance committee, on March 2, instructed the tax collector that the company must pay its outstanding taxes, some \$1,000,000, on the same basis as any other ratepayer.

London and Port Stanley Railway Results.

A London, Ont., press report says that the London Railway Commission, operating the London & Port Stanley Ry., has issued its report for the calendar year 1922, containing the following figures: Passenger earnings, \$277,100.93; freight earnings, \$206,032.11; miscellaneous earnings, \$13,638.57; Port Stanley park, \$67,710.29; total gross earnings, \$564,481.90. The operating expenses, including the Port Stanley park enterprises, were \$440,081.17, in addition to which the Commission paid rentals of line, \$20,000; sinking fund, \$29,537.50; interest, \$82,594.96; taxes, \$10,496.31, making a total expenditure of \$582,709.94, and leaving a deficit of \$18,228.04, which, deducted from previous surpluses, leaves a balance of \$189,545.33 in surplus account. There was a decrease of 29,506 in the number of passengers carried, and a decrease of 131,363 tons of coal,

coke and steel carried, due to the coal strike in the United States. Operating expenses were reduced \$31,815.53. Interest and sinking fund charges were increased owing to a new debenture issue of \$257,500.

Toronto Transportation Commission's Activities.

The Commission has given a contract for the coal and ash handling plant at new shops at Bathurst St. and Davenport Road, to McNiven Bros. Co., Toronto.

At March 17, the Commission had received 50 motor cars ordered from Canadian Car & Foundry Co., and all of the trailer cars ordered except 17, which were expected before the end of the month. The Ottawa Car Manufacturing Co. will commence delivery of the 50 motor cars ordered from it, early in April. The motor and trailer cars are described and illustrated elsewhere in this issue.

The Commission has given orders recently for: 290 gross tons 85 lb. C.P.R. section T rails, and 550 pairs angle bars, from Algoma Steel Corporation; 10 tons 91-lb. girder rails, from U.S. Steel Products Co., and 3 tons standard track spikes from Steel Co. of Canada. The T rail will be used for track construction in the Hillcrest and other yards, and the girder rail for pit tracks in the new shops at Bathurst St. and Davenport Road.

The Commission will, about April 15, commence the installation of the largest street railway intersection in its system, at the intersection of Queen St., Roncesvalles Ave., King St. and the line to the west along the Lake Shore Road. It is being fabricated by Canadian Steel Foundries, Montreal, and will contain considerably more steel than the grand union installation at the intersection of Bloor and Bathurst Sts., which was described and illustrated in Canadian Railway and Marine World for Sept., 1922, pg. 475.

The Commission has asked the city council for an appropriation of about \$7,500,000 for this year. Of this, about \$2,500,000 is for expenditure on the portion of the Toronto Suburban Ry. within the city limits, the proposed acquisition and rehabilitation of which is looked forward to by residents of the western part of the city as a long forward step in the solution of their present transportation difficulties. Action on the request has been held up for some time, but now that the city's tax rate has been struck, it is expected that the Commission's requirements will receive consideration in the immediate future.

J. B. Carswell, Consulting Engineer of Structures for the Commission, who has been in charge of a large amount of work during the rehabilitation period, has resigned to devote his whole time to the Carswell Construction Co., of which he is President. Major W. E. P. Duncan, Engineer of Structures, continues as head of the Building Department, as heretofore. The maintenance of the Commission's buildings has been transferred to the Building Department, under Major Duncan, thus grouping all that class of work in one department. In the old days, when it was largely a matter of routine, it was apparently found convenient by the Toronto Ry. Co. to have the Building Department run as an adjunct of the Rolling Stock Department.

Included among the expenditures which the Commission propose making this year is one for a new car house at Roncesvalles Ave. and Queen St., in the western part of the city. The present house is inadequate for handling the large new cars which the Commission is operating. The Mayor and other members of the board of control visited the site recently with Commission officials, and on March 19 the city council passed a bylaw authorizing the expropriation of lands in the block bounded by Queen St., Roncesvalles Ave., Marion St. and Sunnyside Ave., and authorizing an appropriation of \$800,000 for the construction of a new car house and office building and radical revision of the yard layout. At present the entrance to the Roncesvalles car house and yard is from Roncesvalles Ave., but on completion of the new house the entrance will be from Queen St., with auxiliary entrances to a loop to be provided on Roncesvalles

Ave. The land to be expropriated includes a parcel at the southwest corner of the block, fronting on Queen St. and Sunnyside Ave., and two parcels north of the present yard. The houses on this land will be torn down as soon as required. The present car house is adjacent to Roncesvalles Ave.; when it is removed all of the frontage on Roncesvalles Ave., with the exception of 50 ft. to be kept to provide an entrance to the loop, will be sold for business purposes. The new car house will be located at about the center of the property, and will be of the same type as the Eglinton Ave. one placed in operation by the Commission recently, and described and illustrated in a preceding number of Canadian Railway and Marine World. Contracts for the removal of the houses on the property to be acquired will be awarded immediately on their acquisition, and tenders for construction of the car house and office building, will be called for.

dale. The council consented.

Winnipeg Electric Ry.—The city council's public safety committee is reported to have instructed its sub-committee on transportation to take up with the company the question of building electric railway lines on Talbot Ave., Scotia St., McGregor St. and Sargent Ave.

Proposed Purchase of Niagara, St. Catharines & Toronto Ry.

The Niagara District Hydro Electric Railway Association met at Thorold, Ont., March 12, to consider a proposal to buy the Niagara, St. Catharines & Toronto Ry. undertaking. Some time ago a conditional option to buy this line for \$3,544,374 was given to the Hydro Electric Power Commission of Ontario, and an order in council was passed by the Dominion Government authorizing the Canadian National Rys. directors to effect the sale if they saw fit to do so. The whole situation was changed recently by Sir Henry Thornton's announcement that he had appointed a committee of C.N.R. officers to investigate the whole question of electrification of lines, and by the defeat of one of the bylaws respecting the construction of a Port Credit-Hamilton-St. Catharines line under the Hydro Electric Power Commission's plans.

The Thorold meeting, by a vote of 19 to 9, passed the following resolution, moved by the Mayor of St. Catharines, and seconded by the Reeve of Niagara-on-the-Lake:—"That this gathering of representatives of the Niagara District Hydro-radial Union desires to go on record as continuing its approval of the proposal that the Niagara district municipalities should be given the power to purchase the N. St. C. & T. Ry., and recommends that the municipalities which have not yet voted be urged to do so without delay, so that the local railway service be enlarged and improved, and that long-needed and much-neglected improvements throughout the system may be carried out." An amendment, asking the Dominion Government to cancel the option, was defeated. The association appointed a committee to wait on Sir Henry Thornton, President, C.N.R., and Sir Adam Beck, Chairman H.E.P.C. of Ontario, in regard to the matter.

Montreal Accident Actions Dismissed.

Montreal Tramways Co. was defendant in four actions for damages arising out of a collision between a tramcar and an automobile at the corner of de Fleurimont and St. Hubert Streets, on the night of May 30, 1921. P. Meunier, driver of the car, claimed \$11,196, owing to his having received permanent injuries, which prevented him following his employment as a chauffeur; and the three other persons injured claimed \$500 each. After hearing all the evidence, Justice MacLennan, dismissed the cases, holding that the plaintiffs had failed to prove negligence by the motorman. The electric car was being driven at a moderate and proper speed and the customary signal was given on approaching the street corner. Meunier was driving his automobile at a dangerous and excessive speed, viz: about 40 miles an hour, and was proved to have been in an unfit condition to drive an automobile. He ran into the electric car while it was crossing the intersection; and he had attempted by bribes to induce persons who knew nothing about the accident to give evidence. The actions were all dismissed with costs.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—A press report states it is proposed to build a second track on Victoria Road, South Vancouver, from Kingsway to 46th Ave. (March, pg. 134.)

Fort William, Ont.—An unconfirmed press report states that an electric railway will be built from Duluth, Minn., to the International Bridge, and probably extended to Fort William; that a water power on the Pigeon River will be developed to provide power for its operation, and that the project will require the co-operation of the Dominion and United States Governments, as the Pigeon River is an international stream.

Fort William Municipal Ry.—The Mission extension line to Chippawa Park, Fort William, Ont., 1.4 miles, was completed during 1922, and this mileage should be added to that given in our February issue, increasing the total of new track laid in 1922 from 12.762 miles to 13.162 miles. Official advice of the completion of this work did not reach us until March 19. (June, 1922, pg. 315.)

Hamilton St. Ry.—The Hamilton, Ont., City Council's street railway committee was, a press report stated recently, considering a proposal to ask the Dominion Power & Transmission Co. to relay the tracks on Main St. East, from Ottawa St. to the junction of the new highway, with girder rails, to conform with the tracks in other parts of the city. (March, pg. 134.)

Hydro Electric Rys., Essex Division.—A press report states that the Walkerville, Ont., Town Council has approved a recommendation by A. F. McGill, Superintendent, for the construction of a Y track on Walker Road. (Dec., 1922, pg. 633.)

Kitchener-Waterloo St. Ry.—Kitchener, Ont., Light Commissioners, operating the Kitchener & Waterloo St. Ry., are reported to have practically completed negotiations with the Waterloo Town Council for a new 25 years franchise for the operation of the railway on Main St., Waterloo. The original franchise expired six years ago. It is proposed to lay a double track on Main St., between Union and William Sts., so as to give a 5-minute service to Kitchener. The new franchise proposals will, it is stated, be submitted to a vote of the ratepayers at an early date. (Feb., pg. 81.)

Montreal Tramways Co.—A joint meeting of Montreal Tramways Commission and Montreal City Council's executive committee was held March 22, to decide on improvements, extensions, etc., of the Montreal Tramways Co.'s lines. J. F. St. Cyr, President of the Commission, is reported to have stated prior to the meeting that the programme for 1922, had been practically all carried out at an expenditure of approximately \$1,500,000, and that the programme prepared for consideration for 1923 involved the expenditure of approximately \$2,000,000. The greater part of the improvement work will have to be done between April 15 and Oct. 15. Among the new lines proposed are the Mount Royal Park project, and some additional lines in Notre Dame de Grace. (Feb., pg. 81.)

New Brunswick Power Co.—A press report states that it is proposed to lay new track foundations on Dock and Mill Streets, and on Main St., from Portland St. and Douglas Ave., St. John, N.B. (March, pg. 134.)

Plaster Rock to Riley Brook, N.B.—Notice is given that application will be made to the New Brunswick Legislature to incorporate a company to build an electric railway from Plaster Rock to Riley Brook, on the Tobique River, in Victoria County. J. W. Stewart, Andover, is the promoter.

Quebec Ry., Light & Power Co.—Residents of Charlesbourg, St. Pierre, St. Joseph and Bourgoyal villages are asking the company to extend the line terminating at the Canadian National Rys. crossing, on the Charlesbourg Road, to Charlesbourg, about 1.5 miles, this year. (March, pg. 134.)

Regina Municipal Ry.—A press report states that the Regina, Sask., City Council proposes to ask the Saskatchewan Local Government Board for authority to expend \$36,500 on the improvement of the municipal railway. (Jan., pg. 36.)

Saskatoon Municipal Ry.—We are officially advised that it is intended to lay about 250 lin. ft. of new track and to install a new track intersection, in Saskatoon, Sask.

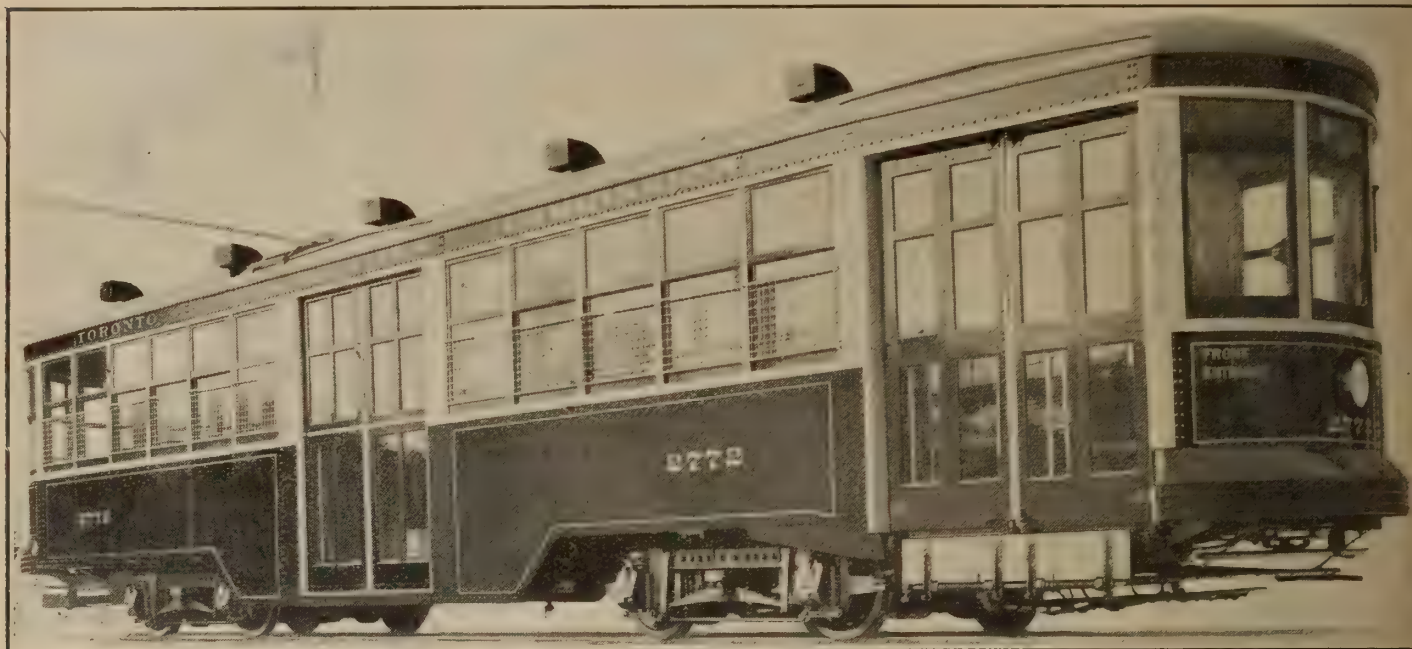
Toronto Suburban Ry.—Cooksville, Ont., Ratepayers' Association asked the Toronto Township Council recently to co-operate in an application to the Canadian National Rys. for the construction of a spur line from Cooksville to Erin-

Additional Motor and Trailer Cars for Toronto Transportation Commission.

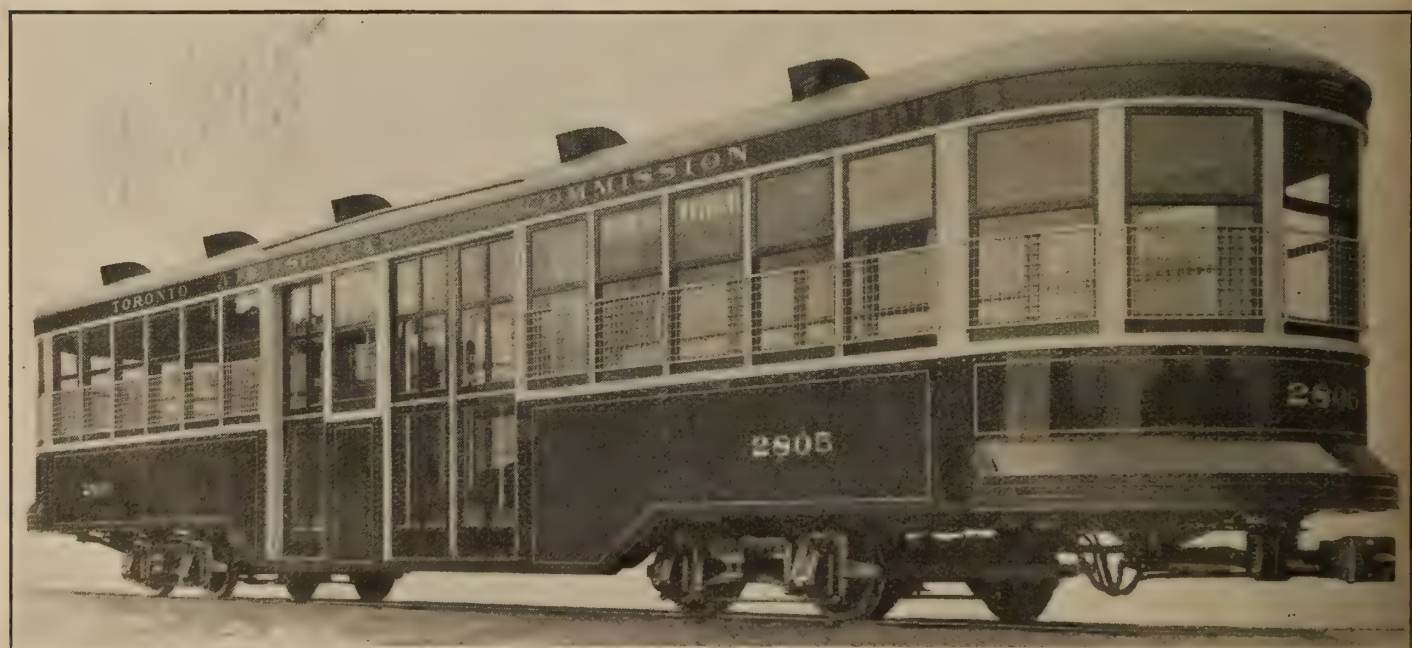
Canadian Railway and Marine World for Sept., 1922, contained a detailed description of 50 motor cars and 100 trailers ordered by Toronto Transportation Commission from Canadian Car & Foundry Co., and 50 motor cars from Ottawa Car Manufacturing Co. Delivery of the 150 cars ordered from Canadian Car & Foundry Co. has been completed, the last of the trailers having arrived in

Length over vestibule.....	45 ft. 10 in.
Length over bumper.....	47 ft.
Width over side sill angles.....	8 ft. 4 in.
Width over lower deck eaves.....	8 ft. 6 in.
Width inside of side lining.....	8 ft. 1 1/2 in.
Width of center doors between stanchions.....	5 ft.
Width of front doors between door shafts.....	5 ft.
From top of rail to under side of sill at center sliding doors.....	9 3/4 in.
Height from rail to top of roof.....	10 ft. 8 1/2 in.
Height from rail to top of ventilator.....	10 ft. 9 1/2 in.
Center to center of trucks.....	22 ft. 6 in.
Center to center of side posts.....	2 ft. 5 in.

The motor cars are equipped with 35 h.p. motors and are not designed for hauling trailers. They are convertible into cars for one man operation, and will then be operated on the pay-as-you-leave principle, i.e., the center doors will be inoperative, and passengers will enter by the front door nearest to the car body and leave by the front door nearest the front end of the car. These motor cars



Motor Car, Toronto Transportation Commission.



Trailer Car, Toronto Transportation Commission.

March. Both the motor cars and trailers are illustrated herewith. The motor cars are some 4 ft. shorter than those in the large lot acquired by the Commission in 1921, described and illustrated in preceding numbers of Canadian Railway and Marine World. The trailers, although of the same general dimensions as those got in 1921, include a special feature in the door arrangement. The motor cars' dimensions are as follows:—

The trailers' general dimensions are as follows:—

Length over vestibule.....	48 ft.
Length over bumpers.....	49 ft. 2 in.
Width over side sill angles.....	8 ft. 2 in.
Width over lower deck eaves.....	8 ft. 4 in.
Width inside of side lining.....	8 ft. 1 1/2 in.
Width of center doors between stanchions:	
Exit doors	2 ft. 6 in.
Entrance doors	5 ft.
Height from rail to top of roof.....	10 ft. 4 1/2 in.
Height from rail to top of ventilator.....	10 ft. 4 1/2 in.
Height from top of rail to top of floor.....	2 ft. 4 in.
Center to center of trucks.....	26 ft.
Center to centre of side posts.....	2 ft. 5 in.

are now in service as 2-man cars.

The left hand central door of the three shown in the trailer illustration is always used as an exit, while that at the right is always used as an entrance. The central doors may be used as either an entrance or exit, but not as both at the same time. On the inside of the car, adjacent to the central door, is a movable bar, which is controlled by the trailer conductor without leaving his seat. In one

position of the bar, the door is an entrance door, and in the other position it is an exit door. The object of this flexibility is to have the trailer present the maximum amount of door accommodation under all traffic conditions. Experience demonstrates that it is usually the case, where there are a large number of passengers to board a car, there are not many to leave, and vice versa, so that the utility of this original central door scheme in facilitating loading and unloading is evident. The door design was originated by D. W. Harvey, Assistant Manager, Toronto Transportation Commission.

Quebec Railway, Light, Heat and Power Co's Annual Report and Meeting.

The report for the calendar year 1922, presented at the annual meeting in Montreal, March 13, shows gross operating earnings, \$2,858,606.76, an increase of \$100,770.40 over 1921; operating expenses, \$2,010,814.62, a decrease of \$63,214.39; and net operating earnings, \$847,792.14, an increase of \$163,984.79. Deducting fixed charges and tax on earnings due Quebec City, left net income of \$289,830.51, an increase of \$202,317.88. A provision of \$182,545.99 was made for depreciation, after which, and \$21,183.60 for bond discount, there was a balance of \$86,100.92, which was transferred to surplus. From the surplus of \$87,512.63 at Dec. 31, 1921, there was deducted \$10,364.34, for income tax on 1921 earnings, leaving \$77,148.29, which, added to the 1922 surplus of \$86,100.92, and the amount previously at surplus account credit, made a total of \$760,149.45 at credit of surplus at Dec. 31, 1922. From earnings, and sale of treasury bonds, \$192,083.99 was provided for construction during 1922; sundry loans and current liabilities were reduced \$333,829.25, and \$135,495.89 was added to current assets, improving the company's liquid position by \$469,325.14. The company built 1.08 track miles of extensions, including a loop at Parent Square and a curve at Crown and Joseph Sts., which enabled a material improvement of service, particularly during the exhibition and race meeting. Ten cars were bought.

President Robert is reported to have stated at the meeting that when he was asked to take over the presidency 11 months ago, he found the company's financial position to be very weak. It was impossible to do any further financing in the face of a fixed mortgage of about \$10,000,000 on the entire property, except by giving a second mortgage, which would have been disastrous. The company was in no position to meet the citizens' reasonable demands for extensions to lines and improvements in services. It was obliged to give notes for city taxes and to borrow money from a bank to pay bond interest, paying such money back gradually. If the company had plenty of money, the refunding of the Montmorency bonds would be an easy matter, but in the present circumstances it was to be expected that not more than market price—the escrow bonds now selling at about \$75—could be obtained. The situation was such that some reorganization plan had to be provided, elastic enough to permit of new financing to be done, and the company put in better shape. The proposal was the formation of two companies, one to take care of the power situation and the other of the railway and gas properties, with

the Quebec Ry., Light, Heat & Power Co. as the holding company. The stock of the two operating companies would be held in the holding company's treasury, so that there would only be one stock on the market. The directors were not prepared to go into any details of what it was proposed to do in the way of reorganization at present, but it was thought that with the separation of the companies, and a fair return upon the money invested in the railway and gas properties guaranteed by such a commission as is in existence in Montreal, there would be no difficulty in arranging finances.

The following directors were elected: E. A. Robert, President; Senator L. C. Webster, Vice President; A. C. Barker, Senator J. P. B. Casgrain, C. G. Greenshields, K.C., J. N. Greenshields, K.C., Lt.-Col. J. E. Hutcheson, Senator D. O. L'Esperance, K. B. Thornton, Hon. A. Turgeon and N. G. Valiquette. The only change in the directors was that Hon. G. E. Amyot resigned, being succeeded by Senator Casgrain. W. J. Lynch is General Manager.

Electric Railway Passenger Fares.

British Columbia Electric Ry. has filed with the Railways Department a local passenger tariff for its Saanich Division, on Vancouver Island, effective April 1. The division is divided into 9 zones, on which there are 31 stations. Sheets of tickets are issued to residents and settlers at 85c.; school children's tickets are issued in sheets of 20 at 55c.; children between 5 and 12 are carried at half fare, the minimum being 5c., but all fares must end in 0 or 5. The B.C. Minister of Railways has approved the tariff.

Calgary Municipal Ry.—We are officially advised that the reduced schedule of fares put in force recently was authorized for 60 days, to find out if the reduction would increase the number of short haul passengers in proportion to the amount of the reduction. The old rates were a cash fare of 10c., with 18 tickets for \$1, 4 for 25c. or 2 for 15c., for adults, and 32 tickets for \$1 for school children. The new schedule provided for a cash fare of 5c., with 21 tickets for \$1, or 5 for 25c., for adults, and 40 tickets for \$1 for school children. A press report stated that, up to Feb. 28, as a result of the experiment, which was started Feb. 10, not only was there no increase in the number of passengers carried, but there was an actual decrease of 37,211, the total number carried under the reduced fare being 835,789, against 873,000 for the corresponding days of Feb., 1922. During the first few days of the trial period, owing to the prevalence of cold weather, the number of passengers increased somewhat, but as soon as milder weather came it fell off heavily. A press report of March 12 stated that it had been decided to return to the former fares. We are officially advised that there was not a sufficient increase in passengers to justify a continuance of the reduced fares.

Kingston, Portsmouth & Cataraqui Electric Ry. Co.—A bill was introduced in the Ontario Legislature recently to confirm a City of Kingston, Ont., bylaw, dated Aug. 22, 1922, amending the company's franchise agreement by substituting a new fare schedule for that authorized by bylaw of May 22, 1916. The new schedule authorizes the company to charge 7c. cash between 6.30 a.m. and 10.30 p.m., and 10c. cash between 10.30

p.m. and 6.30 a.m., with 4 tickets for 25c., good between 6.30 a.m. and 10.30 p.m.; also free transfers and workmen's tickets at 6 for 25c., good between 6.30 and 7.59 a.m., and between 5 and 6.30 p.m. Tickets for children between 5 and 12 years of age are to be sold 8 for 25c. Policemen in uniform and city detectives wearing badges are to be carried free. The bill passed the private bills committee March 21.

Toronto Transportation Commission.—Toronto City Council passed a motion recently, asking the Commission to issue books of 25 tickets for \$1.50, in addition to the books of 50 now sold for \$3.

Two or three months after the Toronto Transportation Commission began operation of the street railway system, a special fare of 7 tickets for 25c. for school children was put in force. The tickets are sold in quantities to school principals, from whom they are obtained by the children. Only children under 16 years of age are entitled to this fare, and each child is liable to be called upon to exhibit to the conductor a certificate to the effect that he or she is legally enjoying the privilege of the reduced fare. Recently the Board of Education petitioned the Commission to raise the age limit from 16 to 18 years, but that was refused, it being held that 16 is a reasonable maximum age. In addition to the reduced fare for school children, the Commission has a children's fare of 10 tickets for 25c., good for children under 51 in. high, which was instituted when the Commission began operating.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.

	Jan. 1923	Jan. 1922	7 mons. to Jan. 31, 1923	7 mons. to Jan. 31, 1922
Gross	\$928,187	\$907,242	\$6,118,759	\$6,100,157
Expenses	620,856	621,472	4,278,853	4,441,005
Net	307,331	285,770	1,839,906	1,659,152

Edmonton Radial Ry.—A local press report states that the net earnings for January were \$3,678, against \$2,806 for Jan. 1922, and that the railway has set aside for reserve account from January earnings \$4,500, against \$2,645 in Jan. 1922.

Port Arthur Civic Ry.—Passenger revenue for February, \$14,038.40, against \$13,405.34 for Feb. 1922. Total revenue for 2 months ended Feb. 28, \$30,086.17, against \$28,050.34 for same period 1922. (Press report.)

Regina Municipal Ry.—The revenue for the calendar year 1922 was \$362,727.84; operating expenses, \$277,907.62; operating surplus, \$84,820.22; capital charges, \$102,367.47; deficit, \$17,547.25. There was an operating surplus in each month of the year, and a total profit in January, February, November and December. The insertion of the word "operating" twice in this information in our last issue, gave the sentence a wrong meaning. A local press report gives the following:—January passenger receipts, \$34,470; passengers carried, 561,999; February, passenger receipts, \$28,985; passengers carried, 449,146, against \$32,306 passenger receipts, 537,870 passengers carried, for January 1922, and \$31,096 passenger receipts, 499,171 passengers carried for Feb. 1922.

Winnipeg Electric Ry.—

	Jan. 1923	Jan. 1922
Gross	\$506,804	\$498,577
Expenses	350,727	163,605
Net	156,077	329,972
Fixed charges	84,679	247,735
Surplus	71,398	82,237

Canadian Electric Railway Association's Executive Committee Meeting.

The C.E.R.A.'s executive committee met in Ottawa, March 9, the President, Major F. D. Burpee, Manager, Ottawa Electric Ry., in the chair. Considerable routine business was transacted. The President reported the appointment of special committees on accounting of maintenance and depreciation of street railway assets; on public relations; on safety, and on standards. The personnel of these committees as first constituted was given in Canadian Railway and Marine World for Oct., 1922, pg. 532, and Jan., 1923, pg. 82, since when the following additions have been made:—Standards committee: H. T. Gibbs, Canadian Westinghouse Co.; W. G. Gordon, Canadian General Electric Co.; Hugh Millar, Lyman Tube & Supply Co. Safety committee: Jas. Lightbody, Publicity Agent, British Columbia Electric Ry.

The previous decision to hold the next annual meeting in Toronto was confirmed and the views of members as to the most suitable dates have been asked, the choice appearing to be between early in June, or some time in July, this year, or early in Jan., 1924. A joint committee of officials of member companies, and of associate members, was appointed to make arrangements for exhibits of railway supplies, etc., during the meeting, as follows:—C. L. Wilson, Assistant Manager, Hydro-Electric Rys., Toronto & York Division; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; H. H. Couzens, General Manager, Toronto Transportation Commission; D. W. Harvey, Assistant Manager, Toronto Transportation Commission; W. J. Radford, Assistant Manager, Toronto Suburban Ry.; D. M. Campbell, Preston, Ont.; W. G. Gordon, Traction Engineer, Canadian General Electric Co.; H. T. Gibbs, Sales Engineer, Canadian Westinghouse Co., and O. C. Rehfus, Mechanical Engineer, Canadian Steel Foundries. W. R. McRae, Superintendent of Rolling Stock and Shops, Toronto Transportation Commission, was appointed chairman of the entertainment committee, with power to select the other members. The President, Major Burpee, was authorized to arrange for papers to be read.

Winnipeg Electric Railway Co's Annual Report.

The company's report for the calendar year 1922 shows gross operating earnings, \$5,395,223.52, a decrease of \$22,800.19 from 1921; operating expenses, before charging depreciation, \$3,526,715.12, a decrease of \$32,664.88; net operating revenue, \$1,868,508.40, an increase of \$6,410.31. Adding miscellaneous income, \$121,853.66, to net operating revenue, made income available to meet fixed charges, etc., \$1,990,362.06, a decrease of \$29,688.35. From this the following deductions were made: Interest charges on debenture stock, bonds, bank loans, etc., \$643,028.15; extinguishment of discount on securities, \$16,000; city percentage and car license taxes, \$175,036.20; taxes, \$164,639.26; miscellaneous non-operating expenses, \$3,783.22; other income deductions, \$52,500.28; total, \$1,054,987.11, leaving net income, excluding depreciation, \$935,374.95. After payment of all fixed charges, and making usual provisions for depreciation, the net

income was \$734,324.95. Deducting dividends on preference stock, \$210,000, and additional allowance for depreciation, \$138,459.84, left \$385,865.11, which was transferred to surplus.

The year was marked by a continuation of the general industrial depression from 1921, with manifestations of improvement in the closing months. The result was a still further drop in number of passengers carried, and a slight decrease in gas sales. A small reduction in fares, made Aug. 1, 1921, to effect a final settlement of litigation with the city, in respect to the Public Utilities Commissioner's 1920 judgment, regarding fares, which was appealed by the city, exerted its influence throughout 1922. This reduction, together with the fewer passengers, caused a decrease of \$151,738 in railway gross earnings. Operating expenses received the benefit of decreases in wages from May 1, and the gas utility received the special advantage of lower coal costs. The advantage of reduced wages to the railway and electric utilities was not sufficient to offset expenses incurred on account of increases in service, and the necessity of using much steam generated power pending completion of the Great Falls power station.

At a shareholders' special meeting, March 19, the issue of \$5,000,000 20-year general mortgage and collateral trust 6% gold bonds was approved. Of the total issue authorized, only \$3,250,000 are being sold. The shareholders' annual meeting was called for April 2.

Electric Railway Employees' Wages, Working Conditions, Etc.

Brantford Municipal Ry.—For some time past negotiations have been going on between the Brantford, Ont., Municipal Ry. Commission and its employees for a revision of the wage schedule, but as an agreement could not be reached, the employees applied to the Department of Labor for the establishment of a board of conciliation, and named Jas. Simpson, of Toronto, as their representative. The present wage schedule went into effect June 1, 1920, the rates per hour being: First year men, 46c.; second year men, 48c.; third year men, 50c.

Calgary Municipal Ry.—The city commissioners were reported recently to be considering the wage schedules of employees of all departments, and to have met representatives of the municipal railway employees, March 6. A report was expected to be considered by the city council by March 31.

London & Port Stanley Ry.—A press report of March 20 stated that a notice has been issued, retroactive to March 16, reducing trackmen's wages from 40c. an hour, plus 10%, to 38c.

London St. Ry.—Employees are reported to be negotiating with the company for the adoption of a seniority list, whereby the senior employees will be given preference in the operation of the one-man cars. The company recently gave notice that operators of one-man cars would be paid 5c. an hour extra.

London St. Ry. Co.—A press report of March 20, stated that the street railway men's union's London, Ont. branch had given notice to its members engaged in the operation of one-man cars that should a lawsuit or manslaughter charge result from a collision with one of these cars, the operator involved need not expect any assistance from the union.

Ottawa Electric Ry.—Employees were

reported on March 15 to have decided to ask for a new wage agreement, to provide for an 8-hour day, with an increase of wages. The existing agreement, which expires April 30, was not signed until Sept. 17, 1922, and was the result of negotiations after the finding of a majority of a board of conciliation which sat in May, and recommended a reduction of approximately 12½% in wages and the continuance of the 9-hour day. Conductors' and motormen's wages under the agreement are, per hour, first year, 43c.; second year, 45c.; third year, 46c.; fourth year and afterwards, 48c. It is stated that the company is prepared to renew the present agreement for another year.

Saskatoon Municipal Ry.—Following the passing of a resolution by the city council authorizing a reduction of the wages of employees, it was reported on March 19, that the men have applied to the Labor Department for a board of conciliation.

Toronto Transportation Commission.—After negotiations, between the Commission's management and the men's representatives, the Commission has agreed to renew its agreement with its conductors and motormen for one year from March 31. The rates of wages per hour are: First 3 months, 55c.; next 9 months, 57½c.; after one year, 60c.; operators of one-man cars 5c. an hour extra. The men, in opening the negotiations, made a number of requests, the most important of which were for 2 weeks holidays annually with pay; time and a half for all work in excess of the regular day's work of 8 hours; that extra men be given a guarantee of 6 hours work, or the equivalent pay each day; seniority for shopmen, and some wage increase for certain other grades, and minor adjustments. The Commission could not see its way to grant any of these requests.

Toronto Railway Arbitration Award Appealed.

As was generally expected, both the Toronto Ry. Co. and the City of Toronto have appealed against the majority award, by Hume Cronyn, K.C., chairman, and Sir Thomas White, representing the company, of the arbitration board appointed to determine the value of the Toronto Ry. Co.'s property taken over by the city on the expiration of the franchise, Aug. 31, 1921. The city was the first to give notice of appeal. The company's notice of appeal asks that the city's appeal be set aside; that the whole matter be referred back to the arbitrators, with instructions that they include in the amount the value of the main office building at King and Church Sts., the Scarborough Beach property, and the St. Lawrence St. property, and some other items which the arbitrators rejected. The appeals were entered in both the weekly court and the Ontario Superior Court's Appellate Division, and were formally mentioned March 14. The City Solicitor is preparing particulars of the grounds upon which the city is appealing, and expects to have them ready for filing early in April.

It is reported that some conferences have been held between the company and city representatives, with a view to a payment being made on account of the award. It is stated that there is no dispute between the parties with regard to items making up about \$7,000,000, out of the \$11,188,500 awarded by the majority report.

Mainly About Electric Railway People.

Albert Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., who has resigned as General Manager, retaining the position of Vice President, was born in Bosanquet Tp., Ont., Aug. 21, 1870. He entered transportation service in 1889, and was to 1891, operator, Michigan Central Rd.; 1892 to 1900, freight and ticket clerk and operator, G. T.R., Detroit, Mich.; 1901, assistant agent, Michigan Central Rd.; 1901 to Nov., 1902, Travelling Express and Passenger Agent, Detroit United Ry.; Dec., 1902, to May, 1903, General Express Agent, Utica and Mohawk Valley Ry.; May to Nov., 1903, Division Superintendent, Detroit United Ry.; Nov., 1903, to Nov., 1907, Superintendent of Employment, Public Service Corporation of New Jersey; Nov., 1907, to May, 1910, General Express and Passenger Agent, New York State Railways, Syracuse and Utica, N.Y.; May, 1910, he was appointed General Manager, and in 1914, also Vice President, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont. He was Vice President, Canadian Electric Railway Association, 1917-1918; President, 1918-1919, and was Honorary Secretary-Treasurer, Dec. 4, 1919, to Jan. 31, 1921. He intends to go into business for himself, and will open an office in Windsor, Ont.

Mrs. Fearman, wife of Lt. Col. G. D. Fearman, Chief Accountant, Dominion Power & Transmission Co., Hamilton, Ont., died there, March 4.

George C. Graham, who has been appointed Superintendent of Power and Equipment, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., was born at Ottawa, Ont., and entered electric railway service in 1902, since when he has been, to 1908, Superintendent of Rolling Stock, International Ry., Buffalo, N.Y.; 1908 to 1911, Superintendent of Shops, United Traction Co., Albany, N.Y.; 1911 to 1914, Superintendent Shops and Equipment, Los Angeles Pacific Co., Los Angeles, Cal.; and since Sept. 1921, Superintendent Shops and Rolling Stock, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont.

R. M. Hannaford, heretofore Assistant Chief Engineer, Montreal Tramways Co., Montreal, has been appointed acting Chief Engineer, vice W. F. Graves, Chief Engineer, resigned.

J. J. McWilliam, Division Superintendent, Dundas Division, Toronto Transportation Commission, died at Toronto, March 4, after a short illness. He entered the Toronto Railway Co.'s service in 1886 as conductor, and was made inspector in 1892, car starter in 1898, and Divisional Superintendent in 1906.

H. H. Pitts, who had been a director of the Toronto Ry. Co. for several years, died suddenly in Ottawa, March 8, aged 64. He was formerly a newspaper publisher in Fredericton, and a member of the New Brunswick Legislature, but moved to Ottawa in 1901, where he became President of the People's Gas Co., manufacturers of acetylene gas generators, etc. He was buried at Fredericton.

Paul Seurot, Chief Engineer, Montreal Tramways Commission, addressed the Engineering Institute of Canada's Montreal Branch, recently, in French, on "Causerie sur l'exploitation des tramways de Montreal."

W. Y. Soper, Vice President, Ottawa Electric Ry., is spending some time in North Carolina.

G. L. Snelling, Secretary-Treasurer, Ottawa Electric Ry., and Mrs. Snelling, left Ottawa, March 6, to spend some time in Cuba.

Electric Railway Notes.

The New Brunswick Power Co. is considering purchasing 10 Birney safety cars.

The Cape Breton Electric Co. is considering buying 8 one-man Birney type safety cars, and 2 snow sweepers.

The New Brunswick Power Co. has ordered 125 tons of rails, from the United States Steel Products Co.

Calgary, Alta., City Council is reported to have authorized the purchase of 80 car wheels for the municipal railway.

Kingston, Portsmouth & Cataract Electric Ry. is, we are officially advised, in the market for 1,300 ft. of 90 lb. rails, A.S.C.E. section. H. C. Nickle is General Superintendent, Kingston, Ont.

Woodstock, Ont., City Council called upon the Woodstock, Thames Valley & Ingersoll Electric Ry. recently to provide sleighs, wagons or other conveyances for public use, in case its cars were unable to run owing to snow, in accordance with the franchise.

Port Arthur Public Utilities Commission has, it is reported, decided to provide each conductor on the civic railway with \$30 for use in making change, for which notes are to be given by the conductors. Heretofore conductors have had to provide their own funds for change.

The Winnipeg Electric Ry. Co., a press report states, spent \$17,200 for snow removal for the three months ended Feb. 28, against \$6,100 for the corresponding three months of 1921-22. The heaviest snowfall occurred March 8 and 9, and it is expected that the total cost of snow removal for this winter will be about \$25,000.

The Calgary, Alta., Municipal Ry. department is reported to have paid \$9,800 in sick benefits to employees during 1922. The city commissioners have under consideration proposals for the examination of all men taken on in future, as to their physical condition, with a view of reducing the claims for sick benefits.

Two of the one-man cars operated on the Hydro Electric Railways, Essex Division, in Windsor, Ont., took fire within 10 minutes of each other while in service on March 11. One of the operators was burned rather seriously about the hands and arms. A press report states that an investigation made by the chief of the fire brigade showed that the fires were due to short-circuiting.

The Hydro Electric Rys., Essex Division, is reported to have bought a larger freight car than that used heretofore to transport beer from breweries in Windsor and Walkerville, Ont., to the Detroit River shore, whence it is exported to the United States. It is stated that the beer car is in service 16 hours a day; that approximately 10,000 cases of beer are carried daily, and that the receipts from the traffic are sufficient to pay the cost of depreciation on the entire system.

A bill was introduced in the Nova Scotia Legislature recently to change the rule of the road in the province, to conform with the rest of the Dominion, the change to take effect April 2. An act was passed for this purpose in 1922, the change to be made at the beginning of 1923, but it was found that some technical matters had not been attended to, and the N.S. Government asked the Dominion Government to disallow the act, which was done. It was reported

that the N.S. Tramways & Power Co. would ask for the fixing of a later day for the coming in force of the new rule, in order that it might have time to change its cars, crossovers, etc.

The body of the Brantford & Hamilton Electric Ry.'s car 210 was totally destroyed by fire on March 13, the circumstances being somewhat unusual. The car was entering the switch at Cainsville, Ont., at about 9 p.m., when the trolley wire, which had been pulled loose from the hanger by a preceding car, struck the stove pipe in the car, and grounded through the car, setting it on fire. Ordinarily, the car would have broken the contact, and the fire would not have occurred, but for some reason the motors were short circuited by the contact, and the car burned where it stood. There were but a few passengers and no one was injured.

D. W. Houston, Superintendent, Regina, Sask., Municipal Ry., addressed the Northside Ratepayers' Association there recently on operating expenses. He stated that the total expenditure on the railway for 1922 was \$277,907.62, which included the converting two-man cars into one-man cars at a cost of over \$1,000 a car. This, together with other special expenditures, will not have to be met this year, which will better the situation somewhat, but still the general costs of operation, especially the provision of power, will continue to be somewhat high. The surplus for 1922, after meeting operating charges, was \$84,820, and the deficit was caused by interest charges on debentures. A number of questions were asked by ratepayers, which resulted in some interesting information being given. The present cost of power is 1.3 cents a kilowatt hour; car heating costs \$4,000; car tickets and transfers cost \$3,582; revenue from advertisements in cars and on car tickets brought in \$4,274.35; injuries and damages cost \$4,994; office maintenance cost \$10,000; cars last from 10 to 15 years; and those now in service are about 10 years old. (From press report.)

FOR SALE Construction Plant

The Commission offers for sale the following Construction Equipment. Sealed tenders, addressed to the Chairman, endorsed "Tender for Construction Equipment," will be received at the offices of the Commission, Public Utilities Building, until noon of April 16th. Tenders to be based on acceptance of plant as and where located.

- 1 Thew Revolving Shovel, 1 1/4-cubic-yard dipper; traction wheels.
- 1 Thew Revolving Shovel, 3/4-cubic-yard dipper; traction wheels.
- 1 Marion Revolving Shovel, 1 1/4-cubic-yard dipper; traction wheels.
- 13 Two-way Dump Cars, 3-foot gauge; 4 cubic yards capacity.
- 1 20-ton capacity McMyler Interstate Locomotive Crane; railroad trucks.

Each tender must be accompanied by a cheque for 5% of the offer, payable to the Toronto Transportation Commission, and accepted by a Canadian chartered bank.

The highest or any tender not necessarily accepted.

H. H. COUZENS,
General Manager,
TORONTO TRANSPORTATION
COMMISSION.

Marine Department

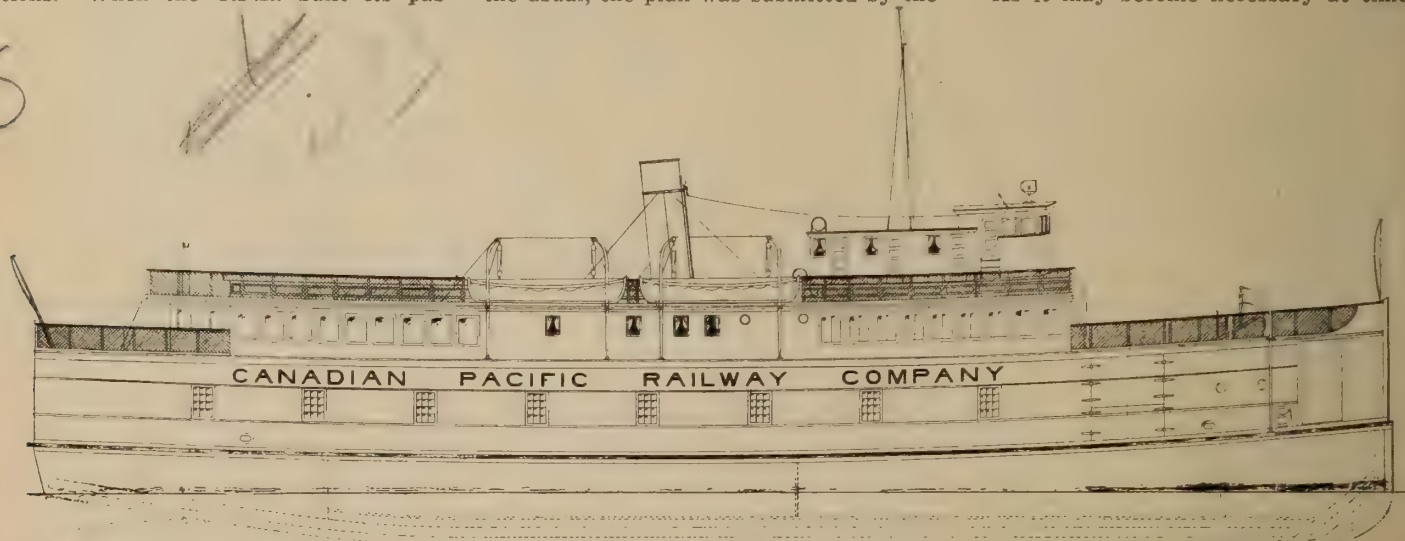
Canadian Pacific Railway Motor-Car Ferry to Vancouver Island.

With the improvement of highways, particularly in Washington, Oregon and California, and the gradual completion of paving on the Pacific Highway, an increasing number of tourists are arriving at the coast, seeking new fields to explore, and as Vancouver Island is widely known as a most attractive playground, with good roads from Victoria, to Campbell River on the north, and to Alberni, on the Alberni Canal; with timbered areas, fine streams for fishing, etc., the motor car tourist naturally wishes to extend his trip, taking in these attractions. When the C.P.R. built its pas-

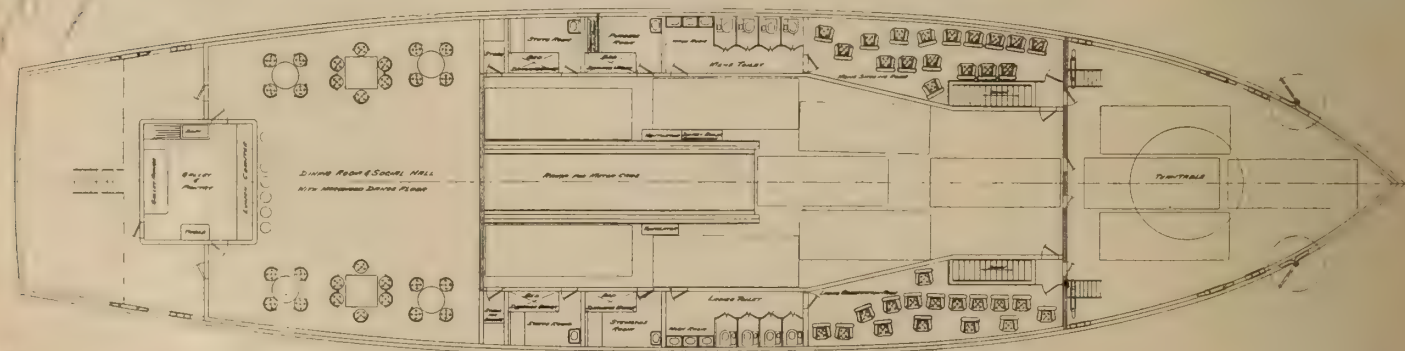
In order to meet the situation, the C.P.R. decided to build a ferry for the purpose, and tentative plans were prepared by its staff, and numerous designs were submitted by builders. Finally the contract was placed with Yarrows, Ltd., Esquimalt, B.C., to build a fast ferry, which would carry from 35 to 45 cars, according to their size. The ship is being built of wood, and is of V-bottom construction. The length of the hull is 170 ft. overall, moulded breadth 42 ft. 8 in., depth 11 ft. 5 in., and as the dimensions and design were somewhat out of the usual, the plan was submitted by the

with 6 cylinders of the 4-stroke cycle reversible marine heavy duty type. Ordinary California fuel oil, as furnished for oil burning steam vessels on the Pacific coast generally, will be used. The engines will develop 600 b.h.p. at 200 r.p.m., and have been built to Lloyd's Register. The tail shafts, brackets and propellers, which will be of bronze, are being built by Yarrows, Ltd., and the entire machinery installation will be made by that company under the direction of a representative of the McIntosh & Seymour Co.

As it may become necessary at times



Motor-Car Ferry Steamship, British Columbia Coast Service, Canadian Pacific Railway.



Upper Deck Plan, Motor-Car Ferry Steamship, British Columbia Coast Service, Canadian Pacific Railway.

senger steamships for British Columbia service some years ago, the motor car had not developed, and was not in evidence so far as transportation was concerned, therefore they were not designed with side ports sufficiently large to accommodate automobiles, with the result that it was necessary to lower the tops and take off wind shields before cars could be taken on board. During the last year or two, the number of enclosed cars has increased greatly, and it became apparent that if any considerable number of tourists were to make the Vancouver Island trip, some better method of ferrying must be provided. Last summer two improvised boats were used as ferries between Anacortes, Wash., and Sidney, Vancouver Island, and quite a large number of cars were ferried in this way.

builders to Dr. G. S. Baker, O.B.E., Teddington, Eng., where experiments were made in the William Froud national tank, and a set of lines were developed suited to the ship. It is expected that a speed of nearly 14 knots an hour will be obtained.

The accompanying cross section plan shows the arrangement for carrying cars on two decks. At the bow, cars will be loaded on both upper and main decks, direct from the shore, and at the stern they may load or leave only from the main deck. A ramp is being provided to enable cars to pass from one deck to the other within the boat. The ramp is arranged directly over the main engines, and will, therefore, not waste any space. The boat will be propelled by full Diesel twin screw engines, built by McIntosh & Seymour Co., Auburn, N.Y.,

to operate the ship on routes where rough water may be encountered, she is being built to Lloyd's classification throughout, and under special survey, and will be ship-shape forward, to keep the decks dry in a head sea. Comfortable seating arrangements are being made for those who do not care to remain in their cars. Large observation windows are provided on both sides. The deck plan shows a dining room with convenient kitchen arrangements, where meals and refreshments will be served a la carte. This room will have a maple floor, which may be used for dancing.

The route decided upon for the ferry service is between Bellingham and Sidney, Vancouver Island, about 42 nautical miles, and passes through numerous channels and passages, with scenic beauty unsurpassed in Puget Sound and

British Columbia waters. From Sidney to Victoria the distance by paved road is about 18 miles. It is expected that the ship will be ready for service by May 15.

Mail Subsidies and Steamship Subventions Estimates.

The estimates for the year ending March 31, 1924, submitted to the House of Commons recently, contain the following items for steamship services between the points named:—

Atlantic Ocean.	
Canada and Newfoundland.....	\$35,000.00
Canada and West Indies and South America, or both.....	340,666.66
Canada and South Africa.....	146,000.00

Pacific Ocean.	
Canada and New Zealand on the Pacific Ocean.....	\$130,509
Prince Rupert, B.C., and Queen Charlotte Islands.....	21,000
Victoria and San Francisco.....	3,000
Victoria, Vancouver, wayports and Skagway.....	25,000
Victoria and West Coast Vancouver Island.....	15,000
Vancouver and Northern ports of B.C.....	24,800
Vancouver and ports on Howe Sound.....	5,000

Quebec or Montreal, and Gaspé and ports on south shore of Gulf of St. Lawrence	30,000
St. Catherine's Bay and Tadoussac, winter service.....	2,000
St. John and St. Andrews, calling at intermediate points.....	4,000
St. John, and Bear River, and other wayports.....	2,000
St. John and Bridgetown.....	1,500
St. John and Digby.....	15,000
St. John, Digby, Annapolis and Granville, along west coast of Annapolis Basin.....	2,000
St. John and ports on Bay of Fundy and Minas Basin.....	8,500
St. John and Wedgeport.....	5,000
St. John, Westport and Yarmouth and other wayports.....	10,000
Sydney and Bay St. Lawrence, calling at wayports.....	9,000
Sydney and Whycomagh.....	13,000
Sydney and Bras d'Or Lake ports, and ports on west coast of Cape Breton.....	14,000
Inspection of subsidized steamship services.....	4,500
	\$1,128,275

Canada Steamship Lines' Report.

Canada Steamship Lines, Ltd., report for the calendar year 1922 has been issued. The total revenue was \$11,614,870.97, or \$1,171,808.75 less than in 1921, due largely to loss of 569,365 tons of

000, were cancelled, and an equivalent amount of 20-year first mortgage collateral sinking fund 7% gold bonds were issued and sold. The company also sold 4-5 year notes for \$850,000.

The surplus account at Dec. 31, 1922, was \$2,902,685.41, or \$708,034.11 less than in 1921. From leases, contracts and goodwill, \$1,424,646.79 was written off, and a surplus of \$330,366.52 arising from sinking fund purchases of debenture stock was transferred. The drastic writing down followed one of upwards of \$5,000,000 in 1921.

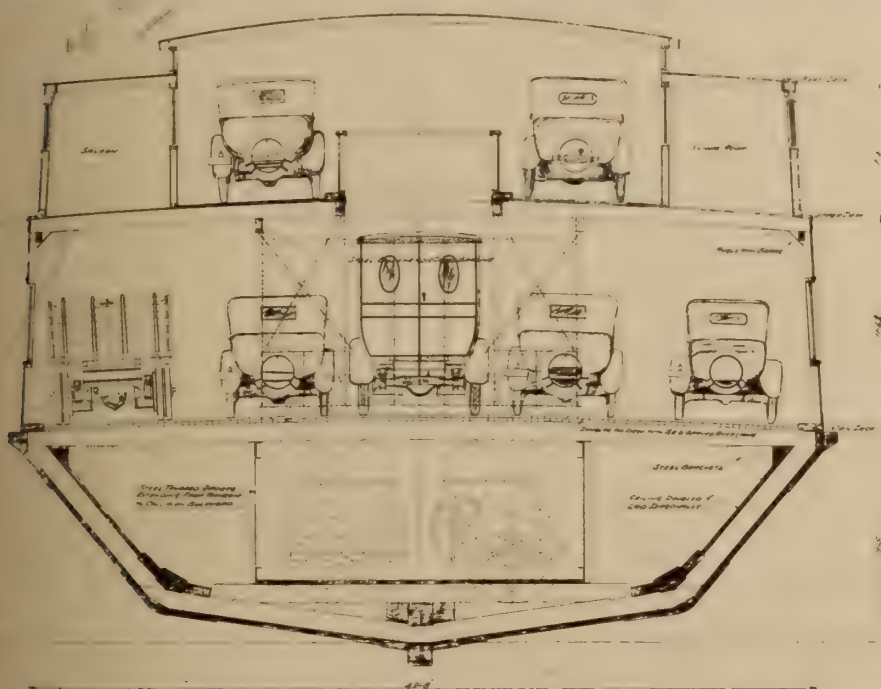
The company bought, on July 1, 1922, 4,266 shares of Century Coal Co., Ltd., and \$430,000 of its first mortgage bonds, and paid off that company's bank loans, aggregating \$700,000, thereby discharging Canada Steamship Lines' contingent liability of \$1,000,000, on account of notes endorsed for its allied company. All Century Co. bonds and shares are now owned by Canada Steamship Lines.

The condition of the company's physical property is satisfactory, and a large new passenger steamship, to be named Richelieu, will be in operation about July 1.

The s.s. Monte Grappa Disaster.

The Minister of Marine, Mr. Lapointe, stated in the House of Commons recently in answer to a question by H. Deslauriers, St. Mary, Montreal, that the Government had no information to the effect that the foundering of the Italian steamer Monte Grappa, in mid-Atlantic, on Nov. 14, 1922, was brought about by improper stowage of her cargo taken on board at Montreal. The Government is fully satisfied that the casualty has not cast any reflection on the harbor. There is no authority for holding an enquiry into a casualty of this nature. See Revised Statutes, chap. 113, sec. 776. If a definite charge should be made charging any person or persons with improper conduct in connection with the stowage of cargo, the necessary authority would be obtained to hold an enquiry under the terms of the Inquiries Act. In answer to the questions: "Is it not a fact that the Port Warden and Deputy Port Warden at Montreal are incapable of speaking French, although the majority of those employed loading and discharging vessels at Montreal are French-Canadians, and whether in the event of future appointments being made to the Port Wardens' staff, will the Government give an undertaking that a person capable of speaking French is appointed," the Minister replied: "The Secretary of the Montreal Board of Trade advises that neither the Port Warden nor Deputy Port Warden speak French. The appointments are made by the Montreal Board of Trade under the provisions of the Port Warden's Act, Statutes of 1882, chap. 45."

Steamship Launched in England for Canada.—The first of the 10 Welland Canal size steamships ordered by Eastern Steamship Co., Buffalo, N.Y., and Port Colborne, Ont., in Great Britain, details of which were given in Canadian Railway and Marine World for February, page 91, was launched by Earle's Shipbuilding & Engineering Co., Hull, Eng., March 16, and named Robert W. Pomeroy. This company is building 2 of the 10 ships ordered, and the second is on the stocks and the work well advanced. According to the contracts, all the ships are to be ready for delivery by the beginning of May.



Midship Section, Motor-Car Ferry Steamship, British Columbia Coast Service, Canadian Pacific Railway

Local Services.

Baddeck and Iona.....	\$ 9,000
Charlottetown and Pictou.....	8,000
Charlottetown, Victoria and Holliday's wharf.....	4,000
Grand Manan and the mainland.....	15,000
Halifax, Canso and Guysboro.....	9,000
Halifax, LaHave and LaHave River ports.....	6,000
Halifax and Newfoundland, via Cape Breton ports.....	5,000
Halifax and Spry Bay, and ports in Cape Breton.....	6,000
Halifax, South Cape Breton, and Bras d'Or Lake ports between.....	6,000
Halifax and West Coast of Cape Breton, calling at wayports.....	6,000
Mainland and islands of Miscou and Shippegan.....	3,300
Mulgrave and Canso.....	13,500
Mulgrave and Guysboro, calling at intermediate ports.....	9,500
Newcastle, Neguac, and Escuminac, calling at intermediate points on Miramichi River and Bay.....	5,000
Peelee Island and mainland.....	11,000
Mulgrave, Arichat and Petit de Grat.....	10,000
Pictou, Montague, Murray Harbor and Georgetown.....	6,000
Pictou, Mulgrave and Cheticamp.....	11,000
Pictou, New Glasgow and Antigonish Co. ports, schooner service.....	1,500
Port Mulgrave, St. Peters, Irish Cove and Marble Mountain, and other ports on Bras d'Or Lake.....	8,000
Pictou, Souris and Magdalen Islands.....	24,000
Quebec, Natashquan, Harrington, and other ports on north shore of the Gulf of St. Lawrence.....	85,000

coal traffic caused by coal miners' strike, to loss of passenger traffic caused by railway strikes, and to serious port congestion which prevented prompt dispatch. Expenses were \$9,574,122.53, or \$859,978.15 less than in 1921. Net earnings, before interest, depreciation and taxes, were \$2,040,748.44, or \$311,830.60 less than in 1921. The profit, after all charges and reserve, was \$429,910.72, or \$349,932.68 less than in 1921. The balance left available for dividend purposes was equivalent to 3.41 on the preferred shares, or slightly less than half the amount required for the full payment of the dividend. Current liabilities were reduced by merely \$4,000,000, against a reduction of about \$1,000,000 in current assets. The bank loan item of \$1,944,318 in 1921 has been wiped out.

Through operation of sinking fund, \$376,210.88 5% debenture stock was retired. Underlying first mortgage bonds, against which cash had been deposited for redemption, were reduced from \$523,046.71 to \$59,460.00. The company's 10-year serial first mortgage bonds, which had been issued for \$6,000,-

Wage Dispute, C.P.R. British Columbia Lake & River Service.

Toward the latter part of 1922, the C.P.R. British Columbia Lake and River Service employees applied for the appointment of a board of conciliation, to enquire into their wages and working conditions. A board was appointed, consisting of R. S. Lennie, chairman; E. A. James, for the C.P.R., and John Fyfe, for the employees, who comprised ship masters, mates and engineers. The complaints covered the company's refusal to acknowledge committees of the men's organizations, readjustment of the basic rate of pay, and to be made retroactive, change of working conditions to allow of one free day in seven, establishment of a system of seniority, that the men be rated as steamship men, and that they should be allowed subsistence in home ports when ships are unable to supply them with meals.

The service consists of passenger and tow boats on the Kootenay, Slocan, Arrow and Okanagan Lakes, making connections between various points on the railway. This service has no connection with, or similarity to, the company's British Columbia Coast Service, the operation of which is entirely separate from that of the railways. The matter was handled for the company by F. W. Peters, General Superintendent, and C. A. Cotterell, Assistant General Superintendent, British Columbia District, and by E. Reed, Secretary, National Association of Marine Engineers, and A. Goodlad, Secretary, Pacific Division, Canadian Navigators' Federation, for the men.

After the evidence was in, F. W. Peters, speaking for the company, stated that the officials were willing to meet a committee of the company's own men at Nelson, B.C., to discuss working conditions, and he believed that any objections there were to the working conditions could be removed, not perhaps all the men desired, but as near that as was reasonably possible. As to the proposal that the 10% reduction be restored, he stated that the reduction could be justified, in view of the rates paid in other directions, and the company could not consider restoring that reduction, nor any part of it.

The board recommended unanimously, that one free day in seven be allowed each officer, and when this could not reasonably be done, that such days be cre-

ditied to the man and allowed another time; that the principle of seniority be recognized in the creation of responsible positions as far as possible, except for special reasons; that the company's general rule of recognizing only men in its employ in negotiations should be satisfactory to the men; and that, in view of the fact that the men's board is, admittedly included in their wages, a subsistence allowance be made to engineers in their home port, when they are on duty, and unable to secure their board on

Dominion Marine Association.

Honorary President, A. A. Wright, President, Tidewater Shipbuilders, and Vice President and Managing Director, Davie Shipbuilding & Repairing Co., Montreal.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Montreal.

First Vice President, Hon. L. C. Webster, President, Webster Steamship Co., Montreal.

Second Vice President, G. J. Madden, George Hall Coal Co. of Canada, Ogdensburg, N.Y.

Executive Committee, The President, First and Second Vice Presidents, and W. E. Burke, Canada Steamship Lines, Montreal; Yvon Dupre, Sincennes-McNaughton Line, Montreal; M. J. Haney, Canada Steamship Lines, Toronto; A. E. Mathews, Mathews Steamship Co., Toronto; W. J. McCormack, Algoma Central Steamship Co., Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; John Waller, Keystone Transports, Montreal; Honorary members, L. L. Henderson and A. A. Wright, Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

the boat when she is laid up for repairs, and that the amount suggested, viz., \$1.50 a day, is reasonable in the circumstances. The company accepted the board's recommendations.

Bay Steamship Co's Steamships.

The 10 steamships which were sold by the Anderson Co. to interests connected with the Ogilvie Flour Mills Co., and which were formerly owned by the French Government, as mentioned in

Canadian Railway and Marine World for February, have been renamed, and individual companies have been incorporated to own them. The Bay Steamship Co. Ltd., the incorporation of which was announced in our last issue, will be the operating company. The 10 ships mentioned are of steel, of the following principal dimensions: length 217 ft., breadth 34 ft., depth 14 ft. 5 in., and they have 3 cargo hatches. They are equipped with triple expansion engines, with cylinders 12, 20 and 31 in. diam. by 16 in. stroke, 700 n.h.p., and are supplied with steam by two boilers. The machinery in each case is placed aft.

Ashbay Steamship Co., Elmbay Steamship Co., Pinebay Steamship Co., Birchbay Steamship Co., Beechbay Steamship Co., Maplebay Steamship Co., Poplarbay Steamship Co., Palmbay Steamship Co., Sprucebay Steamship Co., Willowbay Steamship Co., Yewbay Steamship Co., and Oakbay Steamship Co., all limited, have been incorporated under the Quebec Companies Act, with \$20,000 authorized capital each, and offices at Montreal, to own and operate ships and carry on a general navigation and transportation business. The incorporators are: F. B. Common, L. H. Ballantyne, C. R. McKenzie, F. G. Bush, and G. R. Drennan, Montreal.

Toronto Harbor Commission.—R. S. Gourlay, who has been a member of the Toronto Harbor Commission for some 12 years, having been appointed by the Dominion Government, on the Board of Trade's nomination, has desired for some time to retire, so that he might be succeeded by a younger man, and he decided in February to tender his resignation, but owing to his familiarity with the Commission's work, and his undoubted capabilities, he has been urged by colleagues to continue at least for this year, especially as the Chairman, R. Home Smith, expects to go to Great Britain in April, for some little time, and it is desired that Mr. Gourlay should act as Vice Chairman during his absence. Mr. Gourlay's resignation is in the hands of the Board of Trade, but is not likely to be sent to Ottawa for a time at least.

Transportation to Labrador.—A Sydney, N.S., press dispatch says that W. N. Macdonald, steamship owner, has made a contract with Labrador Gold Fields, Ltd., to transfer 5,000 men and 100,000 tons of freight, from Sydney to the reported gold fields in Labrador.

Ships Registered in Canada in December, 1922.

In compiling the following lists of ships registered, steamboats and motorboats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, n.h.p. etc.	Owner or Managing Owner
138378	Constitution (1)	Sarnia, Ont.	Greenbay, Wis. ....1900	60.0	16.4	7.8	41	18	—	Reid Towing & Wrecking Co., Montreal.
150235	J. C. Ford	Sault Ste. Marie	Grand Haven, Mich. ....1889	172.0	32.9	12.0	432	156	80 Sc.	Sarnia Coal & Dock Co., Sarnia, Ont.
150779	Master	Vancouver, B.C.	Vancouver, B.C. ....1922	70.5	19.7	9.3	91	33	Sc.	H. Thorsen, Vancouver, B.C.
150767	Mighty Mite	Vancouver, B.C.	Vancouver, B.C. ....1922	53.3	14.7	7.2	42	10	Sc.	C. T. F. Grantholm, Vancouver, B.C.
142096	Sagamore	Sydney, N.S.	Bath, Me. ....1888	164.4	26.2	13.2	351	141	67 Sc.	T. F. Mahoney, Sydney, N.S.
140953	T. P. Phelan (2)	Port Arthur, Ont.	Three Rivers, Que. ....1918	241.0	41.0	14.4	1,320	769	65 Sc.	H. St. C. Scarth, Winnipeg, Man.

(1) Formerly a sailing ship. (2) Recovered wreck.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
130796	A. H. No. 1 (1)	Vancouver, B.C.	Scow	(New Westminster, B.C. ....1907 (Vancouver, B.C. ....1922)	74.4	26.1	6.9	113	113	Mrs. John Hammink, New Westminster, B.C.

(1) Formerly K. & W. No. 8.

Enquiry Into Alleged Combine Among Great Lakes Steamship Owners.

The sittings of the commission, consisting of S. J. McLean, L.L.B., Assistant Chairman, Board of Railway Commissioners; Brig.-Gen. T. L. Tremblay, and Levi Thomson, at Winnipeg, were concluded Feb. 23, most of the evidence given being summarized in Canadian Railway and Marine World for March. Final evidence there showed that 266,917,000 bush. of wheat were shipped out of Fort William by lake steamships, of which 96,982,000 bush. were for Canadian ports, and 129,935,000 for U.S. ports. Of the total, 174,000,000 bush. were chartered by two brokerage firms, viz.: Standard Shipping Co. (including Western Shipping Co.) and Tomlinson Shipping Co., and these firms chartered all but 4,000,000 bush. of the Canadian shipments, and 42,000,000 and 40,000,000 bush., respectively, of the U.S. shipments. It was claimed that the evidence established that there was a control of lake shipping, with the Standard Shipping Co. predominating. Other evidence showed that one firm shipped 22,000,000 bush., on which \$137,000 insurance was paid, the brokers' commission on the insurance being 35%, or \$41,000. A saving of \$11,000 could have been made by placing the insurance with outside companies, and paying the brokers the same commission, and \$18,000 more could have been saved by only paying the brokers commission on the lower insurance rate. R. D. Smith, ship broker, Winnipeg, stated that he had negotiated an arrangement with A. E. Mathews, Mathews Steamship Co., Toronto, regarding the chartering of that company's ships, but that it fell through, and subsequently he was unable to obtain space on any Canadian ships. He was approached later by L. H. Wolvin, Standard Shipping Co., to sign an agreement of brokers to the effect that no charters would be made unless insurance was effected, but he declined, and was eventually threatened with elimination from the business.

L. H. Wolvin, Standard Shipping Co., towards the conclusion of the Winnipeg sittings, stated that the suggestion to form a chartering committee came from James Stewart, in 1917, subsequent to the lake carriers refusing to join a lake mobilization scheme of Canadian and U.S. lake ships, which, in his opinion, meant the turning over of Canadian ships to U.S. owners, though, of course, there would have been a Canadian representation on the committee. He stated that the first cause of the congestion at Georgian Bay ports is at Montreal, and there was congestion, from the opening to the close of navigation. He had known 60 ocean steamships in Montreal harbor waiting to be loaded, with 25, or more, canal ships, with grain from Port Colborne, lying around, and, at the same time, 3,000 cars of grain on the tracks, with the elevators at Bay ports blocked. Montreal needs two or three times the facilities it now has. It is not a question of being able to get grain there; the neck of the bottle is too small. Tonnage was booked ahead, during the winter, for movement at the opening of navigation, or a few days thereafter, and these contracts had to be carried out. Contracts were made in the U.S. for loading and holding grain there during the winter, with the option of sending to Buffalo or Port Colborne, and on the opening of navigation, these cargoes were rushed to Port Colborne, and thus manufactured,

for Canadian ships, a real congestion problem.

H. J. Symington, K.C., counsel for the commission, on being asked by counsel for the shipping interests, as to the line future evidence might take, stated that from the evidence then in, he thought that there was proof of a combine of ship owners, and that an arrangement as to rates had been established.

The commission visited Fort William, Feb. 26, where evidence was taken covering grain shipments, and the decline in the package freight made, and spent some time during early March in Duluth, Milwaukee, Chicago, Cleveland and Buffalo, for the collection of statistics, etc., which were to be classified and analyzed for its use.

Sittings were resumed at Montreal March 12, when E. N. Todd, Freight Traffic Manager, C.P.R., stated that certain U.S. trunk railways had suggested cutting rates on grain, at and east of Buffalo, to U.S. Atlantic ports, and he had obtained the aid of lake carriers to explain the limitation of the all-water route. The U.S. roads claimed that too much grain went by water to Montreal in 1921. He emphasized the necessity of more elevator capacity at Montreal, which, he claimed, is the only reason for congestion. With reference to the rate meeting at Toronto, May 3, he had been invited to attend, but took no part in the discussion on rates. He identified an agreement, based on the minutes of the meeting, whereby rates were arranged between five trunk lines and the lake shipping companies, from Fort William and Chicago to points east. There was no suggestion that the at and east bay rates were not reasonable; in fact the export rate was regarded as a very low basis. He considered that railway at and east Buffalo rates were reasonable.

T. R. Enderby, Operating Manager, Canada Steamship Lines Ltd., gave particulars of the change in conditions which resulted in an increase of approximately 25% in rates, and of the business conducted at meetings in Toronto and New York, including the method used in establishing rates with regard to operating costs, and competition to and from various lake ports, so as to hold a fair share of the business. He said that a loss from May to July had caused an increase in the rates. He presented statistical statements of costs and earnings for Canada Steamship Lines, which will be proved later. He characterized statements as to discrimination as nothing but malicious chatter on the Winnipeg Grain Exchange. He stated that negotiations had taken place with the Maple Leaf Milling Co., for the use of its unloading apparatus at the same rate as charged at the Government elevator, at Port Colborne. The Government rate was \$4.35 a thousand bushels, to take grain out of upper lake ships, and \$1.15 to load it into lower lake ships, a total of \$5.50. The Maple Leaf Milling Co. charged \$5 more than that per thousand bushels. No diversion of grain had taken place. He gave numerous details of the effects of the tide, age and fuel capacity of the ships, etc., in relation to the operating costs and grain carrying, and also mentioned the competition of 475 U.S. ships, as against 42 Canadian ships. He stated that the information given to the Minister of Trade and Com-

merce, which led up to the suspension of the coasting laws, was so hopelessly inaccurate, that he had asked the Standard Shipping Co. to have some shippers wire the Minister the correct information. Under cross examination, regarding the Maple Leaf Milling Co.'s elevator charges, he stated that, in some cases, his company paid the additional charges, and in others it did not, as arranged on a particular business, and that it would probably be correct to say that on about 50% of the business handled for it by the Maple Leaf Milling Co., half a cent a bushel was paid, and in other cases, it would be as arranged. He did not wish to do the company an injustice, and would produce the record. A contract produced, with the Standard Shipping Co., for 1,000,000 bush., to Buffalo at 1½c., was a standby contract, made in Jan., 1922, so as to have some work ahead.

A. A. Wright, Honorary President, Dominion Marine Association, and formerly Managing Director, St. Lawrence & Chicago Steam Navigation Co., now absorbed by Canada Steamship Lines Ltd., stated that he did not believe that a common rate could be fixed for water carriage. Anyone carrying grain at 2c. or 2½c. to Buffalo in May, 1922, would have lost money. He did not look upon giving one particular shipper a lower rate than others, in return for some future possible favor, as a discrimination. He estimated that the price of wheat delivered from the local elevator in the west to a continental market, per 1,000 bush., would be \$391.51, out of which, the lake steamship, carrying all the way to Montreal from Fort William, would get \$82.92, and the raising or lowering of the freight rate would not affect the farmer, because the price he got for his grain was based on the value that the shipper would get in Europe, less the cost of getting it there through the Buffalo-New York line, which is the only way he can ship all the year. In cross examination, he stated that lake freight rates could not be controlled, and that the suspension of Canadian coasting laws, while the U.S. coasting laws remained in force, would destroy Canadian shipping. He stated that a ship, returning light, would earn \$9,000 the round trip, for 8 days, and with a return cargo it would earn \$13,900 in 11 days; the only extra expense would be the additional coal consumed.

W. H. McLean, Manager, Hutchinson & Son, Cleveland, Ohio, stated that by reason of unemployment in the ore and coal business, U.S. steamships went into the grain business. He considered that the congestion was caused by lack of terminal facilities. The rate of 3c. from Fort William to Port Colborne was, under the conditions existing, a low one, and the rate of 2c. or 2½c. to Buffalo, was a losing one under any conditions. It is generally accepted on the U.S. side that it costs more to operate U.S. ships than Canadian ones of similar size. Bunker coal increased from \$5 to \$11 at the peak, and therefore a 25% increase in grain rates was not unreasonable. Shipping brokers in Cleveland were paid on the basis of 20c. per 1,000 bush. carried. When the coasting laws were suspended in 1917, under war conditions, there was a difference in the rates, as both countries were affected, but if Canadian laws were alone suspended, it would

be disastrous to Canadian shipping, as a large fleet of U.S. ships would go into the grain carrying trade, when the ore and coal business slacked about November, if the rates were attractive, but some fleets would not engage in the grain business under any consideration. His company's ships carried grain last season at the 2c. rate and lost money. In carrying at that rate, he calculated the revenue for a round trip as \$3,900, and the cost, \$7,200, a loss of \$3,300.

J. A. Jamieson, engineer, Montreal, specializing in grain elevator construction, stated that the congestion could be traced directly to the inability to handle the volume of grain at Montreal. The port had been developed along lines of catering to ocean steamships, and is poorly equipped for handling small cargo steamships, tramps and grain carrying steamships into Montreal. The remedy is increased capacity of the terminal loading elevators, especially in the lower St. Lawrence and Montreal, or Quebec. This would have the effect of lowering rates, as quick dispatch meant low carrying rates.

Frank Chamberlain, ship agent, Chicago, Ill., stated that a ship of 300,000 bush. capacity should get a sufficient income to pay, on one-third of a cent a bushel a day, and a ship of 100,000 bush. capacity would need an income of from four-tenths to half a cent a bushel.

The Montreal sittings were concluded March 16, and an adjournment made to Toronto, where sittings were opened March 21.

J. E. Armstrong, ex-M.P. for Lambton East, Ont., who had, for several years, introduced bills into the House of Commons to place lake steamship freight rates under the Board of Railway Commissioners, was prevented from submitting a mass of documentary evidence which he had accumulated, but it was agreed that the commission's counsel would go through the papers and deal with them, according to their value as evidence and their relevancy to the matter before the commission. He contended that the Board of Railway Commissioners is the proper body to fix rates on lake steamships, and that a maximum rate should be fixed, which should apply for all seasons and all months, the same as applied to railway rates.

J. C. Murray, Quaker Oats Co., Peterborough, Ont., stated that his company had been compelled to bring nearly half its oats requirements by the all-rail route during the latter part of 1922, owing to it being impossible to secure tonnage from Fort William. He felt that "some method of co-ordination of transportation services between Fort William and the seaports should be devised, by which some of the evils could be mitigated or lessened, and that much of the congestion could have been prevented by a method of co-operation and supervision."

F. W. Grant, counsel, Great Lakes Transportation Co., and A. B. Clarke, Mathews Steamship Co., who gave evidence, were asked to submit lists of earnings and expenditures, contracts with Buffalo and Duluth, and direct contracts, also details of operating expenses.

R. E. Burns, Auditor, Great Lakes Transportation Co., stated that the depreciation adopted by the companies was 4%, which was the rate permitted on steel ships by the Income Tax Department. The per diem cost of each steamship is based upon the insurance value of the ship, and not on the appraisal value or the book value alone.

Further evidence by H. B. Clarke, Secretary-Treasurer, Mathews Steamship Co., covered details of the purchase of the company's steamships, etc. It owns 11 steamships, and the whole administrative staff consists of a manager, a secretary-treasurer and two clerks. The actual operating cost of the ships in operation in 1922 was \$191,000, against \$165,000 in 1921, and he believed that if delays had not been experienced, the difference would have been greater, less trips having been made in 1922 than in 1921. A loss on steamship operation until Sept. 1 of any year, is not infrequent; in fact, is rather the usual incident. Depreciation amounted to one-eighth of the value of the ships, which meant a total of \$350,000 on ships valued at over \$3,000,000.

Captain J. B. Foote, Toronto Vessel and Insurance Agency, on examination as to the method of arriving at the present physical value of ships, stated that he deducted 4% for depreciation, each year after the first year the ship had been built, and this made the valuation of the Mathews Steamship Co.'s ships as \$3,270,000.

Hugh Calderwood, American Bureau of Shipping, stated that he had made an appraisal of the Great Lakes Transportation Co.'s ships, which had a total value of \$3,251,000, with a depreciation of \$325,000. If, however, this valuation had to be made up to date, there would be an additional 10% for the increased price of steel.

H. Green, J. Richardson & Son, Kingston, Ont., stated that his company had chartered the steamships Canadian Pathfinder, Canadian Adventurer and Canadian Sower, from Canadian Government Merchant Marine, the rate being 4½c. for October, 5c. for November, and 6c. for storage.

During the sitting on March 22, H. J. Symington, counsel for the commission, stated that he thought the onus was on the companies to prove that the cost of coal was a contributing factor to justify an increase in rates, and if the companies felt they had submitted sufficient evidence on that point, he did not think they had proved justification. In reply, Britton Osler, for Mathews Steamship Co., stated that the companies had proved that the increase was justifiable, and that they made a ridiculous profit in proportion to the business. It had been declared that the profit of one company had been less than 1c. a bush. during 1922.

F. H. Markey, counsel for certain shipbuilders, in dealing with the question of the suspension of the Canadian coasting laws, desired to submit a number of resolutions by boards of trade and other organizations, to show that U.S. competition would be strengthened and Canadian shipbuilding interfered with, but was prevented on the ground that the commission had decided not to accept resolutions as evidence. The commission counsel stated that "if the suspension of the coasting laws permitted U.S. competition, it seemed axiomatic that Canadian shipbuilding would suffer. It is all a question of argument."

H. B. Smith, President, Collingwood Shipbuilding Co., stated that that company has a physical valuation of \$4,400,000, and employs about 1,200 men at its yards at Collingwood and Kingston, Ont. The suspension of Canadian coasting laws would seriously interfere with the operation of Canadian ships, and also seriously affect the shipyards. He would be wary, as a business man, to invest

any money in the industry with the cloud hanging over it, of the Government having power to suspend the coasting laws. He claimed that the total Canadian tonnage on the Great Lakes is sufficient to handle all the grain trade.

T. R. Enderby, Operating Manager, Canada Steamship Lines, in further evidence, stated that the company's net operating loss for the 1922 season on grain carried to and from U.S. ports, was \$80,532, and the net operating profit on grain to and from Canadian ports was \$62,651, no allowance having been made for profit and invested capital. His evidence in regard to the Maple Leaf Milling Co.'s charges at Port Colborne had been given in good faith, but he had overlooked, at the time, the fact that the government elevator charged \$1.15 on shovelling and loading of canal boats, and he wished to state that the Maple Leaf charges were not excessive.

The Toronto sittings were concluded March 23.

United States Merchant Marine.

Operation of ships by the U.S. Shipping Board for Nov. 1922, caused a loss of \$3,457,621; for Dec. 1922, \$4,329,806; and for Jan. 1923, \$4,942,337.

After a series of stormy sessions, the bill to provide subsidies for the operation of U.S. steamships, failed to reach a vote in the Senate, and lapsed. It was officially stated later that the President had decided that the proposals be abandoned. Some details of the bill, as originally presented, were given in previous issues of Canadian Railway and Marine World, but while the bill was before the House and Senate, considerable alterations were made, and it is stated that a majority of U.S. ship owners favored its defeat, in preference to its adoption in this final form. There is no doubt that the bill lacked popular support, although in its original form it was strongly favored by ship operators.

The U.S. Shipping Board has appointed a committee, consisting of Commissioners Lissner, Thompson and Chamberlain, to study and prepare details of a plan for transferring the Government-owned steamship lines to private ownership; and invitations have been sent to the American Steamship Owners Association, the U.S. Ship Operators Association, and the Council of American Shipbuilders to send a committee to confer on the subject. Among matters to be discussed by the committee, are included the following: Whether buyers can be found for the ships, who would give guarantees to maintain the ships in prescribed services, if the Board, in return for such guarantees, were willing to sell the ships at less than the world market price for similar tonnage; the time such guarantees should remain in force; the nature of such guarantees; the sale of good tonnage not required for operation upon desirable trade routes, especially regarding sale to citizens and to aliens; regarding tonnage of inferior design, equipment and general condition; and the raising of capital on shipping in today's financial market, and the financing of the purchases from the Board.

New Brunswick Shipping Co. Ltd. has been incorporated under the New Brunswick Companies Act, with \$15,000 authorized capital, and office at Sea View, N.B., to own and operate the schooner Nettie C. The incorporators are: C. and J. Splane, J. S. Tait, J. A. Moore and H. M. Clark, St. John, N.B.

Ocean, Coast, Lake and River Steamship Officers for 1923.

The following appointments made by Canadian navigation companies for their steamships and tugs, have been reported to Canadian Railway and Marine World. The first column contains the names of the ships, the second, those of the captains, and the third, those of the chief engineers:—

Alberta & Arctic Transportation Co., Edmonton, Alta.

Distributor	J. P. Bucey	D. Hawes
Lady Mackworth (motor)	C. Gardner	
Slave River	C. Myers	F. Mavis
Algoma Central Steamship Line, Sault Ste. Marie, Agawa	M. A. Livingstone	John Smith
Home Smith	A. McIntyre	D. McLeod
J. Frater Taylor	J. D. Montgomery	A. H. Chalmers
W. C. Franz	W. C. Jordan	A. M. MacInnes

American Yukon Navigation Co., White Horse, Yukon.

Alaska	C. W. Adams	T. Hyde
Yukon	J. S. McCann	R. W. Keen

Bear River Steamship Co., Bear River, N.S.

Bear River	J. E. Woodworth	S. Stevens
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Boston & Yarmouth Steamship Co., Yarmouth, N.S.

Prince Arthur	F. K. Crosby	C. Tooker
Prince George	A. W. McKinnon	E. C. Lynch

Bridgetown Steamship Co., Bridgetown, N.S.

Valinda	F. R. Merriam	C. Mills
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British Yukon Navigation Co., White Horse, Yukon.

Canadian	E. Morrison	J. Scotland
Casca	J. O. Williams	P. Bourne
Dawson	M. Campbell	W. C. Vey
Nasutlin	W. Cowley	G. Moir
Neecheah	J. E. Hoggan	C. Marcell
Tarahne	J. Garvie	F. Vey
Tutahi	J. McDonald	L. Lauderdale
White Horse	C. M. Coghlan	P. Larsen

Canadian National Railways Barge and Ferry

Burnham, Morrill & Co., Halifax, N.S.		
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Butler Towing & Freighting Co., Victoria, B.C.

Grainer	W. B. McCartney	H. McIlroy
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Canada Steamship Lines Ltd., Montreal.

A. E. McKinstry	E. J. Shannon	G. Fleming
Advance	F. Irish	T. Nicholls
Arabian	A. N. Hogue	H. Paus
Beaverton	O. M. Wing	F. A. McCauley
Canadian	H. A. Patterson	A. E. Kennedy
Cape Diamond	W. Gagne	G. Gagnon, Jr.
Cape Eternity		N. Crepeau
Cape Trinity	W. Cornett	A. Chayer
Cataract	J. J. Lawrence	G. Lashford
Cayuga	C. J. Smith	W. Taylor
Chippewa	W. Malcolm	D. J. Leslie
City of Hamilton	O. Patenaude	W. Dungan
City of Ottawa	J. A. Lepine	G. W. Clarke
Collingwood	G. W. Pearson	H. J. Jack
Corona	B. A. Bongard	J. W. Kennedy
E. B. Osler	J. H. Hudson	R. R. Foote
Edmonton	H. A. Leane	J. A. MacDonald
Emperor	D. W. Burke	G. N. Smith
Glenella	J. L. Baxter	M. J. O'Brien
Glenmount	W. J. Brown	J. J. Dove
Hamilton	N. Legault	M. Rankin
J. H. G. Hagarty	P. McKay	I. J. Boynton
Kenora	W. Brian	J. W. Douglas
Kingston	A. E. Stinson	G. W. McDonald
Longueuil	A. Mandeville	J. Matte
Macassa	G. J. Corson	J. A. Gunn
Mapleboro	E. F. Raeburn	M. J. Sherman
Maplebranch	A. Wilson	J. H. Loudon
Maplebrook	D. H. Porter	J. A. C. Hawman
Maplecourt	T. S. Patterson	Jas. Kirk
Mapleheath	A. Francis	R. G. Wilkinson
Maplehill	T. McLeod	E. A. Prince
Mapleton	K. LaRush	D. S. Simons
Martian	R. McIntyre	H. Myler
Midland King	R. F. Pyette	C. Leriche
Midland Prince	A. B. McIntyre	J. A. Pickard
Modjeska	Jas. Henderson	C. Kniffen
Montreal	N. McGlennon	N. Peloquin
Oatland	D. F. Cornett	F. Patterson
Quebec	J. P. Stephenson	O. Bonin
Rapids Prince		G. M. Hazlett
Rapids Queen	G. Batten	W. Hazlett
Saguenay	J. N. Riverin	G. Gagnon
Sarnian	T. H. Johnston	J. G. MacHattie
Simla		F. Lumley
Thunder Bay	W. A. Blackwell	A. E. Crosthwaite
Three Rivers	A. Mondor	A. Pageau
Toronto	E. A. Booth	A. E. Baillie
Valcartier	Jas. Reoch	W. C. Spencer
Vinmount	J. A. Ferguson	S. Ashie
W. D. Matthews	A. F. McLennan	L. E. Spencer
W. Grant Morden	C. E. Robinson	Jas. McGregor
Westmount	J. F. Davis	J. E. Readman
White Star	P. Walsh	T. Crossley
Winona	E. Walkinshaw	F. Moyle

Canadian National Railways Barge and Ferry Service, Vancouver, B.C.

Canora	J. Brown	J. Blackaller
Germania	J. Colbourne	R. Thorp
Sebastian	J. McKiernan	D. Martin

Canadian National Rys. Detroit River Car Ferries, Windsor, Ont.

Huron	O. Lalonde	A. Cook
Lansdowne	M. Bausette	W. Balsom

Canadian Pacific Car & Passenger Transfer Co., Prescott, Ont.

Charles Lyon	W. Henry	A. Stillson
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Canadian Pacific Ry. Bay of Fundy Service, St. John, N.B.

Empress	A. MacDonald	C. R. Kinney
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Canadian Pacific Ry. British Columbia Coast Service, Vancouver, B.C.

Charmer	O. H. P. Rogers	B. F. Osbon
Island Princess	N. J. Sterner	W. Woolcock
Princess Adelaide	R. A. Hunter	J. Greenshields
Princess Alice	S. H. Ormiston	R. Moffatt
Princess Beatrice	C. C. Sainty	A. Gordon
Princess Charlotte	T. O. Griffin	J. A. Heritage
Princess Ena	T. Cliffe	W. Nielson
Princess Louise	T. Rippon	J. Pettigrew
Princess Maquinna	E. Gillam	A. Alexander
Princess Mary	A. Slater	R. Harris
Princess Patricia	W. L. Gilchrist	W. B. Anderson
Princess Royal	W. J. Boyce	J. Hill
Princess Victoria		W. Oliver

Canadian Pacific Ry. British Columbia Lake & River Service, Nelson, B.C.

Bonnington	A. Forslund	T. C. I'Anson
Hosmer	M. McKinnon	P. H. Pearce
Kuskanook	F. L. Orr	J. G. Cameron
Moyle	J. Ferguson	J. Donaldson
Nasookin	M. P. Reid	J. P. Sutherland
Nasookin	J. Fitzsimmons	D. McLeod
Sicamous	J. B. Weeks	D. H. Biggon
Slocan	W. Kirby	W. H. Ahier
Valhalla	J. A. McDonald	S. Peterson

Canadian Pacific Ry. Great Lakes Steamship Service, Montreal.

Alberta	John McIntyre	W. S. Struthers
Assiniboia	Jas. McCannell	A. A. Cameron
Athabasca	M. McKay	G. S. Rae
Keewatin	M. McPhee	C. Butterworth
Manitoba	F. J. Davis	G. D. Adam

Hugh Cann & Sons, Yarmouth, N.S.

Bruce Cann	R. H. Worthen	H. Goodwin
C. D. 98	E. F. Peters	A. Wyman
Keith Cann	A. L. MacKinnon	J. B. Greig
La Tour	F. E. Smith	John Nixon
Mary H. Cann	Wm. Brush	Jas. Miller
Percy Cann	I. A. Banks	F. Hitchens
Robert G. Cann	W. E. Morris	B. Lumsden
Wanda	E. F. Peters	F. Muise

Cape Breton Electric Co., Sydney, N.S.

Electronic	I. H. Lewis	J. B. Weeks
Peerless	G. E. Dicks	D. E. Read

Chicago, Duluth & Georgian Bay Transit Co., Chicago, Ill.

North American	A. C. Anderson	H. Hankans
South American	A. L. Myers	J. F. Buritz

Clarke Steamship Co., Quebec, Que.

Gaspesia	W. Tremblay	H. Mercier
Labrador	A. Brie	A. Begin
North Shore	J. Boucher	E. Bolduc
Crystal Stream Steamship Co., Ltd., St. John, N.B.		
D. J. Purdy	— Gilchrist	— Hunden
Majestic	— Crabbe	— Gonnar

Dominion Transportation Co., Owen Sound, Ont.

Caribou	A. A. Batten	J. Walters
Manitou	N. J. McCoy	W. Owens
Donnelly Salvage & Wrecking Co., Kingston, Ont.		
Cornwall	J. W. Phelix	W. Kennedy
Frontenac	T. Murphy	T. Compeau
Mary P. Hall		M. Dorey
William Johnston Thos. Murphy		G. Sauve

Export Steamships Ltd., Montreal.

Trevisa	P. V. Mahoney	O. Williams
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Farquhar & Co., Halifax, N.S.

Sable I.	G. A. Morley	A. Tulk
Stella Maris	J. R. Renouf	F. Billiard

Georgian Bay Tourist Co. of Midland, Ltd., Midland, Ont.

Midland City	J. Ouellette	S. Beatty
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Glen Steamships Ltd., Midland, Ont.

Glenarm	P. E. Laking	W. Smith
Glenochart	D. Charland	L. Butler
Glenowan	L. Prgent	John Barrett
Glenalea	M. Green	J. H. Gilbert
Glenfarn	A. Beatty	J. A. O'Brien
Glenarnoch	M. Bouvair	J. A. McChristie

Grand Manan Steamship Co., Grand Manan, N.B.

Grand Manan	W. W. Hersey	John Cowie
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Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.

Prince Albert	N. McLean	C. Davies
Prince George	W. S. Morehouse	A. S. Munro
Prince John	H. Nadden	H. Milvain
Prince Rupert	D. Donald	W. E. Baillie

Great Lakes Transportation Co., Midland, Ont.

Glenbrae	P. Beatty	J. B. Polling
Glenclair	M. Stalker	M. Dedman
Glenclava	Jas. Foote	M. Manners
Glenelg	Roy Burke	John Gilbert
Glenfinnan	William Taylor	J. Silverthorne
Glenisla	Jas. Tindall	P. Eagles
Glenlivet	C. E. Scott	R. Sinclair
Glenlyon	A. A. Hudson	E. Hurl
Glenmavis	O. Mackay	J. King
Glenogle	J. A. Brown	C. McWilliams
Glenorchy	F. Burke	G. Price
Glenoshee	W. A. Lavigne	D. Sinclair
Glenstriven	B. Burke	G. D. Murphy

Halifax & Canso Steamship Co., Halifax, N.S.

Chedabucto	P. J. Cooper	A. Innes
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George Hall Coal & Shipping Corporation, Montreal.

Brignogan	A. Barrett	M. Parry
Edward L. Strong	W. Mills	H. Lamoureux
Frank A. Augsbury	W. J. Jewitt	U. Hamelin
John C. Howard	W. H. Ransom	F. Collier
Ignifer	E. Groulx	A. Carrier
James W. Follette	J. Hurley	F. Cote
Joe S. Morrow	R. Chatel	M. J. McFaul
John Rugee	W. Scarrow	S. Legendre
John B. Ketchum	2nd V. Gendron	O. D. Thurston
Lehigh	B. A. Sullivan	A. E. House
N. H. Botsford	C. A. Mahoney	A. Brown
Rockferry	T. Mills	T. Gouin
Royan	W. Liddell	T. Aussant
Senator Derbyshire	J. E. Ouellette	O. Croteau

La Have Steamship Co., West La Have, N.S.

Tussle	G. D. Pentz	A. Beatty
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Honey Harbour Navigation Co., Midland, Ont.

City of Dover	G. Morreau	M. E. Root
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Hudson's Bay Co., Winnipeg.

Athabasca River	L. Morton	J. Sutherland
Lady Kindersley	G. Foehlmer	J. R. Priestman
Liard River	C. Gardner	
Mackenzie River	E. Deacon	C. Ozol

Imperial Oil Ltd., Toronto.

Albertolite	D. G. Williams	J. O. Roche
Calgarolite	J. Colvin	A. McArthur
Imperial	F. F. Foote	D. J. Dow
Mina Brea	C. G. Sloane	A. Vick
Montrolite	P. St. John	A. R. Fleming
Trontolite	A. G. Cameron	W. Whetstone
Vancolite	W. R. Smeltzer	N. B. Gabbie
Victrolite	C. R. Treweek	L. Hartje

International Petroleum Co., Toronto.

G. Harrison Smith	C. M. Powley	J. E. Langdon
Lady Sybil	R. Stewart	D. Howard

International Transit Co., Sault Ste. Marie, Ont.

Algoma	M. Griffith	W. Whipps
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International Waterways Navigation Ltd., Montreal.

Aragon	M. Heffernan	Wm. Keith
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Keenan Towing Co., Owen Sound, Ont.

Keenan	G. Hindman	A. Glendallan
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Keystone Transports Ltd., Montreal.

Keybar		J. Robertson
Keybell	L. Beaupre	R. J. Mutchmore
Keynor	W. V. Smith	Jas. Boak
Keyport	A. McGee	L. Nordnes
Keystate		W. Hudspeth
Keyve	E. J. Smith	G. Baker
Keywest	W. A. Davies	A. Horton

Kingsley Navigation Co., Vancouver, B.C.

E. B. Kingsley	M. Uldall	J. Price
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Kingston Navigation Co., Kingston, Ont.

Brockville	W. Broomfield	Ross Leslie
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Lake Erie Navigation Co., Walkerville, Ont.

Marquette and		
Bessemer No. 1	J. A. Patterson	H. Culp

Marquette & Bessemer Dock & Navigation Co., Walkerville, Ont.

Marquette and		
Bessemer No. 2	J. Vanbuskirk	J. Stevens

Memphremagog Navigation Co., Georgeville, Que.

Anthemis	J. McEwen	J. Cross
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Maritime Steamship Co., Blacks Harbor, N.B.

Connors Bros.	E. H. Warnock	V. W. Cwvie
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Midland Transportation Co., Midland, Ont.

Lucknow	C. Lynn	R. Isbester
Luckport	W. Nichols	J. Bellmore

Scott Misner, Sarnia, Ont.

Claremont	Scott Misner	J. O. McKellar
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Simon Langell Fred Moles, L. Crawford

Montreal & Cornwall Navigation Co., Cornwall, Ont.

Britannic	C. Harte	N. Chartrand
Morden Transit Co., Midland,		

Pembroke Navigation Co., Pembroke, Ont.	J. Tessier	J. Trotter
Oiseau		
Peninsula Tug & Towing Co., Wiaraton, Ont.		
Edward Buckley F. Wood		W. C. Fox
Port Huron & Sarnia Ferry Co., Port Huron, Mich.		
City of Cheboygan G. Waugh		D. B. Smith
Hiawatha E. M. Thomas		H. Myers
Lawrence F. H. Bond		G. Wilson
Prescott & Ogdensburg Ferry Co., Prescott, Ont.		
Ferdinand H. Martin		W. J. Jento
Miss Vandenberg S. J. Delaney		F. Lavery
Quebec & Levis Ferry Co., Quebec, Que.		
John S. Thom T. Marchand		A. Toutant
Queen Jas. Kelly		Jos. Blanchot
Quebec Salvage & Wrecking Co., Quebec, Que.		
Lord Stratheona O. Sherrer		R. Casey
James Richardson & Son, Ltd., Kingston, Ont.		
Susie Chipman Lewis Captain		John Lynch
Rockport Navigation Co., Kingston, Ont.		
Waubic R. H. Carnegie		Jas. Gillie
Ross Navigation Co., Pas, Man.		
Nipawin H. C. Weber		W. Goodfellow
Royal Mail Steam Packet Co., Halifax, N.S.		
Caraquet A. Hernandez		C. Hull
Chaleur T. J. C. Buret		F. Avern
Chaudiere A. Purvis		E. Nicholls
Chignecto J. Green		W. J. Mitchell
John E. Russell, Toronto.		
Erl King Jas. Kenney		Neil Maher
Glide O. Marin		L. Divine
J. L. Russell H. Finn		W. Bush
City of Three Rivers, Quebec, Que.		
Le Progres D. Lemay		A. Frenette
Timagami Fur Co., Timagami, Ont.		
Keego E. T. Guppy		L. Therault
Toronto, Hamilton & Buffalo Navigation Co., Hamilton, Ont.		
Maitland No. 1 J. W. Keeley		C. E. Sylvester
Toronto Harbor Commissioners, Toronto.		
Emily Stewart C. Niece		W. Wright
Mary Stewart W. Miner		H. Shaghnessy
Rat C. Tufford		John Holland
Viper E. Straker		John Cameron
Union Steamship Co. of British Columbia, Vancouver, B.C.		
Camosun J. Findlay		A. Beattie
Cardena A. E. Dickson		G. H. Foster
Capilano J. Boden		P. J. V. Farina
Cassiar F. J. Parker		J. Beecher
Chasina H. E. Lawrey		J. Maitland
Cheakamus R. Wilson		N. Tweedie
Cheam F. W. Gilbert		
Chelohsin H. Stacey		R. M. Logan
Chilco N. Gray		J. Rodgers
Chilkoot E. Georgeson		R. Whitelaw
Chilliwaack C. B. Smith		J. Harley
Cowichan G. Gaisford		L. P. Thomas
Venture A. Johnstone		C. Arthur
Union Transit Co., Toronto.		
Wahcondah B. Maartense		T. Sadler
Valley Steamship Co., Annapolis Royal, N.S.		
Granville III. B. S. Collins		W. H. Logan
Walkerville & Detroit Ferry Co., Walkerville, Ont.		
Ariel W. Corr		J. Roach
Essex J. E. Rathbun		P. McLaren
Webster Steamship Co., Quebec, Que.		
Eric W. M. Cossette		D. Vezina
Richard W. J. Toupin		P. Brunelle
Stuart W. E. Tremblay		A. Gagne
West Coast Towing & Salvaging Co., Vancouver, B.C.		
Masset C. Pearson		W. Muir
Moresley J. McJohnson		A. Gill

Port Colborne Grain Elevator.

Acting Minister of Railways Graham stated in the House of Commons recently, in answer to R. J. Manion, Fort William and Rainy River, Ont., that the Dominion Government owns and operates an elevator at Port Colborne, Ont., which handled 53,349,811 bush. of grain in 1922, the charges on which were as follows:—On grain forwarded by ship: Shovelling and elevating into elevator, \$4.35 per 1,000 bush.; delivery to canal ship loading, \$1.15 per 1,000 bush. On grain forwarded by rail: Shovelling, \$4.35 per 1,000 bush.; elevating, domestic grain, 0.01c. per bush.; elevating, export grain, 0.00¾c. per bush.; storage, when in excess of 15 days allowed, 0.00¼c. per bush.

The profits for 1922 were \$210,395.29, less an amount to be determined for electric power. The total amount of Government investment in site and plant is approximately \$2,100,000, which includes cost of elevator reconstruction after explosion. In reporting profits, no interest is charged on invested capital, and no reserve is made for depreciation on plant.

Great Lakes Ice Report.

The U.S. Agriculture Department, Weather Bureau, issued the following from its Detroit, Mich., office, March 20:—Reports from regular and display stations of the Weather Bureau and Canadian Meteorological Service furnish the data for the following summary:—

Lake Superior.—No reports from Duluth or Two Harbors; no change in conditions in Chequamegon Bay; at Port Arthur the ice is 32 in. thick, and ranges to 11 in. at Thunder Cape; fields moved out into lake by high winds; extensive fields continue around Keeweenaw Point and eastward to Whitefish Point; Whitefish Bay solid; St. Marys River continues solid; the ice is snow covered.

Lake Michigan.—In Green Bay, the ice is 25 in. thick at Escanaba, and ranges to 10 in. at Green Bay, where it is softening; no change in Sturgeon Bay; in Lake Michigan, some ice fields have appeared along the west shore during the week, but have moved out; along the east shore from the southern portion to above Ludington, the fields move in and out with the winds. At Charlevoix, the ice is breaking up and open water is showing; at the Straits, the ice continues solid and 22 in. thick; it is snow covered.

Lake Huron.—The eastern end of the Straits continue closed and the ice is solid; there are fields of ice off Presque Isle and south to below Thunder Bay Island; no ice reported in the outer portion of Thunder Bay; no ice reported over the southern portion, except along the east shore, where the ice fields extend beyond vision.

Lake St. Clair and Detroit River.—Lake St. Clair is well covered with broken ice fields; the ice has been running freely in the river during the week. A steamship passed up to Algonac Sunday and returned Monday, and reports St. Clair River open to Port Huron.

Lake Erie.—There are no ice fields reported over the western portion of the lake; broken ice fields moving with the winds are reported from Ashtabula eastward to beyond Erie; the high winds moved the ice fields out of sight at Dunkirk. Buffalo reports the gales of March 12, 13 and 16 broke up the ice and large open spaces of water are visible; large fields passing down the Niagara River.

Lake Ontario.—No ice fields reported from Niagara eastward to beyond Oswego; the harbors at Sodus Point and North Fair Haven still closed; Oswego harbor is open; a fringe of ice 2 miles wide reported off Big Sandy; no changes in conditions at Ogdensburg.

Canal Estimates for 1923-4.

The estimates for the year ending March 31, 1924, submitted to the House of Commons recently contain the following items:—

Railways and Canals; chargeable to Capital.	
Welland Ship Canal: construction.....	\$11,800,000
Trent Canal: construction and betterments.....	210,000
St. Anne's Lock: highway bridge at Isle Perrot.....	100,000
St. Lawrence Ship Canal: surveys and investigations.....	50,000
Railways and Canals; chargeable to Income.	
Chambly Canal, improvements.....	\$ 25,000
St. Anne's Lock, improvements.....	20,000
Lachine Canal, improvements.....	56,000
Soulanges Canal, improvements.....	162,000
Trent Canal, improvements.....	255,000
Welland Canal, improvements.....	100,000
Sault Ste. Marie Canal: new steel gate lifter.....	5,000
Canals, surveys and inspection, including salaries and expenses of experts employed temporarily.....	25,000

Dominion Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgment delivered in connection with the following casualties:—

Eleanor-Nereid Collision.

Held at St. John, N.B., Dec. 20, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. J. Mulcahy and W. G. Hurley, as nautical assessors, into the collision between the quarantine motor launch Eleanor, and the steam tug Nereid, in St. John harbor, Oct. 25, in which the former was sunk. At the time of the accident, the Eleanor was being used to place a doctor on board the s.s. Caraquet, which was travelling at about 4 miles an hour, when the tug Nereid, towing a schooner, crossed the Caraquet's bow, from starboard to port. Owing to a strong breeze, the tug drifted on to the Eleanor, crushing her against the Caraquet, after which she sank, the boatman and the doctor both jumping on to the tug. The court found that the master of the tug, J. LeB. Makinney, was solely to blame for the loss, and as it was considered probable that a claim for damages would be made against him, and as he is part owner of the tug, his certificate was not dealt with, but he was reprimanded most severely for his unseamanlike action, in crossing another ship's bows, especially at such close range, and under such weather conditions as existed.

Barge Collision in Nanaimo Harbor.

Held at Victoria, B. C., Jan. 20, by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. M. P. Cutler and A. P. W. Williamson, as nautical assessors, into a collision between the barge Rainbow No. 2 in tow of the tug We Two, and another barge in tow of the tug Tepic, in Nanaimo Harbor, Dec. 26, 1922, resulting in the death of one man. After hearing the evidence, which was characterized as convincing and straightforward, the court held that the accident was unavoidable under the conditions existing, and that no blame could be imputed to the master of the tug Tepic, nor to the master of the tug We Two, and both masters were returned their certificates. The court expressed its appreciation of the courage displayed by G. L. Perry, in jumping overboard in the darkness, in an unsuccessful attempt to save the life of the man drowned, and considered that his action should be brought to the Royal Humane Society's notice. It also recommended that the Rainbow No. 2 should be equipped with some kind of emergency lighting system, to be used in the event of her lights being extinguished by accident or otherwise; that the tug We Two should be equipped with a searchlight, and that two tug hands should be employed on the tug instead of one as hitherto. These recommendations were immediately carried out by the Western Transportation Co., Nanaimo, B. C., the owner of both tugs.

Marine public works contracts have been awarded by the Dominion Public Works Department, as follows: Jan. 20, repairs to public wharf at Port Hood, N.S., Sydney Construction Co., Sydney, N.S., at unit prices; Feb. 17, construction of wharf at Millhaven, Ont., M. R. Midmer, Napanee, Ont., at unit prices.

Steamship Service Between Canada, British West Indies and British Guiana.

The Trade and Commerce Department will receive tenders to June 15, for a steamship service between Canada, British West Indies and British Guiana, for one, or more, of the following services: (a) Sailing fortnightly from St. John, N.B., or Halifax, N.S., and calling one week on the outward passage at Bermuda, Barbados, Trinidad and British Guiana, and on the homeward passage at Trinidad, Grenada, St. Vincent, Barbados, St. Lucia, Dominica, Montserrat, Antigua, Nevis, St. Kitts and Bermuda; and on alternate weeks on the outward passage at Bermuda, St. Kitts, Nevis, Antigua, Montserrat, Dominica, St. Lucia, Barbados, St. Vincent, Grenada, Trinidad and British Guiana, and on the homeward passage at Trinidad, Barbados and Bermuda. (b) The same service as specified above, except that sailings be made from St. John and Halifax alternately. (c) Any other frequency of service, or itinerary, or other variation from the terms of this, which tenderers may desire to offer. The service to cover 5 or 10 years, commencing within two weeks after the date of the last sailing from Halifax under the present contract, which expires March 31, 1924.

Steamships to be employed should be from 5,000 to 6,000 tons gross, capable of maintaining an ocean speed of 12 knots, and providing accommodation for 100 first class, 30 second class and 100 steerage, or deck, passengers, and should be provided with 'tween decks. Tenders must state the amount of subsidy required, and the period for which the contract is requested. The contract will provide that there shall be reasonable proportionate allocation of passengers and cargo accommodation between the colonies mentioned, and that there shall be no unfair differentiation in rates of freight against the smaller colonies as compared with the rates of the larger ones situated at a similar distance from St. John or Halifax, and freight and passenger rates will, at all times, be subject to the Trade and Commerce Minister's approval. The steamships to be built so that, as far as traffic warrants, cold storage will be provided, but alternative tenders may be submitted offering the steamships with, or without, cold storage. The steamships employed to at all times, if required, carry such mails as may be offered by the Canadian postal authorities, or the West Indian colonies, the contractor to land and embark all mails at terminal points and ports of call at his own expense.

Harbor Commissioners' Organization, Salaries, Etc.

H. C. Hocken, Toronto West, asked the following questions in the House of Commons recently, in regard to the harbor commissioners at St. John, N.B., Hamilton, Ont., Quebec and Montreal, Que., and Vancouver, B.C.: "What are the names of the harbor commissioners? What salary is paid each commissioner? Are any of the commissioners employed in any other capacity by the Boards? If so, what are the names of those so otherwise employed, and amounts paid each, or any of them for such other services? What is the total amount paid each commissioner for salary and other services or commissioners during year ended Dec. 31, 1921? What dismissals or changes have been made by the present Government in the personnel of the commissions?"

The Minister of Marine, Mr. Lapointe, stated that there are no harbor commissioners for St. John, N.B. The Hamilton commissioners are Wm. Ainslie, Chairman; John Newlands and W. B. Shepherd. They are paid no salaries, and none of them are employed in any other capacity by the commission. None of the commissioners have received any remuneration of any kind in connection with harbor matters. The present personnel of the commission was substituted for the previous one on Oct. 7, 1922.

The Quebec Harbor Commissioners are W. Gerard Power, President; Brig-Gen. T. L. Tremblay and Jules Gauvin. The President's salary is \$6,000, and the other commissioners \$4,000 each, which are paid out of the harbor revenues. Brig-Gen. Tremblay has also been Chief Engineer since July 1, 1922, with a salary of \$4,000 a year. The former three commissioners, Major-General Sir David Watson, A. S. Gravel and Brig-Gen. Tremblay, resigned, effective March 1, 1922, Brig-Gen. Tremblay being reappointed.

The Montreal Harbor Commissioners are W. L. McDougald, President; M. L. Hersey and Emilien Daoust. The President's salary is \$7,000 a year, and the other commissioners \$2,000 each, which are paid out of the harbor revenues. None of the commissioners are employed in any other capacity by the Commission. W. G. Ross, the former President, resigned that position, in Nov., 1921, to contest St. Antoine Division, Montreal, for the House of Commons. The other two former commissioners, Brig-Gen. A. E. Labelle and Farquhar Robertson, resigned in Dec., 1921. The present commissioners were appointed in Feb., 1922.

The Vancouver Commissioners are Lt.-Col. G. H. Kirkpatrick, President; R. E.

Beattie and Samuel Prenter. The President's salary is \$5,000, and that of the other two commissioners \$4,000. The salaries are paid out of the harbor revenues. None of the commissioners are employed in any other capacity by the commission and they are only paid their annual salaries. Major A. R. Mackenzie and S. McClay, two of the former commissioners, resigned, and Messrs. Beattie and Prenter were appointed to replace them, effective Sept. 1, 1922.

Shipping Accommodation in Montreal Harbor.

Docking accommodation in Montreal harbor for 1923 has been arranged, and the different companies are getting the sheds and equipment ready for the re-opening of navigation. It is announced that applications were received for four more sheds than there are, this being accounted for by the fact that several of the older lines will operate an increased number of ships this year. Enlarged grain elevator accommodation will be provided for handling the largely increased quantity of grain capacity in the port from Buffalo to Port Colborne, during the season. Ocean going steamships have been assigned to sheds as follows: Cunard Line, Anchor-Donaldson Line and Thomson Line, Robert Reford Co., Canadian agents, and Rogers and Webb and other lines at sheds 2, 3, 5, 11 and 24; Canadian Pacific Steamships at sheds 7, 8, 9 and 10, for both passengers and freight, and shed 19 for freight only; White Star-Dominion Line at sheds 4 and 6; Canadian Government Merchant Marine at sheds 12, 14 and 25; Furness Withy & Co. at sheds 16 and 17; Intercontinental Transports Ltd. (Canada Steamship Lines) at shed 18; Head Line and Houston Line, McLean, Kennedy Ltd., agents, at sheds 13, 15 and 47; Hudson's Bay Co. at shed 44; Elder, Dempster & Co. at shed 45; New Zealand Shipping Co. at shed 46. Laurier Pier will be reserved by the harbor commissioners for use as required.

Owen Sound Elevator Co., Ltd. has been incorporated under the Dominion Companies Act, with \$750,000 authorized capital, and office at Owen Sound, Ont., to take over from the Owen Sound Elevator Co., and any other person or corporation, the right, title and interest conferred, under an agreement dated Nov. 28, 1922, between the City of Owen Sound and Roland Patterson, and to carry on a general milling and grain elevator business. The incorporators are: J. Jennings, K.C., G. H. Lovatt, H. A. Wilson, D. McKenna and F. B. Marsellus, Toronto.

Drydocks Estimates for 1923-4.

The estimates for the year ending March 31, 1924, submitted in the House of Commons recently, contain the following items:

Public Works, Chargeable to Capital.	
Esquimalt, B.C., drydock under construction	\$1,500,000
Quebec Harbor, Champlain dock, to complete	96,000
Public Works, Chargeable to Income; Authorized by Statute.	
Collingwood drydock no. 1	\$15,000.00
Collingwood drydock no. 2	9,208.96
Montreal floating dock	105,000.00
Port Arthur drydock	37,741.50
Prince Rupert floating dock	76,970.88
Public Works, Chargeable to Collection of Revenue	
Champlain graving dock	\$72,000
Lorne graving dock	51,800
Esquimalt graving dock	22,000

Ships Added to and Deducted from the Canadian Register During December, 1922.

Added.	Steam.—Tonnage—			Sailing.	—Tonnage—		
	No.	Gross	Net		No.	Gross	Net
Built in British Possessions	12	326	126	2	42	42	
Bought from foreigners	4	817	317	1	98	91	
Registered anew	3	85	64	1	113	113	
Other ships	2	1,361	787	.....	.....	.....	.....
Added on re-registry	.....	13	31	.....	.....	.....	.....
Totals	21	2,602	1,325	4	253	246	
Deducted.	Steam.—Tonnage—			Sailing.	—Tonnage—		
	No.	Gross	Net		No.	Gross	Net
Wrecked or otherwise lost	1	275	187	4	466	414	
Broken up or unfit for use	2	4,237	2,702	.....	.....	.....	.....
Sold to foreigners	.....	.....	.....	2	595	529	
Transferred to British Possessions	1	32	22	.....	.....	.....	.....
Registered anew	.....	.....	.....	1	10	10	
Deducted on re-registry	.....	85	23	.....	104	404	
Totals	4	4,629	2,934	7	1,175	1,357	

Canadian Government Merchant Marine Operations, Etc.

R. B. Teakle, General Manager, C.G.M.M., Montreal, made a business trip to the Pacific coast during March.

Appointments.—**R. T. Armstrong**, heretofore in Customs and Immigration Department, C.G.M.M., Montreal, has been appointed Travelling Agent, with headquarters there. This is a new position.

A. Davidson, Division Freight Agent, Canadian National Rys., Vancouver, B.C., is reported to have been appointed Assistant Freight Agent, C.G.M.M., there.

C. W. Tourtellotte is reported to have been appointed assistant to Pacific Coast Manager, Vancouver, B.C.

Officers of Steamships.—The following captains of steamships have been appointed, in addition to those mentioned in previous issues:—**Canadian Harvester**, **W. B. Armit**, vice **E. E. Manning**, transferred to **Canadian Spinner**; **Canadian Spinner**, **E. E. Manning**, formerly of **Canadian Harvester**, vice **P. J. Murphy**, on leave.

Unfounded Complaints.—The acting Minister of Railways stated in the House of Commons, recently, that complaints which had been made against **H. Milburn**, Assistant to Manager, C.G.M.M. at Montreal, had been investigated by **H. J. Page**, Chief of the Canadian National Rys. Investigation Department, and it resulted in Mr. Milburn's complete exoneration.

No Abandonment Intended.—During **Sir Henry Thornton's** recent trip to the Pacific Coast, he was reported to have been asked by a press interviewer as to the suggestion that one of the amputations necessary for the Canadian National Rys. would be the Canadian Government Merchant Marine, and to have answered: "The Canadian National will amputate nothing. If the Canadian Government Merchant Marine is not paying, it must be made to pay."

Deficit Provided For.—The Railways and Canals Department's estimates for the year ending March 31, 1924, submitted to the House of Commons recently, contain the following item chargeable to income:—Loan to Canadian Government Merchant Marine Ltd., repayable on demand, with interest at a rate to be fixed by the Governor in council, upon such terms and conditions as the Governor in council may determine, and to be applied in the payment of deficits in operation of the company and the ships under the company's control during the year ending March 31, 1924, \$1,500,000.

Sale of Scrap Metal and Material.—The acting Minister of Railways stated in the House of Commons recently, in answer to **J. Archambault**, **Chambly** and **Vercheres**, Que., that scrap metal and material coming from the fleet and elsewhere, belonging to the C.G.M.M. in 1921, had been sold by tender by the Purchasing Department, the following prices being realized:—Scrap rope, June, 3c. a lb.; September, 3½c.; December, 4¼c. Cast scrap, September, \$18, gross ton; Grate bars, September, \$9, gross ton; December, \$10. Twisted band iron, \$6.50, gross ton. Empty paint barrels, \$1 each. Scrap dunnage, \$2 a load. Column casting, \$15, gross ton. Pipe and retarder, \$6, gross ton. Scrap grain bags (by auction), 1½c. each.

St. John, N.B., Sailings

Liverpool service.—**Canadian Explorer**, April 11.

London service.—**Canadian Leader**, April 7; **Canadian Victor**, April 21.

Cardiff and Swansea service.—**Canadian Navigator**, April 18.

Halifax, N.S., Sailings

Australia and New Zealand service.—**Canadian Miller**, April 20.

Barbados, Trinidad and Demerara service.—**Canadian Logger**, April 7; **Canadian Runner**, April 21.

Hamilton, Nassau, Kingston and Belize service.—**Canadian Fisher**, April 12.

Newfoundland service.—**Canadian Sapper**, April 4.

Vancouver, B.C., Sailings

Australasian service.—**Canadian Inventor**, April 1.

Oriental service.—**Canadian Freighter**, April 15.

Trans-Atlantic Rates on Agricultural Products.

The special committee appointed by the House of Commons to enquire into agricultural conditions, heard a considerable amount of evidence regarding rates on agricultural products by steamship across the Atlantic, during March. Among those who gave evidence were: **P. A. Curry**, General Manager, **White Star-Dominion Line**, Montreal; **J. W. Nichol**, Manager, **Furness, Withy & Co.**, Montreal; **L. A. W. Doherty**, Freight Traffic Manager, **Canada Steamship Lines Ltd.**, which company acts as General Agent and Manager of **Intercontinental Transport Services Ltd.**, and **W. A. Cunningham**, Traffic Manager, **Canadian Government Merchant Marine Ltd.** So far as the evidence obtained from the foregoing was concerned, it appeared to be the committee's object to gather information as to any agreements regarding rates emanating from the **North Atlantic Westbound Freight Conference** and the **North Atlantic Eastbound Freight Conference**. The witnesses explained that representatives of member companies of the conferences met to discuss matters of interest to all steamship companies, and to consider any applications for changes in rates, or consider market conditions and the various factors which go towards the making of rates. There is no conference that has any jurisdiction over cattle rates, which are matters of individual contract between the shipper or broker, and the individual lines. The cattle question had come up at a recent meeting of the members for the discussion of the new regulations, on which the members are not quite clear. The question of shipping **Canadian flour** through **New York** was stressed, as it is claimed that **U.S. flour**, shipped in precisely the same manner as **Canadian flour**, is being carried on **British steamships**, to the same destinations, at from 2c. to 5c. per 100 lb. less. The rates on apples from **Nova Scotia** were also dealt with, it being mentioned that the rate which, prior to the war, was 75c. to 85c., was, in Dec. 1918, \$5 a barrel, and is now \$1, with a possibility of 90c. in the near future. It was suggested, and denied, that the cause of the reduction in the rates was due to shippers forwarding by **Norwegian steamships**, which are not members of the conference.

W. A. Cunningham, Traffic Manager, **Canadian Government Merchant Marine**, was subjected to a searching examination as to the C.G.M.M.'s position in the conference. He explained that he attended the meetings to keep in touch with conditions for the good of business, and

reserved the right in all cases to meet the Canadian exporter, where the information showed that he was entitled to consideration. He had frequently departed from tariff rates. He was instructed by the chairman to forward to the committee his copy of the **North Atlantic Conference tariff**, and the detailed average operating cost of the C.G.M.M., more particularly as it is affected by the tariff rates, i.e., the average cost per ton of freight to the **United Kingdom**, and the average operating cost.

Canadian Pacific Railway Ocean Steamship Services.

The s.s. **Empress of France**, which passed through the **Panama Canal** at the end of January, carried the largest touring party that had then visited there. There were 727 passengers on a round the world tour, and it was the third of the round the world touring parties to pass the canal.

Following the plan adopted in renaming its cabin and third class passenger steamships with words commencing with **M**, the company is now renaming its freight steamships with words commencing with **B**. The following names have been adopted: **Methven** to be **Borden**; **Holbrook** to be **Bredon**; **Montezuma** to be **Bedwyn**; **Sicilian** to be **Bruton**; **Mattawa** to be **Berwyn**; **Dunbridge** to be **Brecon**; **Monteagle** to be **Belton**; and **Mottisfont** to be **Bawtry**. The names of the steamships **Bolingbroke** and **Batsford** are not being changed.

Capt. G. B. Evans, O.B.E., of the s.s. **Metagama**, retired from active service in March, after 48 years of sea life. He commenced his apprenticeship at the age of 16, with the **Brocklebank Line**, trading to India, and from 1885 to 1894 served as chief officer on sailing ships, and later as third officer on steamships. He has served as master of the steamships **Lake Ontario**, **Lake Winnipeg**, **Lake Huron**, **Montreal**, **Lake Champlain** and **Manitoba**. On the outbreak of war he carried troops from **Montreal** to **France**, and was then transferred to the s.s. **Missanabie**, which was sunk by the enemy in 1918. He later holds commands on the steamships **Melita**, **Minnedosa**, **Montcalm**, and **Metagama**.

The company still holds the record for the trans-Pacific service, the s.s. **Empress of Russia's** time from **Vancouver** to **Yokohama** being 8 days, 18 hours, 31 minutes. According to a recent rearrangement of ports of call in the Orient, by omitting **Manila**, between **Shanghai** and **Hong Kong**, the last named port will be brought four days nearer to **Canada**, thus making possible a through service from **London, Eng.**, to **Hong Kong, China**, via **C.P.R.**, in 28 days.

The company, in view of the increasing numbers of travellers and requests for accommodation, has augmented its sailings to 99 for the forthcoming season, an increase of 17 from 1922. There will be 72 sailings from **Montreal** and 27 from **Quebec**. The **St. Lawrence** navigation season will be opened by the s.s. **Metagama**, May 3, from **Montreal**, for **Belfast** and **Glasgow**, starting the company's new service to **Ireland**. The **Belfast** and **Glasgow** service will be maintained by the **Metagama**, **Marburn** and **Marloch**. The **Montlaurier**, which is expected to arrive at **Quebec** May 12, is the largest one class cabin ship using **Canadian ports**, and the largest of her class in trans-Atlantic service.

Mainly About Marine People.

A. A. Auld, Superintendent, Northern Navigation Co., Sarnia, Ont., was presented with three travelling bags and an umbrella, by different departments of the company, March 10, on leaving for Sault Ste. Marie, Ont., where he has been appointed Manager, New Ontario Dock, Canada Steamship Lines Ltd.

Hon. C. C. Ballantyne, of Montreal, ex Minister of Marine and Fisheries, and Mrs. Ballantyne, are spending some time at Augusta, Georgia.

Joseph Ralph Beck, whose appointment as District Passenger Agent, Canada Steamship Lines Ltd., Toronto, was announced in our last issue, was born at Gaspe Cove, Gaspe, Que., Nov. 4, 1892, and entered transportation service in May, 1909, since when he has been, to May, 1912, telegraph operator, Richelieu & Ontario Navigation Co., Montreal; May, 1912, to Nov., 1914, ticket clerk, Canada Steamship Lines Ltd., Montreal; Nov., 1914, to May, 1919, on military service in France; May to Dec., 1919, chief clerk, ticket office, Canada Steamship Lines, Ltd., Montreal; Jan., 1920, to April, 1921, Travelling Passenger Agent, same company, Montreal; April, 1921, to Feb., 1923, City Passenger Agent, same company, Toronto.

F. P. Belcher, grain and shipping broker, Winnipeg, who died from pneumonia, at St. Boniface Hospital, March 4, aged 45, was born at Port Elgin, Ont., where his father was agent, Great Western Ry., now G.T.R., and for several years was in G.T.R. and Northern Pacific Ry. service. He was in business as a grain and shipping broker at Winnipeg for several years, and gave evidence before the commission enquiring into an alleged combine among Great Lakes shipowners, during February.

A. S. Boudreau has been appointed harbor master, Petit de Grat, N.S., vice E. Bois, resigned.

David B. Carswell, who has been appointed Superintendent Engineer, Canadian Government Merchant Marine, Montreal, was born at Paisley, Scotland, Aug. 3, 1884, and from 1899 to 1904, served his apprenticeship with Thos. Reid & Son, engine builders, Paisley, Scotland; 1904 to 1908, marine engineer, coasting in China, and with Alfred Holt & Co., Liverpool; 1908 to 1909, engineer's draftsman, Simons Ltd., Manchester, England; 1909 to 1913, Assistant Manager, same company, Manchester, Eng.; 1913 to 1916, chief engineer, Deloro Mining & Reduction Co., Deloro, Ont.; 1916 to 1919, Superintendent, Detroit Shipbuilding Co., Detroit, Mich.; 1919 to 1921, Assistant General Manager, MacDougall Duluth Shipbuilding Co., Duluth, Minn.; 1921 to Feb., 1923, Assistant Superintendent Engineer, Canadian Government Merchant Marine, Montreal and Halifax, N.S. J. B. Carswell, of the Carswell Construction Co., Toronto, is a brother.

Capt. E. C. Coons, a lake steamship master, died at St. Catharines, Ont., recently, aged 65. He had been sailing the Great Lakes for 46 years, and last year was master of the steamships Mapleton and Simla.

Miss I. S. Cuttle, second daughter of the late J. A. Cuttle, formerly of the Montreal Transportation Co., was married at her mother's home, Hudson Heights, Que., March 24, to H. P. Stephenson, of that place.

A. Melville Dollar has been elected Chairman of the Vancouver Board of

Trade's Shipping Bureau, succeeding Capt. B. L. Johnson.

K. Macdonald, heretofore captain of the Anchor-Donaldson Line's s.s. Gracia, has been appointed second deputy port warden for Montreal. This appointment is stated to have been made necessary by the large increase in the port's grain trade.

Dr. W. L. McDougald, President, Montreal Harbor Commissioners, and Mrs. McDougald, have left Montreal, to spend some months abroad.

Alex. McNiven, for many years Secretary, Association of Marine Engineers of Canada, died at Victoria, B.C., March 6, aged 80.

Lt.-Col. Alex. Montgomerie, C.B.E., Manager, Furness, Wity & Co., Halifax, N.S., has been elected President, Halifax Board of Trade. Prior to coming to Halifax in 1919, he was the company's Manager at St. John's, Nfld.

C. H. Nicholson, who has been appointed Manager, Canada Atlantic Transit Co. and of the Canadian National Ry's Lake Ontario, Detroit River and Lake Michigan car ferries, at Toronto, was the guest of a number of steamship officials on the s.s. Prince George, at Vancouver, B.C., Feb. 26, prior to leaving there, where he had been Manager, Grand Trunk Pacific Coast Steamship Co., since its inception. He was given a silver humidior filled with specially made cigars from Havana, and a wrought silver cake dish for Mrs. Nicholson.

Capt. W. H. Reid, President and General Manager, Reid Wrecking Co., Port Huron, Mich., and Sarnia, Ont., died at Port Huron, March 11, aged 51, after two days illness.

H. T. Wilgress, who died at Paris, France, March 13, was for a number of years in C.P.R. service, and retired as agent, Trans Pacific Steamships, C.P.R., Yokohama, Japan, in 1915. He was born at Lachine, Que., July 29, 1857, and entered C.P.R. service in Oct. 1886, since when he was, to Feb. 1887, cashier Local Treasurer's office, Port Moody, B.C.; Feb. 1887 to May 1899, Paymaster Pacific Division; May 1899 to July 190. Townsite and Right-of-way Agent, Columbia & Western Ry. (C.P.R.), Greenwood, B.C.; July 1900 to Jan. 1901, cashier, Local Treasurer's office, Vancouver, B.C.; Jan. 1901 to Aug. 1905, chief clerk, General Agent's office, Portland and Asiatic Steamship Co., Hong Kong, China; Aug. 23, 1905, returned to C.P.R. service as chief clerk, General Traffic Agent's office, Yokohama, Japan; Aug. 23, 1905, to 1915, Chief Assistant to Manager, and subsequently Agent, Trans Pacific Steamships, C.P.R., at Kobe, and Yokohama, Japan.

Sir Alfred Yarrow of Yarrow & Co., Ltd., Glasgow, Scotland, with which Yarrows Ltd., Victoria, B.C., is associated, has given £100,000 to the Royal Society, to be used as capital or income. Sir Alfred, who retired recently from active business, has frequently made large donations for scientific research in various lines. He is 80 years old, and was married for a second time, only a short time ago.

Vancouver Grain Shipments.—During February, 1,524,285 bush. of wheat were shipped by ocean steamships through the Government elevator at Vancouver, B.C., in 13 ships, of which 8 ships, with 1,131,252 bush., were for United Kingdom ports, and 5 ships, with 393,033 bush., for Japanese ports.

Ocean and River Service Estimates.

The estimates for the year ending March 31, 1924, submitted to the House of Commons recently, contain the following items:—

Maintenance and repairs to Dominion steamships and icebreakers.....	\$1,500,000
Examination of masters and mates.....	20,000
Investigation into wrecks.....	12,300
Navigation schools.....	8,000
Temporary relief of distressed seamen, legal expenses and cost of shipping books and forms.....	5,000
Registration of shipping.....	5,000
Removal of obstructions in navigable waters.....	5,000
Inspection of live stock shipments.....	3,500
Subsidies for wrecking plants, Quebec and British Columbia.....	35,000
Unforeseen expenses.....	5,000
Life saving service, including rewards for saving life.....	90,000
Hydrographic Survey and maintenance and repairs of hydrographic steamboats	364,080
Radiotelegraphic Service and for building and maintenance of wireless stations and general administration of radiotelegraphy throughout the Dominion....	454,900
Tidal and Current Survey.....	35,000
	\$2,542,780

Georgian Bay Grain Trade and French River Improvements.

The Minister of Trade and Commerce stated in the House of Commons recently that Georgian Bay elevators handled the following grain during 1922:—

Canadian: Carry-over from 1921 (including Goderich) 1,942,600 bush.; receipts, 55,976,089; shipments, 56,141,428; in store, 1,777,272.

United States: Carry-over from 1921 (including Goderich), 10,373,322 bush.; receipts, 68,990,212; shipments, 69,348,125; in store, 9,915,291.

Parliament had voted \$1,903,500 for improvements to the French River, in Nipissing, of which \$209,419.34 had not been expended.

Lighthouse and Coast Service Estimates.

The estimates for the year ending March 31, 1924, submitted in the House of Commons recently, contain the following items:—

Agencies, rents and contingencies.....	\$212,000
Salaries and allowances to lightkeepers...	650,000
Maintenance and repairs to lighthouses...	850,000
Construction of lights and aids to navigation, including regulation of traffic in Detroit River and such other places as may be necessary.....	500,000
Marine Signal Service.....	104,000
Administration of pilotage.....	250,000
Maintenance and repairs to wharves.....	10,000
Breaking ice in Thunder Bay, Lake Superior and other points deemed advisable for good of navigation.....	40,000
Pensions for pilots.....	9,475
Amherstburg harbor master, for supervision of lights and buoys on St. Clair and Detroit Rivers, and Lake Erie, and other services in connection with lighthouse service for season of navigation, 1923.....	600
Patrol of northern waters of Canada.....	15,000
	\$2,641,075

Globe Transportation Co. Ltd. has been incorporated under the Dominion Companies Act, with \$200,000 authorized capital, and office at Montreal, to own and operate ships, wharves, docks and other shipping facilities, and to carry on a general navigation business. The incorporators are: F. H. Markey, W. W. Skinner, G. G. Hyde, J. S. Ahern and R. J. Foster, Montreal.

Tide tables for Nelson, Hudson Bay, and tidal data for Hudson Strait and James Bay, for the 1923 season, have been issued by the Marine and Fisheries Department's Tidal and Current Survey.

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

Nova Scotia.—A Lunenburg press report states that the building of sailing ships, which languished somewhat after the close of the war, due to over building, has revived, and that all local yards have contracts signed for the building of fishing ships covering the greater part of this year, and additional orders have been placed at other points in the province, in order to be sure of delivery for the fishing season in April.

Ship for Northwest Territories.—The estimates for the year ending March 31, 1924, submitted to the House of Commons recently, provide \$40,000 for the purchase and maintenance of a new ship.

Canadian Vickers Ltd., Montreal.—The steel single screw hopper barge, which is being built for the Dominion Marine Department, is expected to be ready for launching about April 15, and for delivery about May 15. A full description was given in Canadian Railway and Marine World for Dec., 1922.

Collingwood Shipbuilding Co., Collingwood, Ont., expects to launch a ship early in April, which has been built on its own account for sale. She is intended for canal service and will be completed and ready for operation about the end of April. Her dimensions are: length 260 ft., breadth 43 ft., depth 19 ft. The hull is divided into 3 cargo holds, served by 7 large hatches. The propelling machinery consists of triple expansion surface condensing engines, with cylinders 15½, 26 and 44 in. diam. by 26 in. stroke, supplied with steam by a Scotch marine boiler 14 ft. diam. by 10¼ ft. long, at 195 lb.

Halifax Shipyards Ltd., Halifax, N.S., did the following repair work during February: Canadian Government Merchant Marine s.s. Canadian Forester, sea connections overhauled, rudder lifted, propeller repaired, hull scraped and painted; Commercial Cable Co. s.s. John W. Mackay, docked Feb. 6, for survey and draining of tanks, following bottom damage sustained while entering Halifax harbor, undocked Feb. 9, again docked Feb. 21 for repairs, having discharged 450 miles of cable, and fuel oil; repairs included 13 new plates, 8 plates off, faired and replaced, 3 plates faired in place, 60 floors with shell bars treated on the port side, and 30 floors on starboard side, work completed March 14; Dominion Coal Co., s.s. Coban, general repairs, rudder lifted and pintels bushed, hull scraped and painted, undocked Feb. 21; s.s. Turret Cape, hull and boiler repairs, and scraping and painting, undocked Feb. 21.

W. R. Menchions, Vancouver, B.C., has been given an order by the Royal Canadian Mounted Police, for 2 Columbia River sailing boats, each 32 ft. long by 9 ft. beam. They will have oak frames, fir keels, with cedar planking and decks.

Montreal Drydocks Ltd. has been incorporated under the Dominion Companies Act, with \$450,000 authorized capital, and office at Montreal, to carry on a drydock business, and to build, own and operate drydocks, wharves, breakwaters, ships, boilers, etc. The incorporators are: A. A. Magee, K.C., T. B. Heney, W. C. Nicholson, M. T. Darragh and H. M. Bagley, Montreal.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—P. G. Chace, Vice President, wrote the Port Arthur City Council recently, requesting a renewal of the

\$25,000 annual bonus to the company, which he claims is necessary to enable the plant to be kept in operation. On the establishment of the shipyard, the council granted a bonus of \$25,000 a year for 10 years, and the Mayor is reported to have stated that it could not legally be continued beyond that period, which had expired. The matter was referred to the finance committee.

Prince Rupert Drydock and Shipyard, Prince Rupert, B.C., did the following repair work during February: Canadian Fish & Cold Storage Co. s.s. James Carruthers, 233 tons, docked, painted and general overhaul; Canadian Government Merchant Marine s.s. Canadian Rover, 2,422 tons, docked, painted and general overhaul; s.s. Canadian Winner, 5,482 tons, docked, cleaned, painted and general overhaul; Coastwise Steamship & Barge Co. scow Independent, hull repairs; Dominion Public Works Department snagboat Bobolink, extensive hull repairs commenced; Grand Trunk Pacific Coast Steamship Co. s.s. Prince Rupert, 3,379 tons, docked, painted and propeller repairs; Whalen Pulp & Paper Co. steam tug Bermuda, rudder repairs. Fourteen fishing ships were overhauled.

The Strait of Canso Marine Ry. Co.'s property and equipment, at Point Tupper, N.S., was offered for sale by auction, by order of the directors, March 15.

Victoria Machinery Depot Co., Victoria, B.C.—The C.P.R. s.s. Princess Patricia was hauled out Feb. 26, for general overhaul, and was returned to service March 20.

Wallace Shipyards Ltd., North Vancouver, B.C., is reported to have received a contract from the North Vancouver City Council for repairs to ferry boat no. 2, at \$13,750 for the visible work; other work necessary to be done on a time basis.

Yarrows Ltd., Victoria, B.C.—The Lindvig Steamship Co.'s s.s. Baja California arrived at this company's yard early in March for general overhauling, cleaning, painting and drawing tailshaft.

The following repair work was done during February:—Canadian Pacific Ry. s.s. Princess Beatrice, 1,290 tons, condenser, tubes and auxiliary repairs; s.s. Princess Adelaide, 3,061 tons, docked, and propeller blades changed; s.s. Princess Alice, 3,099 tons, docked and under water repairs due to stranding, also engine room repairs; s.s. Princess Charlotte, 3,844 tons, alterations to cargo doors; Dominion Government s.s. Malaspina, 392 tons, docked, cleaned, painted, general refit and overhaul; British Columbia Cement Co.'s s.s. Matsqui, docked, cleaned, painted, alterations and refit; Ocean Motorship Co.'s motorship Coolcha, 2,403 tons, arrived for examination and repairs after grounding at Albert Head, and several scows hauled out for repairs and painting.

Subsidized Steamship Lines.—J. Evans, Saskatoon, Sask., asked in the House of Commons recently: "What steamship lines are subsidized by the Dominion Government, operating between Canada and European ports, and between Canada and the British West Indies?" The Minister of Trade and Commerce replied: "The Royal Mail Steam Packet Co. is paid a subsidy for a steam service between Canada and the West Indies."

Vancouver Grain Elevator Facilities.

Canadian Railway and Marine World for March contained the order in council approving the sale of the Dominion Government grain elevator at Vancouver, B.C., to the Vancouver Harbor Commissioners. We are officially advised that the commissioners expect in the first place to increase the storage capacity from 1,250,000 to 2,000,000 bush, and to be able to increase the rate of handling grain, by 25% over the present layout. They are also considering the construction of an additional elevator of 1,500,000 bush. capacity, in the vicinity of Ballantyne pier. This will not, however, be settled for a month or so. As also mentioned in our last issue, the E. A. Woodward Co., Winnipeg, has let a contract for building a private terminal grain elevator, the preliminary construction covering track approach and elevator foundation work, which was expected to be under way by the end of March. It will have an initial capacity of 750,000 bush.

With the increased capacity of the commissioners' elevator, and the new Woodward elevator, it is expected that the port will be in a position to handle about 37,000,000 bush. of grain during a season, and if the commissioners build a second elevator, an additional 25,000,000 bush. will be added to the season's Ballantyne pier. This will not, however, capacity. The total handling during the current season will be about 15,000,000 bush.

Harbors and Rivers Estimates.

The estimates for the year ending March 31, 1924, submitted to the House of Commons recently, provide as follows:—

Public Works, Chargeable to Capital.

Port Arthur and Fort William, harbor improvements	\$135,000
St. John, harbor improvements	360,000
Toronto harbor, improvements	250,000

Public Works, Chargeable to Income.

Nova Scotia, \$293,100. The largest item is Yarmouth harbor, dredging, \$85,000.
Prince Edward Island, \$33,700.
New Brunswick, \$65,600.
Quebec, \$572,785. The largest items are: Matane, harbor improvements, \$100,000; Grondines, wharf, \$50,000; Chicoutimi, wharf repairs and rebuilding shed, \$29,500; Grand River, wharf extension, \$29,000.

Ontario, \$463,530. The largest items are: Port Colborne, repairs to breakwaters, \$100,000; Little Current, dredging, \$38,000; Toronto Island, breakwater protection, \$30,000; Haileybury, wharf reconstruction, \$26,400; Cobourg, breakwater reconstruction, \$25,000; Blind River, wharf reconstruction, \$21,000.

Manitoba, \$41,265. The principal item is Selkirk, wharf repairs, \$13,665.

Saskatchewan and Alberta, \$21,000.

British Columbia, \$237,235. The principal items are: Fraser River improvements, \$75,000; Lower Fraser River, operation of snag boat, \$30,000.

Yukon River and tributaries, improvements, \$5,000.

Harbors and rivers generally, \$30,000.

Dredging: Maritime provinces, \$600,000; Ontario and Quebec, \$625,000; Manitoba, Saskatchewan and Alberta, \$100,000; British Columbia, \$400,000.

Public Works, Chargeable to Collection of Revenue

Burlington channel bridge	\$7,500
French River dams	8,500
Kingston, wharfs and bridges	12,000
Montreal River, dam at Latchford	3,000
Riviere du Lievre, lock and dam	3,000
St. Andrew's Rapids, lock and dam	27,000
Selkirk, repair slip	5,000

Coast Navigation Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$10,000 authorized capital, and office at Vancouver, to own and operate ships and carry on a general navigation business.

Atlantic and Pacific Oceans.

The Canadian Robert Dollar Co.'s s.s. Bessie Dollar, which was adrift in the Pacific for 35 days, is reported to have arrived at Yokohama, Japan, March 6, in tow of the company's s.s. Esther Dollar. The Bessie Dollar was picked up originally by the Admiral Line s.s. Pomona, and later transferred to the Esther Dollar.

The Scandinavian-American Line is arranging for a regular steamship service between Copenhagen, Denmark, and Baltic ports and Montreal, with McLean, Kennedy Ltd., Montreal, as agents. The first sailing from Montreal will be the s.s. Pennsylvania, 8,000 tons, May 10, with a monthly service, or oftener, as occasion requires.

The Norwegian-American Line has arranged to resume its steamship service between Canada and Norway, on the reopening of navigation, with the C.P.R. as traffic agent. It is stated that the steamships Topdalsfjord, Nordefjord, Drammensfjord and Ranenfjord, will be used. The first two were built by Canadian Vickers Ltd., Montreal, for the Norwegian-American Line.

A number of business interests are reported to have combined, to charter a steamship to test the conditions for waterborne traffic from Port Nelson, Hudson Bay, to the ocean. Negotiations have been proceeding with Canadian Pacific Steamships Ltd. for chartering the s.s. Pretorian for the purpose, but no definite arrangement in this respect is expected, until about the middle of April. The statement that the Hudson's Bay Co. is in any way concerned, has been denied by E. Fitzgerald, Deputy Chairman, Canadian Advisory Board.

The s.s. Lancastrian, which is stated to be registered in Montreal, and owned in New York, got into difficulties recently through a collision with a coal ship at Gibraltar, and was attached by the owners of the latter for damages. The Lancastrian's crew, who are stated to be U.S. citizens, applied to the U.S. Consul at Gibraltar for maintenance allowances, but were told that as they were sailing on a British ship, they were not entitled to such. On application to the British authorities, they were told that as they were U.S. citizens, they were not entitled to maintenance allowances from the British.

Maritime Provinces and Newfoundland.

The Newfoundland Marine and Fisheries Department has given notice that on the reopening of navigation, the color of the acetylene lights at Shoe Cove Point, near Greenspond, will be changed from red to white.

With the arrival of the s.s. Sable Island at St. John's, Nfld., Feb. 27, the island received its first mail from the outside in 26 days. The Sable Island had to force a way through the ice into port, and was closely followed by the s.s. Rosalind.

St. John, N.B., harbor revenue for February, was about \$28,000, an increase of about \$2,000 over Feb., 1922. The revenue for January exceeded that of Jan., 1922, by \$5,000. The total increase for 1922, over 1921, was \$35,000.

The Boston & Yarmouth Steamship Co.'s s.s. Prince Arthur was withdrawn from service early in March, and the s.s. Prince George substituted. The

Prince Arthur has been drydocked at Boston, Mass., to be overhauled and fitted for the summer service.

Manchester Liners Ltd. s.s. Manchester Corporation was driven ashore in Halifax harbor, March 7, after breaking her anchor chain. She was forced up well on shore at McNab's Island, but was refloated the following day, without much difficulty and only slightly damaged.

The French s.s. Pro Patria, bound from Halifax, N.S., for St. Pierre, which was caught in the ice floes off St. Pierre Island, at the end of February, was released and towed into St. Pierre, March 5, by the C.G.S. Stanley. The Pro Patria had her propeller and rudder smashed by ice, and was drifting helpless amongst the ice for several days.

The Bras d'Or Steamboat Co., North Sydney, N.S., which, according to a report mentioned in our last issue, had bought the s.s. Princess, in New York, to replace the s.s. Marion, burned in Oct., 1922, has advised us that it has not bought her, but that the purchaser is J. T. Burchell, Sydney, N.S. She has not yet been transferred to the Canadian register, owing to difficulties created by the U.S. Shipping Board's new regulations, by which attempts are made to continue U.S. control of ships which have passed from the U.S. register.

The Anderson Co. of Canada has sold the s.s. Dieuze, which was built by Fraser, Brace & Co., Montreal, for the French Government, to W. N. Macdonald, Sydney, N.S., for operation on the North Atlantic. She has a wooden hull, of the following general dimensions: length over all 204½ ft., length b.p. 195 ft., breadth extreme 40½ ft., breadth moulded 39 ft. 8 in., depth of hold 15 ft.; dead-weight capacity 1,400 to 1,500 tons, bunker capacity 150 tons. She has 3 cargo hatches, and a loaded draft aft of 16 ft. She is equipped with 2 vertical inverted engines, of 275 i.h.p. each at 175 r.p.m., and is supplied with steam by 2 Scotch marine boilers at 180 lb., and her consumption is about 13 tons in 24 hours; speed loaded 8½ knots, light 9½ knots. She has 6 cargo winches, steam and steering engine, steam windlass, independent pumps, electric light, wireless telegraph, and the usual auxiliary engines in use on a cargo steamship.

Province of Quebec.

The name of the tug Macsineo, owned by Sincennes-McNaughton Line, Montreal, has been changed to Yvon Dupre, Jr.

Canada Steamship Lines' s.s. Narragansett, which was bought in the United States, and is being rebuilt at Lauzon, Que., has had her name changed to Richelieu.

The Lachine canal was emptied March 17 for the customary annual inspection and repairs preparatory to the reopening of navigation. The repairs are being done under the direction of L. S. Parizeau, engineer in charge, and it is expected that they will be completed and the canal refilled about April 15.

A press report of March 6 said that attempts were being made to release the Quebec & Levis Ferry Co.'s s.s. John S. Thom, which was caught in the ice, near Sorel, Dec. 10, 1922, and held there all the winter. The Dominion Government icebreaking steamship J. D. Hazen was sent from Quebec, March 5, to break up the ice in the river, so as to lessen possible injury to the ship. Work was commenced about 51 miles above Quebec

and about 53 miles from the John S. Thom.

The Quebec Harbor Commissioners are stated to be making some rearrangement of the docking capacity in the harbor, so that full accommodation may be allowed for a number of ocean steamships at one time. It is stated that the C.P.R. Empress steamships will dock in the St. Charles River basin no. 28, and will possibly also take on cargo there, this having been made possible by recent dredging in the St. Charles River. Changes in the system of loading grain into ships have been made whereby three ships can be loaded simultaneously, instead of two, as heretofore, and increasing the total loading capacity from approximately 80,000 bush. to 300,000. A viaduct has been built, connecting wharf 18 to the immigration quarters. Since 1921, the ship tonnage using the port has increased considerably, and five railway tracks have been laid down, making for the quicker handling of both passengers and freight. Regarding the dredging of the St. Lawrence River, approximately 400,000 cub. yd. of sand was removed from the bed in 1922, and it is stated that this amount will be surpassed during this year. A fuel oil tank, of 80,000 barrels capacity, has been erected by the St. Lawrence Independent Oil Co. The Commission is securing opinions as to the best means to be adopted for co-operating in the shipment of Canadian cattle overseas.

Ontario and the Great Lakes.

Canada Steamship Lines' s.s. Kingston was damaged by fire to the extent of about \$500, while tied to her wharf at Toronto, March 13.

The steam tug Crawford has been sold by Peninsula Tug & Towing Co., Warton, Ont., to Ontario Sand & Gravel Co., Windsor, Ont., for towing scows. She was built at Warton in 1905, and is screw driven, by engine of 31 h.p. Her dimensions are: length 86 ft., breadth 15¼ ft., depth 6 ft. 5 in.

The United States & Dominion Transportation Co. held its annual meeting at Toronto, March 2, when its Canadian sailings were arranged for the ensuing season. The steamships Caribou and Manitou will sail between Collingwood and Sault Ste. Marie, calling both ways at Meaford and Owen Sound, and intermediate ports in the north channel.

The Spanish River Pulp Co. is reported to have bought a steam tug from the United States Shipping Board, to replace the tug Reliance, which was lost on Lake Superior in Nov., 1922. The new tug, which was partially built about four years ago, is being completed and fitted out at Chippawa. The price paid is stated as \$30,000.

J. F. M. Stewart, Toronto, has ordered a full Welland Canal size freight steamship from Smith's Dock Co., Southbank-on-Tees, England. Her dimensions will be: length overall 256¾ ft., breadth over steel plating 42¾ ft., depth moulded 18½ ft.; d.w. carrying capacity on 14 ft. draft, 2,300 tons. Full particulars of her were given in Canadian Railway and Marine World for March, page 146.

The United States Lake Survey reports the levels of the Great Lakes, in feet above mean sea level, for February, as follows:—Superior, 601.60; Michigan and Huron, 578.81; St. Clair, 573.07; Erie, 570.88; Ontario, 244.47. Compared with the average February levels for the past 10 years, Superior was 0.30 ft. below; Michigan and Huron, 1.18 ft. below;

Erie, 0.77 ft. below, and Ontario 1.05 ft. below.

The Walkerville & Detroit Ferry Co. expects to place a new ferry steamship in operation between Walkerville and Detroit, about April 15. She was launched at Ecorse, Mich., during March. Her dimensions are: length 140 ft., breadth moulded 45 ft., breadth over guards 54½ ft. She is equipped with fore and aft compound engine with cylinders 26 and 40 in. diam., by 28 in. stroke, and supplied with steam by 2 Scotch boilers.

The s.s. F. Hanson, which the Abitibi Power & Paper Co. built at Twin Falls, Ont., towards the end of last year, has been turned over to the Abitibi Transportation & Navigation Co., a subsidiary, and will be used for towing logs on a stretch of about 20 miles of the Abitibi River, to the company's paper mill. The boat is screw driven, by engine of 16 n.h.p., and has the following dimensions: length 75 ft., breadth 20.7 ft., depth 9.9 ft.; tonnage, 112 gross, 16 net.

The Peninsula Tug & Towing Co., Warton, Ont., has bought the s.s. Edward Buckley, from C. E. Millard, Sarnia, for the Georgian Bay lumber trade. She is a wooden ship, of the well deck type, built in 1891 and rebuilt in 1912, and has the following dimensions: length 154 ft., breadth 31 ft. 7 in., depth 10 ft. 6 in.; tonnage, 414 gross, cargo capacity 450 tons. She is equipped with a fore and aft compound engine, with cylinders 18 and 36 in. diam. by 30 in. stroke, supplied with steam by a firebox boiler 9 by 14 ft.

The Alaska Steamship Co. has sold its s.s. Juneau to the Rutland-Lake Michigan Transportation Co., and is arranging a cargo for delivery at New York, where the ship will be turned over to her new owner. The Juneau was built at Ecorse, Mich., in 1908, and has the following dimensions: length 244 ft., breadth 43 ft. 2 in., depth 27 ft.; tonnage, 2,382 gross, 1,805 net, 3,682 deadweight. She is equipped with quadruple expansion engines, with cylinders 16½, 24, 35 and 51 in. diam. by 36 in. stroke, and has

A deputation of business men from Kingston, Ont., waited on the Dominion Cabinet at Ottawa, March 15, to urge the claims of Kingston as a trans-shipment point for lake grain traffic. Francis King, K.C., ex-President of the Canadian Board of Trade, and General Counsel, Dominion Marine Association, stated that in order to make good the large investment in the Welland Canal, it is essential that a trans-shipment port be established at the foot of deep lake water. The Welland Ship Canal will permit large lake freighters to enter Lake Ontario and proceed to the St. Lawrence, but they must trans-ship their cargo to similar ships for forwarding grain to Montreal.

Manitoba, Saskatchewan, Alberta and Northwest Territories.

A request has been forwarded to Ottawa for an inspection of a site at Fort Resolution for the construction of a wharf and breakwater. It is pointed out that the existing conditions are unsatisfactory and that shipping at the port is increasing considerably.

The Hudson's Bay Co. is building a gasoline motor boat, to replace the motor boat Liard River, which was wrecked last summer. She will be of the tunnel type, with hull 60 ft. long by 12½ ft.

wide, fully housed in, with good accommodation, and equipped with a 90 h.p. engine. She will have a draft of 10 in., and will push a 60-ton housed barge, which is also under construction. The hull is being built at McMurray, Alta., and will be launched in the Clearwater River and taken to Fitzgerald, where both hull and engine will be taken over the Smith portage on skids, and fitted together on the other side, and again launched at Fort Smith, ready for operation on the Great Slave Lake and Mackenzie and Liard Rivers, by about April 30. She will act as a link between Smith portage and the Arctic. Another gasoline motor boat, with 50 h.p. engine, is also being built at McMurray, with hull 42 ft. long, with 5 berth accommodation, for operation between McMurray and Fitzgerald, and on Lake Athabasca, and will push a new housed barge of 45 tons capacity. Two more gasoline motor boats, to be named Chipewyan and Liard River, are also being built for the company, by George Askew, Vancouver, B.C. The steamboats Athabasca River and Mackenzie River are being overhauled and improved, and some other auxiliary craft will be placed in operation during the ensuing season. It is the intention to give such service that persons may reach any point on the Athabasca River, Slave and Peace Rivers, Mackenzie River, Great Slave Lake, Great Bear Lake, Lake Athabasca, and the Liard, Nelson and Peel Rivers, as far as Liard, Nelson and McPherson, respectively. The whole trip from Edmonton to the Arctic will take a month, and a weekly service will be given on the Athabasca River as far as Fitzgerald, and three through trips, or more, from Fort Smith to the Arctic.

British Columbia and Pacific Coast.

The Grand Trunk Pacific Coast Steamship Co.'s service between Victoria, B.C., and Seattle, Wash., was discontinued, March 4.

Clark and Olmstead, Vancouver, have bought the s.s. King and Winge, from Seattle, Wash., owners, for use in the coasting freight trade. She was formerly a north coast fishing ship, and latterly had been used as a pilot boat out of Seattle.

The Pacific Freighters Co.'s motorship Coolcha, bound from San Francisco, Cal., to NanOOSE, B.C., to load lumber, which was driven ashore in a snow storm at Albert Head, near Victoria, B.C., in February, was refloated by the Pacific Salvage Co.'s s.s. Algerine, Feb. 26, and towed to Yarrows Ltd. yard at Victoria, where she was hauled out on the marine ways for survey.

The C.P.R. s.s. Princess Charlotte resumed her sailings on the Vancouver, Seattle, Victoria route, March 10, relieving the s.s. Princess Victoria, which had been withdrawn from service for her annual overhaul. The s.s. Princess Ena loaded lumber at Vancouver, in March, for the White Pass & Yukon Ry., for shipment to Skagway, Alaska. The s.s. Tees has replaced the s.s. Princess Beatrice on the Prince Rupert route, calling at way ports. The s.s. Princess Alice was undocked, and the s.s. Princess Charlotte was drydocked at Yarrows, Ltd., yards, Victoria, during the month.

The signal pole on the bluff at Prospect Point, Vancouver harbor, in the first narrows of Burrard Inlet, has been replaced by a signal mast 65 ft. high, with a yard arm 45 ft. hoist, all painted white.

Signals for inbound ships will be shown from the south yard arm, and will consist of black balls by day and white lights by night. The signals for outbound ships will be shown from the north yard arm, and will consist of red cones by day and red lights at night. The signals will be visible from all points seaward when inbound, and immediately after rounding Brockton point outbound. Ships may communicate with the signal station by flags or lamps, and a 24 hour watch is kept. A searchlight has been installed at the station.

Toronto Ferry Co.'s Lease, Etc.

The company's recent application to the city council for the cancellation of unpaid taxes, amounting approximately to \$20,000, and a notice served on the company by the harbor commissioners, to vacate the docks at the foot of Bay St., for a site to be provided at the foot of York St., has raised the whole question of the company's lease. On going into the matter, the council found that no lease for the dock property has been signed by the company, which claims that it declined to sign, as it was quite unable to make sufficient profit to pay a rental of \$7,500 a year, and taxes as well. The company has, however, operated as if the lease had been signed, but has paid no taxes, and it is reported that the city has been advised that the unpaid taxes are uncollectible. The company objected to the removal of the terminal to York St., but would have been willing to consider it, if a dock building, etc., were provided either by the city, or the harbor commissioners, and arrangements York St. bridge to the dock property, made to run the street cars across the The York St. bridge has, however, been condemned as unsafe for operating street cars over it.

The city council approved an arrangement for the continuance of the ferry service, whereby the company will pay \$8,500 a year rent for the present accommodation at the foot of Bay St. and on the island, this amount to cover taxes, the company to repair the Bay St. docks, and to vacate the property by Oct. 1. The council suggested that the company negotiate with the harbor commissioners for a new site for docks on the area at the foot of Bay St. to be filled in by the commissioners.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Metal & Thermit Corporation, New York, has appointed C. F. Lederer, General Supervisor of Rail Welding, with entire charge of all technical work in the field. A corps of rail welding supervisors will be organized, in connection with the company's various branches, to instruct rail welding men, and assist them in every way possible. The company's Pittsburgh, Pa., branch has been removed to 1514 Fayette St., where a welding shop is being built, for making thermit welding repairs and relining crucibles.

Canadian Pacific Railway—Forty Second Annual Report.

To the Shareholders:

The accounts of the Company for the year ended December 31st, 1922, show the following results:—

Gross Earnings	\$186,675,035.84
Working Expenses (including all taxes).....	150,373,344.83
Net Earnings	\$36,301,691.01
Deduct Fixed Charges.....	13,348,905.66
Surplus	\$22,952,785.35
Contribution to Pension Fund.....	500,000.00

From this there has been charged a half-yearly dividend on Preference Stock of 2 per cent., paid September 30th, 1922.....	\$1,613,638.42
And three quarterly dividends on Ordinary Stock of 1½ per cent. each, paid June 30th, 1922, September 30th, 1922, and December 30th, 1922.....	13,650,000.00
	15,263,638.42
	\$ 7,189,146.93

From this there has been declared a second half-yearly dividend on Preference Stock of 2 per cent., payable March 31st, 1923.....	\$1,613,638.42
And a fourth quarterly dividend on Ordinary Stock of 1½ per cent., payable March 31st, 1923.....	4,550,000.00
	6,163,638.42

Leaving net surplus for the year.....	\$1,025,508.51
In addition to the above dividends on Ordinary Stock, three per cent. was paid from Special Income.	

SPECIAL INCOME FOR YEAR ENDED DECEMBER 31st, 1922.

Balance at December 31st, 1921.....	\$23,717,491.20
Less: Dividend paid April 1st, 1922.....	1,950,000.00
	\$21,767,491.20
Net Revenue from Investments and Available Resources, Exhibit "C".....	2,694,979.09
Interest on Deposits, and Interest and Dividends on Other Securities.....	1,957,190.26
Net Earnings Ocean and Coastal Steamship Lines.....	3,448,293.48
Net Earnings Commercial Telegraph and News Department, Hotels, Rentals and Miscellaneous.....	2,991,892.30
	\$32,859,846.33
Less: Payments to Shareholders in dividends: June 30th, 1922, September 30th, 1922, and December 30th, 1922.....	5,850,000.00
	\$27,009,846.33
From this a dividend has been declared payable March 31st, 1923.....	\$ 1,950,000.00

2. The working expenses for the year, including all taxes, amount to 80.55 per cent. of the gross earnings, and the net earnings to 19.45 per cent., as compared with 82.28 per cent. and 17.72 per cent. respectively in 1921.

3. The gross earnings of your transportation system during the past fiscal year were less than those of 1921 by \$6,346,818, but the net earnings increased by \$2,099,950. The net surplus over that of 1921 increased by \$270,117, the difference between the increases in net earnings and net surplus being due to the increase in fixed charges owing to the sale of Consolidated Debenture Stock. The decrease in gross earnings, as indicated by the monthly operating results, continued for the first nine months of the year due to general business depression, which reflected itself very markedly in both freight and passenger revenues. Beginning with October and in consequence of the very bountiful crops in Canada, both East and West, and notwithstanding the drastic reduction in rates on grain to Fort William under what is known as the "Crow's Nest Agreement," the revenues improved to such an extent that a decrease in gross earnings on September 30th of \$11,560,856 was reduced during the last three months by \$5,214,000. The working expenses were by economical administration reduced by \$8,446,769 during the year. In view of the conditions which prevailed during the first nine months of the year, your Directors cannot but regard the result of the operations as satisfactory. They feel, too, that short of some calamity or grave economic disturbance which cannot be foreseen the worst of the after-war depression has passed and that more stable and favorable commercial conditions should exist from now on, with the consequent improvement in traffic and revenues.

4. The sales of agricultural land in the year were 107,503 acres for \$1,732,742.43, being an average of \$16.12 per acre. Included in this area were 2,440 acres of irrigated land, which brought \$61.73 per acre, so that the average price for the balance was \$15.06 per acre. The sales of land during the year were disappointingly small due to the depression in Western Canada. The conditions were, however, general and combined with small immigration, resulted in little new settlement and the lowest number of farm-land transactions in any year during the last ten years.

5. The Canadian Pacific Steamships, in common with all other ocean lines, have in 1922 passed through a trying period. The large amount of ocean tonnage which the owners have endeavored to keep in commission has naturally created a situation seriously affecting revenues from transportation, both as to freight and passengers. In addition to the steamship lines of private companies, a large Government-owned tonnage has been in active competition with the old-established lines on all oceans. The competition of the United States lines especially has been of a demoralizing nature; in some cases lower freight rates were established than shippers represented as necessary and were willing to accept. The Atlantic service, however, shows a gratifying comparison with that of the previous year. During 1921 your ships performed 136 round voyages, and in 1922, 188—an increase of 52 voyages. There was a shrinkage in gross earnings of \$2,502,000, but there was a decrease in operating expenses of \$2,736,000, thereby increasing net profits \$234,000. In other words, the average cost of operation per voyage in 1921 was \$143,000, and in 1922, \$89,000, a reduction of \$54,000 per voyage, or 37%, although there were several larger ships in commission during the past year.

Notwithstanding this heavy decrease in operating expenses, the furnishings, equipment and victualling of your passenger steamers have been maintained at the highest possible standard. The efficiency of the service and the discipline and morale of the ships' crews were never better, and their popularity with the travelling public is everything that can be desired.

Your Pacific service during the past year has undergone considerable changes. The fine new steamers "Empress of Canada" and "Empress of Australia" have taken the place of the "Empress of Japan" and the

"Monteagle," and the Company is now operating four of the finest, best equipped and fastest steamers on the Pacific. Unfortunately, however, the Pacific trade during the past year has been of a disappointing character. China has been almost continuously in a state of civil war, and in those sections where actual war conditions have not prevailed, strikes and other disturbing features have paralyzed trade and commerce, materially affecting passenger travel, both business and tourist. The most severe competition ever met on the Pacific has been experienced. The United States Merchant Marine are operating ten passenger and cargo ships from San Francisco and Puget Sound ports which are the largest and most expensive merchant ships built in the United States.

Your Directors feel, however, that you may look forward to the present year showing better results. Special efforts are being made to encourage through travel between the Orient and Europe, and the summer schedules will enable a passenger to travel from Japan to England or France, a distance of about 10,000 miles, in twenty-one days, which should prove advantageous to your line in competition with the Suez route.

6. During the year your Directors sold in London £3,087,007, and in New York \$2,000,000 of Four per Cent. Consolidated Debenture Stock, the issue of which you had previously authorized.

The market for your Company's securities both in New York and London continues active and favorable.

7. During the year your Directors consented to the issue of \$2,500,000 First Refunding Mortgage Six per Cent. Bonds of the Minneapolis, St. Paul and Sault Ste. Marie Railway Company, and also approved the obtaining of a similar amount on Short Term Notes by that Company and an extension of \$3,000,000 One-Year Notes maturing in June, 1922. Your Company assumed no direct responsibility in connection with either of these issues.

The improvement in the revenues of the Minneapolis, St. Paul and Sault Ste. Marie Railway System during the last fiscal year was very marked, its net operating revenues for the year being \$7,178,971.82, as against a loss of \$696,584.13 for the previous year. In the opinion of the Directors of the "Soo" Company, this improvement should continue and its financial position be materially strengthened.

8. In anticipation of your confirmation, your Directors authorized capital appropriations, in addition to those approved at the last annual meeting, aggregating for the year 1922, \$1,512,680. Your approval is asked to expenditures on capital account during the present year, as and when the conditions warrant such expenditures, of \$7,630,100. Of this amount the principal items are:—

Replacement and enlargement of structures in permanent form....	\$ 803,700
Additional stations, round houses, freight sheds and shops, and extensions to existing buildings.....	318,400
Tie plates, rail anchors, ballasting, ditching and miscellaneous roadway betterments	1,250,400
Replacement of rail in main and branch line tracks with heavier section	169,500
Additional terminal and side track accommodation.....	502,500
Extension work on Chateau Frontenac Hotel, Quebec, including new equipment	2,800,000
Bungalows Camps in Ontario.....	90,000
Additional lining, Connaught Tunnel.....	695,000
Mechanical Department, machinery at various points.....	78,700
Improvements in connection with Telegraph service.....	39,100

The balance of the amount is required for miscellaneous works to improve facilities and effect economies over the whole System.

9. Your Directors are of the view that reasonable extensions of your branch line mileage in Alberta and Saskatchewan, in addition to the lines which you have already authorized, are desirable, and your authority will be asked for proceeding with the construction of the following lines and for the issue and sale of a sufficient amount of Four per Cent. Consolidated Debenture Stock to meet the expenditure, namely:

Kipp to Bow River.....	22 miles
Archive-Wymark Branch, Mileage 25 to 50.....	25 miles
Tuffnell-Prince Albert Branch.....	50 miles

10. Your Directors are making provision with your approval for obtaining the following necessary additions to your Company's equipment:—

6 Steel Café-Parlor cars,	
6 Steel Buffet-Parlor cars,	
12 Steel Sleeping cars,	
15 Steel First Class coaches,	
12 Steel Mail and Express cars,	
15 Steel Colonist cars,	
300 75-ton Coal Cars,	
300 41-foot Flat cars,	
1000 Box cars,	
300 Automobile cars,	
50 Oil Tanks,	
36 Locomotives,	
at a total cost of \$12,295,000.	

11. As provision has been made for the retirement of the Note-Certificates of the Company issued in 1914 for \$52,000,000 and maturing on March 2nd, 1924, your Directors are arranging that these Note-Certificates shall be paid off in July of this year, and notice in accordance with the provisions of the agreement establishing the Special Investment Fund will be given by the Trustee.

12. The death occurred on the 17th of September last of Mr. Richard B. Angus in the ninety-second year of his age. The late Mr. Angus was constituted a member of the first Board of Directors by the Parliamentary Act incorporating the Company in the year 1881, and was continuously during the succeeding forty-one years a Director of the Company and a member of the Executive Committee of the Board. His constant devotion to the Company's interests, his sound judgment and wise counsel, which were at all times of the greatest assistance in the determination of the Company's policies and in the administration of its affairs and his close personal relations with the members of the Board made his passing of particularly poignant regret. Your Directors desire to record their sense of the great loss sustained by the Company and by the Country through his decease. The vacancy caused by Mr. Angus' death has not yet been filled.

13. Mr. W. N. Tilley, K.C., of Toronto, Consulting Counsel of the Company, was elected a Director to fill the vacancy caused by the death of Sir John Eaton.

14. The undermentioned Directors will retire from office at the approaching Annual Meeting. They are eligible for re-election:—

Sir Edmund B. Osler,
Sir Herbert S. Holt,

Colonel Frank S. Meighen, C.M.G.

For the Directors,

E. W. BEATTY,

President.

Montreal, March 12th, 1923.

GENERAL BALANCE SHEET, DECEMBER 31st, 1922.

ASSETS		LIABILITIES	
Property Investment:		Capital Stock:	
Railway, Rolling Stock Equipment and Lake and River Steamers.....	\$605,989,405.89	Ordinary Stock	\$260,000,000.00
Ocean and Coastal Steamships, Exhibit "A".....	59,787,250.24	Four Per Cent. Preference Stock.....	80,681,921.12
Acquired Securities (Cost):			\$340,681,921.12
Exhibit "B".....	128,172,166.18	Four Per Cent. Consolidated Debenture Stock..	253,229,865.74
Advances to Controlled Properties and Insurance Premiums.....	10,705,762.52	Mortgage Bonds:	
Investments and Available Resources:		Algoma Branch 1st Mortgage 5 per cent.....	3,650,000.00
(Including amount held in trust for 6% Note Certificates, \$61,032,439.45)		Note Certificates 6 Per Cent.....	52,000,000.00
Deferred Payments on Lands and Townsites	\$65,681,508.67	Current:	
Imperial and Dominion Government Securities	20,681,588.33	Audited Vouchers.....	8,249,900.73
Provincial and Municipal Securities.....	792,721.29	Pay Rolls.....	3,679,336.15
Debenture Stock in Treasury.....	5,000,000.00	Miscellaneous Accounts Payable.....	10,798,601.95
Miscellaneous Investments, Exhibit "C," Cost	42,924,970.08		22,727,838.83
Assets in Lands and Properties, Exhibit "D"	94,056,449.95	Accrued:	
Cash	9,452,380.88	Rentals of Leased Lines and Coupons on Mortgage Bonds.....	688,446.76
	238,589,619.20	Equipment Obligations.....	14,670,000.00
Working Assets:		Reserves and Appropriations:	
Material and Supplies on Hand.....	\$28,723,731.05	Equipment Replacement.....	14,325,081.71
Agents' and Conductors' Balances.....	3,442,368.53	Steamship Replacement.....	16,564,794.89
Net Traffic Balances.....	1,558,528.49	Reserve Fund for Contingencies and for Contingent Taxes.....	37,168,922.37
Imperial, Dominion and United States Governments, Accounts due for Transportation, etc.	1,898,427.66		68,058,798.97
Miscellaneous Accounts Receivable.....	7,429,996.95	Premium on Ordinary Capital Stock Sold.....	45,000,000.00
Cash in Hand.....	41,143,893.42	Net Proceeds Lands and Townsites.....	88,356,525.55
	84,196,946.10	Surplus Revenue from Operation.....	129,506,628.36
		Special Reserve to meet Taxes imposed by Dominion Government.....	2,462,922.04
		Surplus in other Assets.....	106,408,202.76
			\$1,127,441,150.13
	\$1,127,441,150.13		

STATEMENT OF EARNINGS FOR THE YEAR ENDED DECEMBER 31st, 1922.

From Passengers	\$ 35,331,524.95
" Freight	128,918,136.97
" Mails	3,594,894.92
" Sleeping Cars, Express and Miscellaneous.....	18,830,479.00
	\$186,675,035.84

STATEMENT OF WORKING EXPENSES FOR THE YEAR ENDED DECEMBER 31st, 1922.

Transportation Expenses.....	\$ 70,994,918.81
Maintenance of Way and Structures.....	27,405,339.18
Maintenance of Equipment.....	32,009,461.39
Traffic Expenses	7,381,373.39
Parlor and Sleeping Car Expenses.....	2,128,381.02
Expenses of Lake and River Steamers.....	1,414,512.87
General Expenses (including all taxes).....	9,039,358.17
Total.....	\$150,373,344.83

DESCRIPTION OF FREIGHT FORWARDED.

	1920	1921	1922
Flour	9,644,410	11,718,510	12,423,920
Grain	172,536,485	175,506,119	245,481,731
Live Stock	1,947,976	1,612,049	1,656,750
Lumber	3,565,175,867	2,382,570,398	2,626,902,665
Firewood	272,546	204,836	296,666
Manufactured Articles.....Tons	9,330,111	6,853,857	7,941,383
All other articles.....Tons	9,625,065	7,018,876	7,438,262

TRAIN TRAFFIC STATISTICS—FOR TWELVE MONTHS ENDED DECEMBER 31ST, 1922 AND 1921.
Earnings of Lake and River Steamers and of Kettle Valley Railway not included in this Statement.

	Year ended Dec. 31st, 1922.	Year ended Dec. 31st, 1921.	Increase or Decrease. Amount or number.	Per cent.
TRAIN MILEAGE.				
Passenger trains	18,776,971	18,931,622	154,651	.82
Freight trains	22,330,177	18,828,421	3,501,756	18.60
Mixed trains	1,601,702	1,647,291	45,589	2.77
Total train mileage.....	42,708,850	39,407,334	3,301,516	8.38
CAR MILEAGE.				
Passenger.				
Coaches and P. D. and S. cars.....	93,527,421	94,803,210	1,275,789	1.35
Combination cars	2,591,903	2,551,439	40,464	1.59
Baggage, Mail and Express cars.....	41,775,563	45,035,660	3,260,097	7.24
Total Passenger car mileage.....	137,894,887	142,390,309	4,495,422	3.16
Freight.				
Loaded	521,137,749	439,278,916	81,858,833	18.63
Empty	237,165,024	198,371,578	38,793,446	19.56
Caboose	24,789,363	20,979,855	3,809,508	18.16
Total Freight car mileage.....	783,092,136	658,630,349	124,461,787	18.90
Passenger cars per Traffic Train Mile.....	6.77	6.92	.15	2.17
Freight cars per Traffic Train Mile.....	32.72	32.17	.55	1.71
PASSENGER TRAFFIC.				
Passengers carried (earning revenue).....	14,310,842	15,186,081	875,239	5.76
Passengers carried (earning revenue) one mile.....	1,250,196,824	1,361,767,543	111,570,719	8.19
Passengers carried (earning revenue) one mile per mile of road.....	95.485	104.817	9.332	8.90
Average journey per passenger.....miles	87.36	89.67	2.31	2.58
Average amount received per passenger.....\$	2.37	2.59	.22	8.49
Average amount received per passenger mile.....cts.	2.71	2.89	.18	6.23
Average number of passengers per train mile.....	61.35	66.17	4.82	7.28
Average number of passengers per car mile.....	13.01	13.99	.98	7.01
Revenue from passengers per passenger car mile.....cts.	35.23	40.46	5.23	12.93
Total passenger train earnings per train mile.....\$	2.36	2.69	.33	12.27
Total passenger train earnings per mile of road.....\$	3,672.01	4,265.71	593.70	13.92
FREIGHT TRAFFIC.				
Tons of revenue freight carried one mile.....	12,785,232.075	10,636,951.521	2,148,280.554	20.20
Tons of non-revenue freight carried one mile.....	1,397,456.660	1,487,724.058	90,267.498	6.07
Total tons (all classes) freight carried one mile.....	14,182,688.635	12,124,675.579	2,058,013.056	16.97
Tons of revenue freight carried one mile per mile of road.....	976.479	818,743	157,736	19.27
Tons of non-revenue freight carried one mile per mile of road.....	106.731	114,513	7,782	8.30
Total tons (all classes) freight carried one mile per mile of road.....	1,083,210	933,256	149,954	16.07
Average amount received per ton per mile of revenue freight.....cts.	0.996	1.196	0.200	16.72
Average No. of tons of revenue freight per train mile.....	534.23	519.49	14.74	2.84
Average No. of tons of non-revenue freight per train mile.....	58.39	72.66	14.27	19.64
Average No. of tons (all classes) freight per train mile.....	592.62	592.15	.47	.08
Average No. of tons of revenue freight per loaded car mile.....	24.53	24.21	.32	1.32
Average No. of tons of non-revenue freight per loaded car mile.....	2.68	3.39	.71	26.94
Average No. of tons of (all classes) freight per loaded car mile.....	27.21	27.60	.39	1.41
Freight train earnings per loaded car mile.....cts.	24.43	28.95	4.52	15.61
Freight train earnings per train mile.....\$	5.32	6.21	.89	14.33
Freight train earnings per mile of road.....\$	9,722.81	9,789.44	66.63	.68

J. LESLIE, Comptroller.

Auditors' Certificate.

We have examined the Books and Records of the Canadian Pacific Railway Co. for the year ending December 31st, 1922, and having compared the annexed Balance Sheet and Income Account therewith, we certify that, in our opinion, the Balance Sheet is properly drawn up so as to show the true financial position of the Company at that date, and that the relative Income Account for the year is correct.

PRICE, WATERHOUSE & CO.,

Chartered Accountants (England).

Montreal, March 10th, 1923.

FREIGHT TRAFFIC.

	—Years Ended December 31st—		
	1920	1921	1922
Number of tons carried.....	30,160,134	23,710,606	27,744,586
Number of tons carried one mile	13,994,508,975	10,811,087,106	12,977,400,058
Earnings per ton per mile.....	1.04 cents	1.19 cents	0.99 cents

PASSENGER TRAFFIC.

	Years Ended December 31st		
	1921	1922	
Number of passengers carried.....	15,318,358	14,436,764	
Number of passengers carried one mile.....	1,373,928,588	1,260,712,609	
Earnings per passenger per mile.....	2.91 cents	2.73 cents	

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—
American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg, Man.

Canadian Electric Railway Association—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal. Western Lines, F. W. Thompson, Chairman, 805 Boyd Building, Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal. Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 58 Rushbrooke Street, Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, 187 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Office, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorffler, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Building, Winnipeg, Man.

Transportation Conventions in 1923.

May.—International Railway Fuel Association, Cleveland, Ohio. J. G. Crawford, 702 East 51st Street, Chicago, Ill.

May 1 to 4.—Air Brake Association, Denver, Col. F. M. Nellis, 165 Broadway, New York.

May 7 to 9.—American Association of Engineers, Norfolk, Va. C. E. Brayer, 63 East Adams Street, Chicago, Ill.

May 9.—American Association of General Baggage Agents, Chattanooga, Tenn. E. L. Duncan, 332 South Michigan Ave., Chicago, Ill.

May 9 to 11.—American Railway Development Association, St. Louis, Mo. A. Leckie, Industrial Agent, Kansas City Southern Ry., Kansas City, Mo.

May 15 to 17.—American Railway Association, Division 6, Purchases and Stores, Chicago, Ill. W. J. Farrell, 30 Vesey Street, New York.

May 16 to 18.—Association of Railway Claim Agents, Denver, Col. H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

June 13 to 15.—American Association of Railroad Superintendents, Kansas City, Mo. J. Rothschild, 400 Union Station, St. Louis, Mo.

June 18.—American Train Dispatchers Association, Chicago, Ill. C. L. Darling, 1310 Mallers Bldg., Chicago, Ill.

June 20.—American Railway Association, Mechanical Division, Chicago. V. R. Hawthorne, 431 South Dearborn Street, Chicago, Ill.

June 25.—American Society for Testing Materials, Atlantic City, N.J. C. L. Warwick, 1315 Spruce Street, Philadelphia, Pa.

Sept. 18 to 20.—Roadmasters' and Maintenance of Way Association, Chicago, Ill. P. J. McAndrews, Chicago & Northwestern Ry., Sterling, Ill.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

The Quebec Railway Light, Heat and Power Co., Ltd.

STATEMENT OF ASSETS AND LIABILITIES AS AT 31st DECEMBER 1922

To the Shareholders:—

Your Directors beg to submit the following report of the operations of your Company for the twelve months period ending December 31, 1922, together with Statement of Assets and Liabilities as at that date.

Gross Earnings from Operation.....\$2,858,606.76
Total Operating Expenses.....2,010,814.62

Net Earnings from Operation.....847,792.14

Less: Fixed Charges:—

Percentage of City Earnings payable to the City of Quebec.....\$ 42,697.27
Interest on Bonds, Quebec Montmorency & Charlevoix Railway.....125,000.00
Interest on Bonds, Quebec Jacques Cartier Electric Co.42,450.00
Interest on Bonds, Q. R. L. H. & P. Co., Ltd.....325,630.71
Sundry Interest paid.....22,183.65 557,961.63

Net Income.....289,830.51

Appropriated for:

Depreciation Reserve.....182,545.99
Bond Discount.....21,183.60 203,729.59

xxNet Surplus.....86,100.92

Balance at credit of Surplus Account on December 31st, 1921.....684,412.87

Less: Income Tax 1921.....10,364.34 674,048.53

Balance at credit of Surplus Account, on December 31st, 1922.....\$ 760,149.45

xxSubject to Income Tax.

FINANCIAL

The Gross Earnings from operation for the year 1922 were \$2,858,606.76, being an increase over the corresponding period ending December 31st, 1921, of

\$100,770.40

The operating expenses for the year were \$2,010,814.62, being a decrease over the previous year's operating expenses of

\$63,214.39

The Net Earnings from operation for the year were \$847,792.14, or an increase over the previous year of

\$163,984.79.

After deducting fixed charges and tax on earnings due City of Quebec, the net income for the year amounts to \$289,830.51, or an increase of \$202,317.88 over the year 1921; your directors have deemed it wise to make provision for a reserve for depreciation of \$182,545.99, and after setting aside this amount and a further sum of \$21,183.60 for bond discount, there remains a balance of \$86,100.92, which has been carried forward to surplus account; from the surplus of \$87,512.63 carried forward from December 31st, 1921, there has been deducted \$10,364.34 for income tax on the earnings for period ending 31st December, 1921, leaving a balance of \$77,148.29, which, added to the surplus of \$86,100.92 carried forward on this year's account and added to the amount previously at credit of surplus account, there remains a total of \$760,149.45 at credit of surplus account at 31st December, 1922.

From the earnings of the Company and from the sale of Treasury Bonds the Company has provided for construction expenditures of \$192,083.99 during the year 1922, and has made a reduction in Sundry Loans and Current Liabilities of \$333,829.25, and has also added to its current assets the sum of \$135,495.89, thus improving the liquid position of the Company to the extent of

\$469,325.14

In order to more clearly show the capital liabilities of the Company, the outstanding bonds of the Subsidiary Companies are shown in detail against a contra amount of 5% Consolidated Gold Bonds due 1939 held in escrow to redeem the bonds of the Subsidiary Companies.

Authority was obtained from the Federal Government during the year to change the Capital Stock of the Company as it had existed in the past, to shares having no nominal or par value; this matter is still under advisement, but has not yet been dealt with.

GENERAL

During the year the Company constructed 5,719 ft. or 1.08 track miles of new track extensions, which extensions were urgently needed; these extensions included a loop at Parent Square and a curve at Crown and Joseph Streets, which

enabled the Company to materially improve its service, particularly during the Exhibition and Race meeting periods.

Ten additional cars were bought and added to the rolling stock equipment, during the year, which materially assisted the Company in satisfactorily handling traffic.

Considerable construction and maintenance work has been carried out during the year in the Gas Division, including the installation of additional Carburettor Water Gas Set at the Gas Works, and the laying of 9,816 lineal feet of new gas mains and 207 new services.

In August your Company, on account of economies effected in the gas operating department, was enabled to reduce the price of gas to the citizens of Quebec from \$1.75 to \$1.55 per 1,000 cu. ft.

In the Power Department most satisfactory progress has been made and the Company has added 970 electric light and power customers to its system.

During the year extensive repairs have been carried out at the Montmorency and Chaudière plants, as well as to the transmission lines and distribution systems generally.

The accounts of your Company have been duly audited and certified to by Messrs. P. S. Ross & Sons, Chartered Accountants, Montreal.

Your Directors desire to place on record their appreciation of the valuable and faithful services rendered by the Officers and Employees of the Company.

Respectfully submitted on behalf of the Directors.

E. A. ROBERT,
President.

STATEMENT OF ASSETS AND LIABILITIES AS AT 31st DECEMBER, 1922

ASSETS

Investments, Stocks, Bonds and Interest in other Corporations.....\$14,298,633.02
Treasury Bonds.....95,934.00
5% Consolidated Gold Bonds due 1939 in escrow to redeem bonds of Subsidiary Companies.....3,411,000.00
Investment Adjustment and Bond Discount, etc.....4,100,932.33
Advances to Controlled Companies.....2,136,545.93
General construction, etc.....534,098.17
Cash on hand and in banks.....159,100.17
Accounts and Bills Receivable.....317,264.73
Stores and Supplies on hand.....221,560.63
Prepaid Expenses, etc.....58,237.09

\$25,333,306.07

LIABILITIES

Capital Stock.....\$10,000,000.00
Less: unissued.....500.00

\$ 9,999,500.00

Bonds:

5% Consolidated Gold Bonds, due 1st Dec. 1939.....6,589,000.00
Outstanding Bonds of Subsidiary Companies as follows:—
Que. Mont. & Charlevoix, due 1st June 1923 2,500,000.00
Que. Jacq. Cartier Elec. Co., due 1st June 1931 849,000.00
Can. Elec. Light Co. due 1915.....62,000.00

3,411,000.00

10,000,000.00

5% 30 year Income Bonds, due 1st Sept. 1951.....2,323,634.00
Bills Payable.....382,000.00
Accounts Payable, etc.....414,668.19
Sundry Loans and Advances.....61,550.00
Accrued Interest.....37,310.92
Deferred and Unclaimed Interest.....65,082.08
Accrued Charges.....103,687.60
General Suspense and Reserves.....185,723.93
Surplus.....760,149.45

\$25,333,306.07

Certified Correct:

(Signed) H. G. BOSSE,
Comptroller.

Approved:
(Signed) J. E. HUTCHESON,
Director.

Approved:
(Signed) K. B. THORNTON,
Director.

Audited, Verified and Reported on.
(Signed) P. S. ROSS & SONS,
Chartered Accountants.
Montreal, 26th February, 1923.

QUALITY

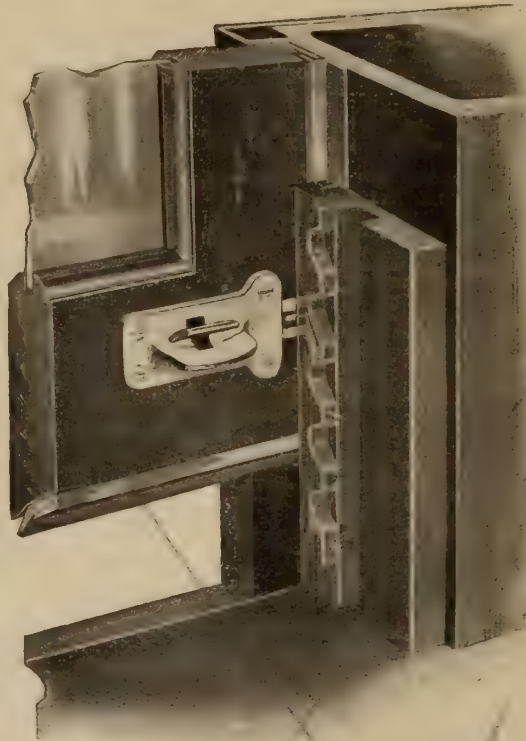
LEADERSHIP

EDWARDS

SERVICE

SINCE 1887

The Fixtures with an Established Reputation



View showing application of A-21 sash lock with phantom view of stop bar in operative position.

Put your cars on a safety first basis by the use of a sash fixture which is absolutely safe. Safety Engineers invariably recommend the use of Edwards' Sash Fixtures as a long step toward the protection of the public.

Manufacturers of

EDWARDS

Window Fixtures
Metal Top Casings

All-Metal
Sash Balances
Railway Devices

Top, Bottom and Side
Weather Stripping

Metal Extension
Platform Trap Doors

Send for samples

EDWARDS'

Trap Doors and Fixtures

Edwards' All-Metal Trap Doors meet the most exacting requirements in modern steel passenger car construction.

For the safety and comfort of your passengers and employees. To avoid unnecessary delays.

For Durability of construction. Simplicity of action. Strength and accessibility of parts and ease of adjustment and repair.

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Manufactured by the O. M. EDWARDS CO., Inc., Main Office and Factory, Syracuse, N. Y.

In addition to O. M. Edwards Equipment we are also

Exclusive Canadian Distributors for:

Golden Glow Locomotive Headlights
Keystone Turbo-Generators
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Segur Armature Winding Tools

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Nuttall Gears and Pinions
Keystone Steel Gear Cases
Rico Vacuum Oilers
Faraday Car Signal Systems
Safety Car Lighting Fixtures
Le Carbone Carbon Brushes
Dayton Mechanical Ties

We will gladly send descriptive literature on these lines to any railway official on request.

LYMAN TUBE & SUPPLY CO., LIMITED

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Toronto

Winnipeg

Vancouver

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under
Positions wanted and Positions Vacant, 3c. per word.
Equipment for Sale advertisements, 4c. per word.
Allow five words where replies are to be sent to a box number. Minimum order—\$1.
Rates under other headings and for display advertisements on application.

FOR SALE

Cross Compound Inclined Condensing Engine, 24" x 48" x 60" stroke, suitable for 150 lbs. pressure, with shafting and radial paddle wheels. All in first class condition.

The Upper Ottawa Improvement Company,
194 Middle Street - Ottawa, Ont.

Modern Marine Machinery

Automatic Steam Towing Machines, Ship Windlasses, Cargo and Deck Winches, Steam Capstans, Dock Gypsies, Steering Engines, Hydraulic Hoists, etc.

Manufactured by the

CORBET FOUNDRY & MACHINE CO., LIMITED, Owen Sound, Canada.

FOR TICKET CASES AND COMMERCIAL FURNITURE

of all descriptions to stock or special design, apply to

The Canadian Office and School Furniture Co., Limited
Preston - Ontario

CANADIAN PACIFIC RAILWAY COMPANY Notice to Shareholders

The Forty-second Annual General Meeting of the Shareholders of this Company for the election of Directors to take the places of the retiring Directors and for the transaction of business generally, will be held on Wednesday, the second day of May next, at the principal office of the Company, at Montreal, at Twelve o'clock noon.

The Common Stock Transfer Books will be closed in Montreal, New York and London at 3 p.m. on Tuesday, the third day of April. The Preference Stock Books will be closed in London at the same time.

All books will be re-opened on Thursday, the third day of May.

By order of the Board,

ERNEST ALEXANDER,

Secretary.

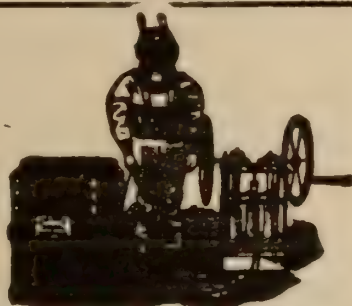
Montreal, March 12th, 1923.

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RAILS

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TORONTO

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Canadian Railway and Marine World,
70 Bond Street, Toronto, Canada.

Please put my name on your subscription list. \$2 is enclosed. Will mail \$2 on receipt of bill. This order may be discontinued at any time after the first year by written notice.

Name.....

Address.....

Position.....

Engineers and Contractors**The Strauss Bascule Bridge Co.**

Engrs. & Patentees of Strauss Movable Bridges.

STRAUSS Bridges in CANADA number more than TWICE as many as all other Bascule and Lift Bridges COMBINED. Consult us before adopting plans or undertaking construction.

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Canadian Offices: 14 Windsor Hotel, Montreal; 103 London Bldg., Vancouver.

New York Office: Knickerbocker Bldg.

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ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
Reports, Design and Construction
Complete Railway Shop and Terminal Properties
Electrification of Steam Railroads.
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ANGUS SINCLAIR, C. E.*Railway Contractor*

OFFICE: EXCELSIOR LIFE BUILDING
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Traffic Service**Scientific Instruments****Surveying & Nautical Instruments***Established 1857***HARRISON & CO.**

53 Metcalfe St., Dominion Sq. MONTREAL

**Norton Jacks**

are the highest
grade lifting Jacks
in the world

*Made by***A. O. NORTON**

Limited

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Bureau of Canadian Information

THE Canadian Pacific Railway, through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In the Reference Libraries maintained at Montreal, Chicago and New York are complete data on natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added. No charge or obligation attaches to this service. Business organizations are invited to make use of it.

Canadian Pacific Railway**Department of Colonization and Development**

165 E. Ontario St. Chicago 355 Windsor Stn. Montreal C.P.R. Bldg., Madison Ave., at 44th St. New York

IMPERIAL BANK OF CANADA

Capital Authorized.....\$10,000,000
Capital Paid Up.....7,000,000
Reserve Fund.....7,500,000

Head Office - - Toronto

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the world.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches Throughout the Dominion of Canada.

REINFORCED BRAKESHOES

OUR BRAKE SHOES decrease maintenance cost—increase brake efficiency

Dominion Brake Shoe Company Limited

Montreal—350-356 St. James Street Toronto—342 Adelaide Street West
Winnipeg—150 Princess St. Vancouver—609-613 Bank of Nova Scotia Bldg.

ROBERT W. HUNT, President

CHARLES WARNOCK, Vice-Pres. and Genl. Mgr.

Robert W. Hunt & Co., Limited

Consulting and Inspecting Engineers

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Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement, Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

Resident inspectors at all important manufacturing centres in Canada, the United States and Great Britain.

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Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Passenger Service. BABBITTS. Miscellaneous Brass Castings for Railroads.

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The Cost of Installing and Maintaining

your electric transmission lines might be materially reduced if you were to install the advantages of laying such lines directly in trench in the ground.

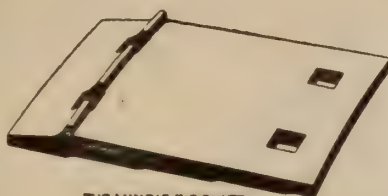
STANDARD Steel-Tape-Armored Cables

may solve this problem for you. STANDARD Steel-Tape-Armored Cables have in many cases shown a 50 per cent. saving in installation cost over single runs of lead-covered cables laid in conduits.

Write our nearest office for Bulletin 680.

Standard Underground Cable Co. of Canada, Limited

Branch Offices and Warehouses:
Montreal, Toronto, Winnipeg, Seattle.
General Offices and Works: Hamilton, Ont.



THE LUNDIE TIE PLATE

THE LUNDIE TIE PLATE THE LUNDIE DUPLEX RAIL ANCHOR

THE LUNDIE ENGINEERING CORPORATION

920 BROADWAY, NEW YORK

Chicago Office:
166 West Jackson Boulevard

Canadian Representatives for Tie Plates:
THE HOLDEN COMPANY, LTD.
350 St. James Street, Montreal



Geo. P. Nichols & Bro.

Turntable Tractors

More than one hundred railroads use over 700 Nichols' Electric Tractors.

Transfer Tables

Eighty-five railroads and car builders use nearly 200 Nichols' Electric Transfer Tables.

There's a Reason
2137 Fulton St., Chicago

ENAMELED IRON SIGNS

The ideal signs for
Steam and Electric
Railways,
Telegraph,
Telephone and
Express Companies.

Supplied in any sizes and colors, for station names, door signs, route numbers, etc.

Guaranteed not to fade or be affected by the weather in any way.

Acton Burrows

Enameled Iron Signs

70 Bond St. - Toronto

The Jackson Electric Tie Tamper

Manufactured at Windsor, Ont.

Is now available to Canadian Steam and Traction lines at the same price prevailing in the States.

Write for particulars relative to this tool now used by the largest Railways in the United States.

Electric Tamper & Equipment Co.

Ludington, Mich., U.S.A.

GRIFFIN & GRIFFIN

P.O. Box 97, Windsor, Ont.

Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

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WIRELESS TELEGRAPH CO.
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Trans-Atlantic and
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Contractors for the
Supply, Erection and
Operation of Wireless
Apparatus for Marine,
Direction - Finding,
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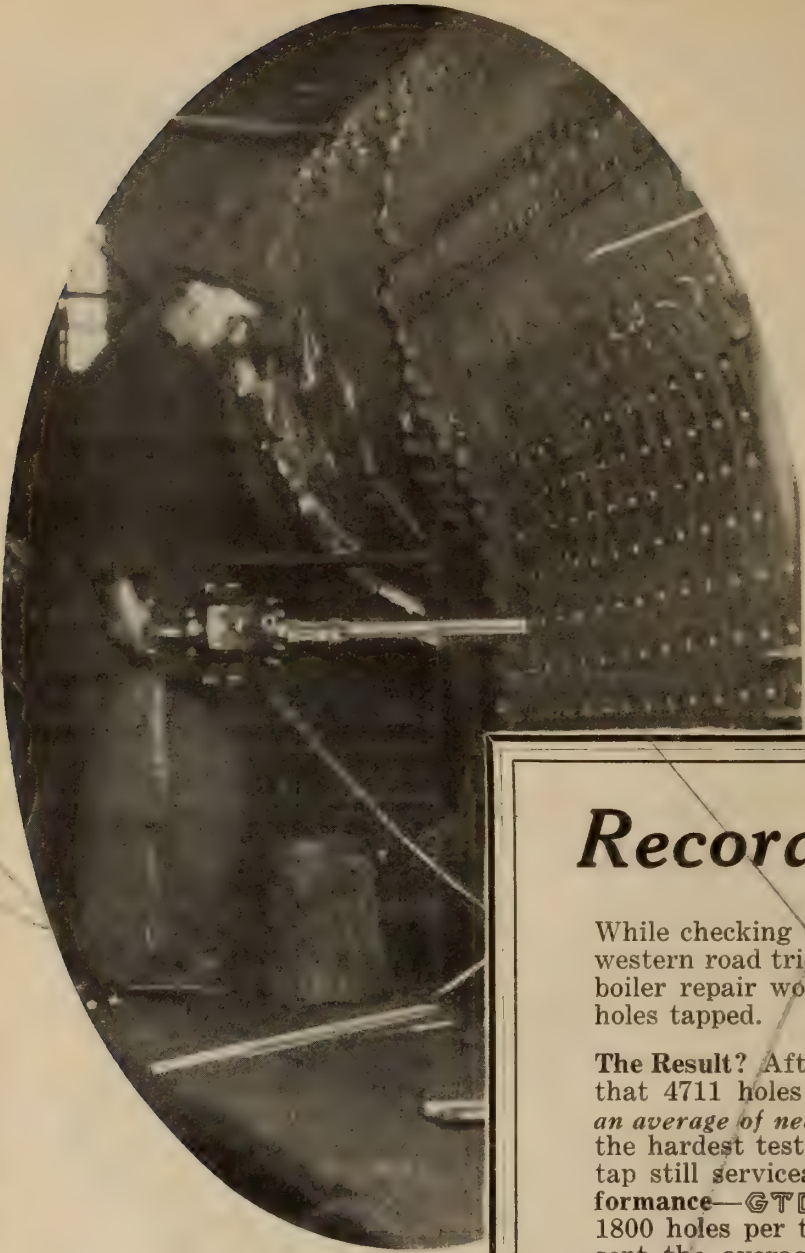
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ity Broadcast Receiv-
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Head Office and Factory:
MONTREAL

Don. M. Campbell
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**Overhead Material
Cedar Poles
Fields and Coils
Sweeper Supplies**

IT PAYS to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better RESULTS.



ON OLD WORK OR NEW GTD MAXITAPS

Record Performance

While checking up staybolt tap performance, one mid-western road tried out four GTD Maxitaps on regular boiler repair work, keeping records of the number of holes tapped.

The Result? After working on five engines, it was found that 4711 holes had been tapped by the four taps—an average of nearly 1200 holes per tap on repair work, the hardest test a staybolt tap has to meet; with one tap still serviceable. Even this is not a **Record Performance**—GTD “Maxitaps” have gone as high as 1800 holes per tap in other shops—but it does represent the average service your boilermakers will get from Maxitaps on repair work.

The Reason? Fifty years' experience in manufacture of taps and dies insures correct heat treatment. For example: “Maxitaps” required for repair work are differently heat treated from those required for work on new boilers. This type of service explains why Maxitaps are found in shops where dollars are carefully counted. This “personality” built in when the tap is made guarantees every “Maxitap” long life under all conditions.



Exclusive Maxitap Features

Pilot Point
Sharp Hook
Special Relief
Chip Breaker
Extra Long Taper Section

**Record Performance Is Usual Performance
With GTD Maxitaps.**

Prove this to yourself in your own shops. Write today
for Bulletin 129M.

G GREENFIELD TAP AND DIE CORPORATION D
OF CANADA, LIMITED GALT, ONTARIO



Do You Make Anything That Canadian Steamships Should Buy?

Investigate the thousands of things that operating steamship companies buy, and remember that these purchases are continuous rather than intermittent.

Even a freighter must be provisioned like an hotel; and, like an hotel, it needs equipment and current supplies for kitchen, dining room, sleeping quarters, laundry, machine shop, paint shop, electric and wireless shop, hospital and many other activities.

All Canadian transportation

activities require a vast aggregate of current supplies.

Every manufacturer in Canada, in the United States or in any country, who feels that he has anything that Canadian ship or railway operators should buy, will find he's telling his story to welcoming eyes through the advertising pages of Canadian Railway and Marine World, the recognized buying guide for both railway and marine interests of the Dominion of Canada.

CANADIAN RAILWAY AND MARINE WORLD

Toronto

Member of

Canada

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Canadian National Newspapers and Periodicals Association,
Canadian Press Association.*



This Paper is a "Member of the A.B.P."

To you, this is a fact of especial significance, for it means that this publication is part of a concerted movement to raise the level of publishing practice, to assure better service to both subscribers and advertisers.

The "A.B.P." is built upon and revolves around the following set of standards—

STANDARDS of PRACTICE

THE publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself—

1. To consider, first, the interests of the subscriber.
2. To subscribe to and work for truth and honesty in all departments.
3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive.
4. To refuse to publish "puffs," free reading notices or paid "write-ups"; to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?"
5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity.
6. To solicit subscriptions and advertising solely upon the merits of the publication.
7. To supply advertisers with full information regarding character and extent of circulation statements, subject to proper and authentic verification.
8. To co-operate with all organizations and individuals engaged in creative advertising work.
9. To avoid unfair competition.
10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

Publications which have subscribed to these standards have earned the preferred consideration accorded them.

**THE ASSOCIATED
BUSINESS PAPERS, INC.**
220 West 42nd St., New York



Lamp Failures Cause Wrecks!

Signal and long-time-burning oils must be clean and fresh—or signals will fail. To be absolutely sure of continuous service, store your oils in Bowser tanks. Thus, lamp failures—so dangerous in railroad operation—will be averted.

At signal towers, in storehouses, and along the right of way wherever oils are stored, Bowser equipment has for 36 years been recognized and accepted as the best.

Booklet C-14 is of special interest to signal supervisors and storekeepers—write for it today. It tells how the oil is pumped directly into the lamps by Bowser accurate measuring pumps from Bowser all-metal, oil-tight tanks. Waste or spillage are averted and the fire hazard is reduced to a minimum.

Bowser Equipment is MADE IN CANADA by

S. F. BOWSER & CO., LTD.
Toronto - Canada

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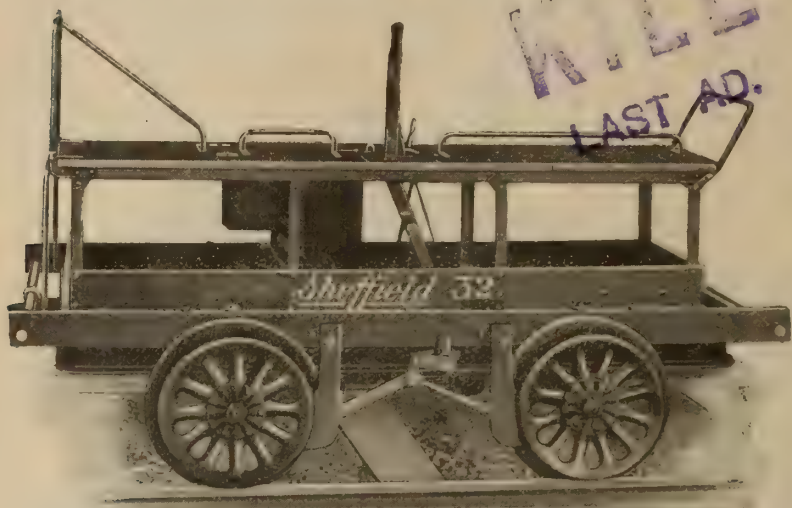
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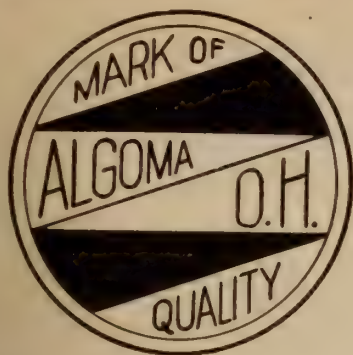
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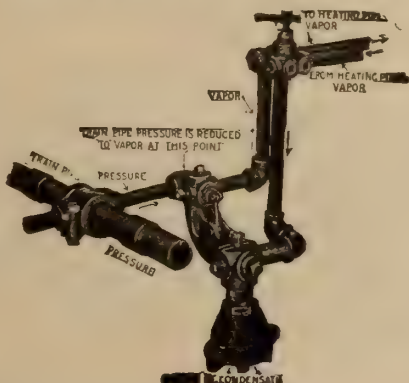


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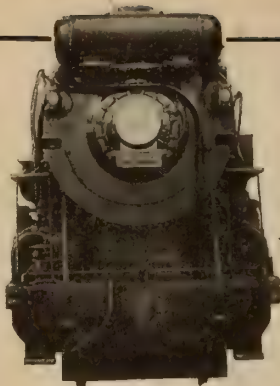
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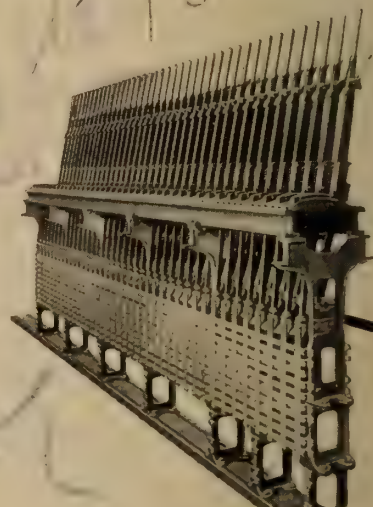
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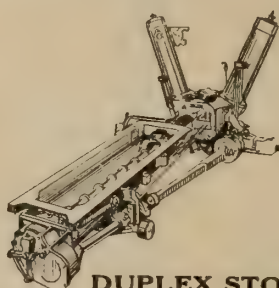
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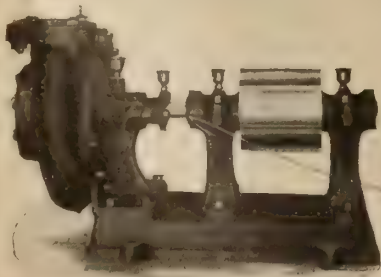
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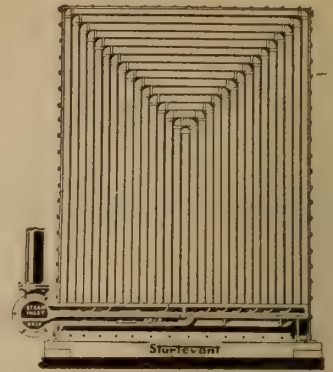
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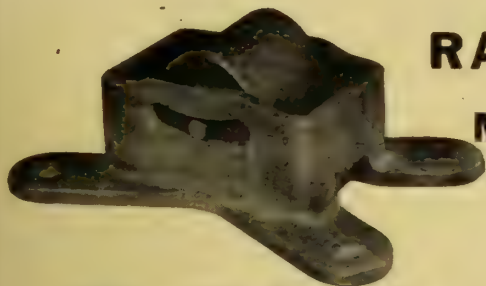
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Hunt-Spiller Gun Iron

FOR THE PRINCIPAL PARTS OF A LOCOMOTIVE

- | | |
|---------------------------|-----------------------------|
| 1 Cylinder Bushing | 6 Valve Bull Rings |
| 2 Cylinder Packing | 7 Crosshead Shoes |
| 3 Piston—Piston Bull Ring | 8 Knuckle Pin Bushings |
| 4 Valve Bushings | 9 Pedestal Shoes and Wedges |
| 5 Valve Packing | 10 Driving Boxes |

Cylinder and Valve Bushings

Longest wearing surfaces are obtained by using

HUNT-SPILLER GUN IRON

Made only by

Hunt-Spiller Manufacturing Corporation

W. B. LEACH, Pres. & Gen. Mgr.

Office and Works:

J. G. PLATT, Vice-Pres. & Sales Mgr.

383 Dorchester Ave., SOUTH BOSTON, 27 Mass.

Canadian Representative: Canuck Supply Co., Ltd., 371 Aqueduct St., Montreal, P. Q.

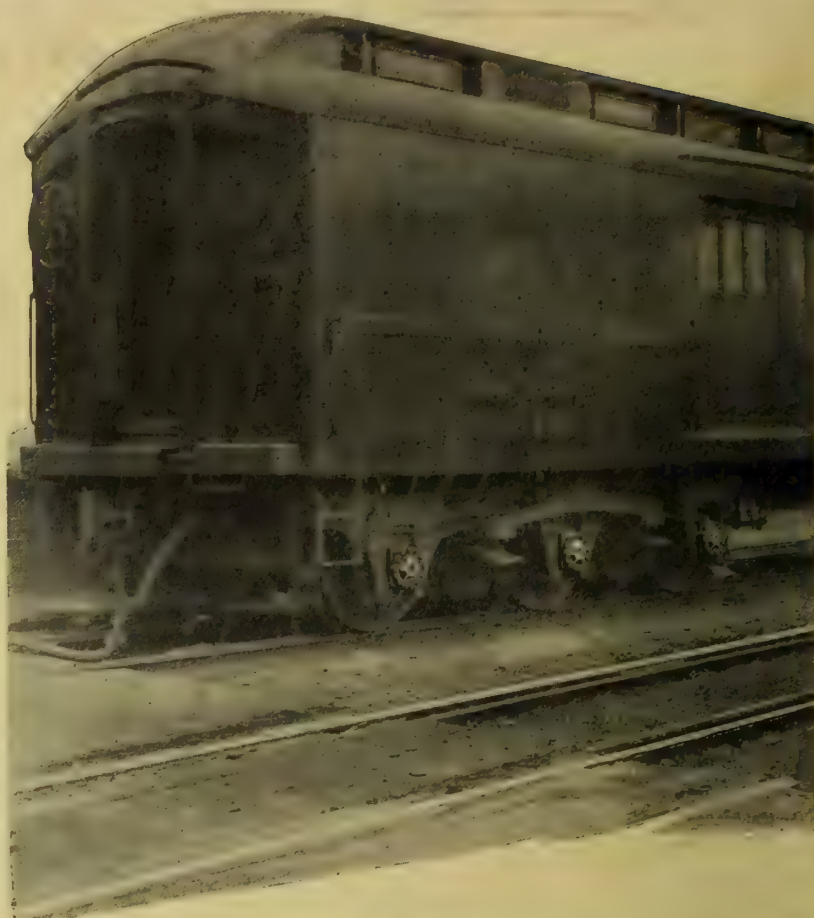
PROGRESS

From the time the first winding path was hewn through a virgin forest, until the present day, the progress of transportation and traffic has marked the progress of civilization itself.

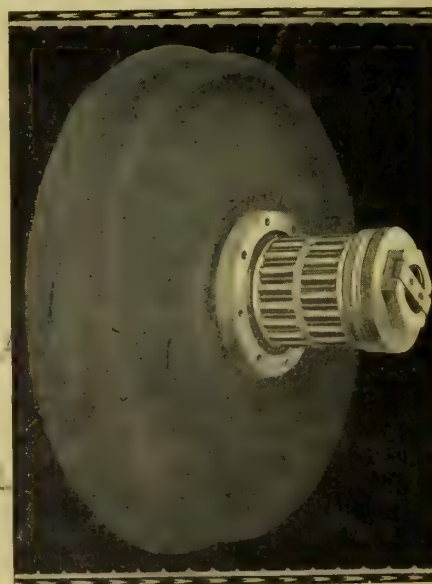
The most notable recent step in this progress is the **STAFFORD ROLLER BEARING FOR CAR JOURNALS**.

Made of solid steel rollers, and so mechanically perfected that it stands up under the severest service tests—the Stafford Roller Bearing reduces journal resistance 90% and eliminates all possibility of hot boxes—marking a tremendous stride forward.

The Stafford Roller Bearing eliminates all purchases of journal box materials—a revolutionary saving. No frozen journals—guaranteed indefinitely against producing any wear on journals.



Car in passenger train equipped with Stafford Roller Bearings, running regularly between Chicago and Detroit.



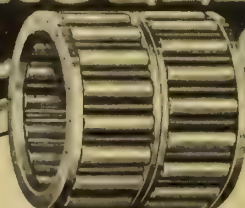
**STAFFORD ROLLER BEARING
CAR TRUCK CORPORATION**

LAWTON

MICHIGAN

"IT ROLLS THE

FRICITION AWAY"



Canadian Railway AND Marine World

Founded in 1898 by Acton Burrows.

Number 303.

Index to contents pg. 215.

TORONTO, CANADA, MAY, 1923

See page 215 for
Subscription Rates



HALIFAX SHIPYARDS, LIMITED, HALIFAX, N.S.

**Complete facilities for the building and repairing of ships
Dry dock 567 feet x 102 feet, with depth of 27 feet**

BRITISH EMPIRE STEEL

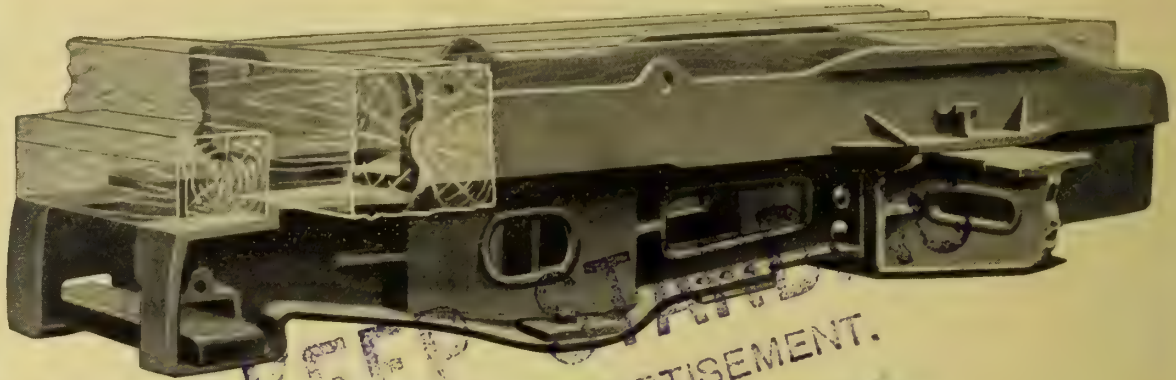
CANADA CEMENT BUILDING

CORPORATION LIMITED

MONTREAL, CANADA

AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS



Economy Cast Steel Draft Arms



INTERNATIONAL EQUIPMENT CO. LTD.
MONTREAL, QUEBEC, CANADA.



KENNEDY ANCHORS

Kennedy anchors are reliable. They are uniform in quality, sound and clean.

Be prepared for emergencies. Get an anchor you can depend upon—a Kennedy anchor. You can secure any desired weight.

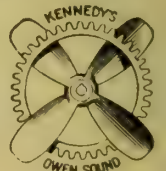
The Wm. Kennedy & Sons, Limited
OWEN SOUND ONTARIO.

DISTRICT REPRESENTATIVES:

M. B. Saunders
8 Silver Street, Cobalt
Phone: Cobalt 153

H. C. Kennedy
232 St. James Street, Montreal
Phone: Main 394

MARITIME REPRESENTATIVE:
C. A. Fowler
Tramway Building, Halifax, N.S.



Service shows the most successful car roof to be the

All Steel Dry Lading Roof

which made possible the following specifications:

No. 1. That should be weather-proof under all conditions, also rust-proof, fire-proof and burglar-proof.

No. 2. That should not require maintenance for at least ten years.

No. 3. That should be of low deadweight and give the car a low center of gravity.

No. 4. That should lessen strain on the superstructure of the car when the car is in motion.

No. 5. That should strengthen, rather than detract, from the strength of the car frame.

No. 6. That should give the greatest interior capacity and the lowest clearance limits.

No. 7. That should be flexible enough to conform to every service condition of the car.

No. 8. That should be possible to use again on the same or another car, even in case of partial or total destruction of the rest of the car by fire or wreck.

No. 9. That should not require roofing boards.

No. 10. That should be of low first cost.

No. 11. That should permit of inspection on the part of any shipper by merely closing the doors of the car and if no rays of light are seen through the roof, the shipper to consider it a weather-tight roof.

No. 12. That should be so constructed that the carlines, purlines and ridge, tie the sides and ends of the car together firmly, so that the weather-proof roof has only the one duty of protecting the contents of the car from the elements.

HUTCHINS CAR ROOFING CO., LTD.
MONTREAL

THE duPONT-SIMPLEX STOKER

**The one Stoker that will handle all kinds of coal
without stack loss**

Manufactured by

Standard Stoker Company, Inc.

Grand Central Terminal, New York


McCormick Bldg.
Chicago, Ills.

duPont Bldg.
Wilmington, Del.

Works
Eric, Pa.

RAILWAY MAINTENANCE ENGINEER

AUGUST, 1920



Twice Around the Globe

In the past, when Railways practically limited their purchases to necessities—we sold sufficient

HIPOWER NUT LOCKS

to encircle the globe twice at the Equator. The reason? Railways realize that Hipowers are necessary for the safe, efficient, and economical maintenance of track.

Play Safe and Specify Hipower.

THE NATIONAL LOCK WASHER CO.

Established 1886
Newark, N. J.
Chicago

New York

Detroit

1920
Twice Around



Dearborn

BULLETINS



Why Dearborn Methods Lead In Water Treatment

A Vital Message to Every Railway Mechanical Department Executive

The Dearborn Chemical Company bases water treatment upon the principle that all the properties in the water supplies that may have detrimental action on the boilers must be destroyed or counteracted: That all waters differ in character: That these properties must be determined accurately by chemical analysis: That the treatment must provide reagents for all the harmful ingredients found: That in the reactions there must be no by-products formed that might in turn injure the boilers.

Straight Line Reasoning—No Guess Work

This plan may seem rather axiomatic, but there is no other house using this method.

Thirty-six years ago the founder of this company developed the idea of scientific analysis and treatment. Up to that time various guess-work expedients had been used. Some failed quickly and others slowly—the main difference was that some were worse than others.

Results Have Told

The Dearborn idea quickly gathered many converts. Boilers opened for inspection

showed clean tubes and sheets. Foaming troubles disappeared. Corrosion stopped.

Over a thousand power plants per year average have come to Dearborn. Railroads the world over are using it. It has been approved and adopted for use as the most economical and efficient treatment obtainable wherever steam is used for power.

Constant Laboratory Control

But Dearborn Treatment does not stop with a single analysis and prescription.

Our methods have progressed far beyond the initial idea. We now maintain constant laboratory control meeting the variations in the water supplies with suitable adjustments in the treatment. Dearborn service men travel the roads constantly, checking results.

To Gain These Advantages

Dearborn Methods do not call for special equipment or installations.—We require gallon samples of the water supplies for analysis from the districts where treatment is to be used. There is no charge for the analytical work and recommendations.

There is no substitute for Dearborn Treatment.

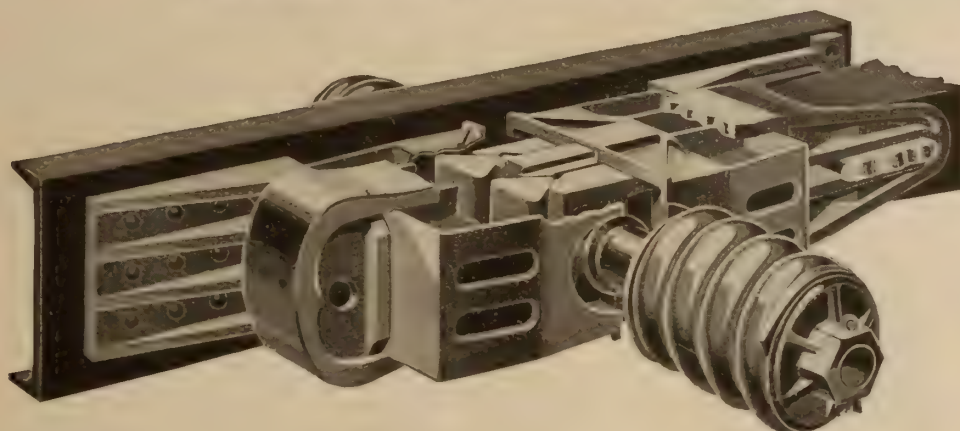
Dearborn Chemical Company

Limited

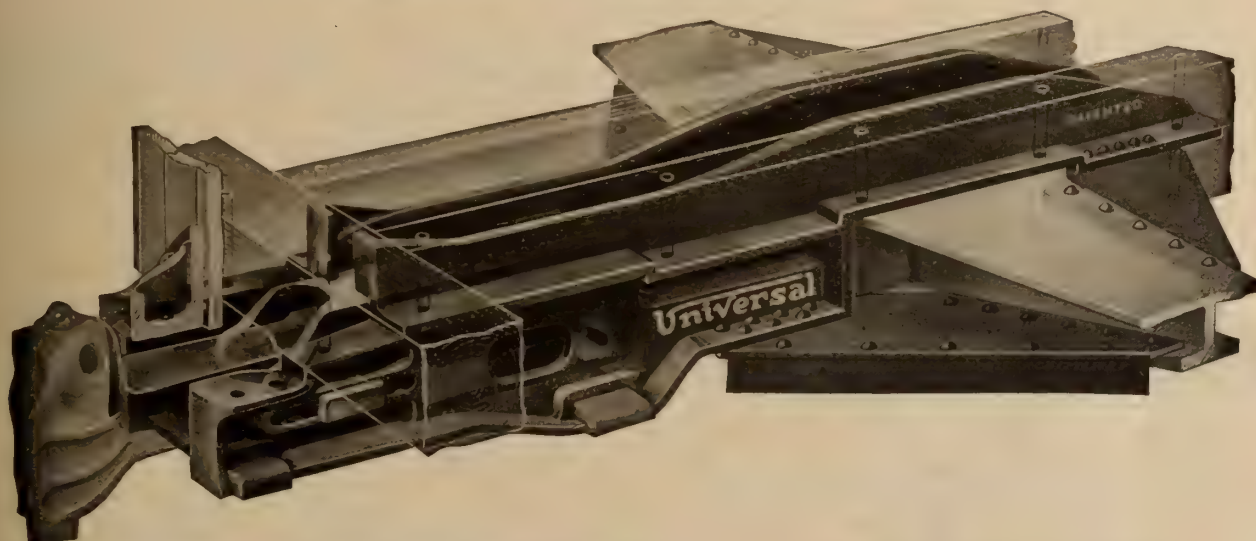
2454-2464 Dundas St. W.

TORONTO, CANADA

CARDWELL FRICTION DRAFT GEAR MADE IN CANADA



Universal ATTACHMENTS MADE IN CANADA



REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING

CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

MADE IN CANADA

WEBB. G. KRAUSER

Transportation Building, MONTREAL

Reliable Insulators For Your Transmission Needs



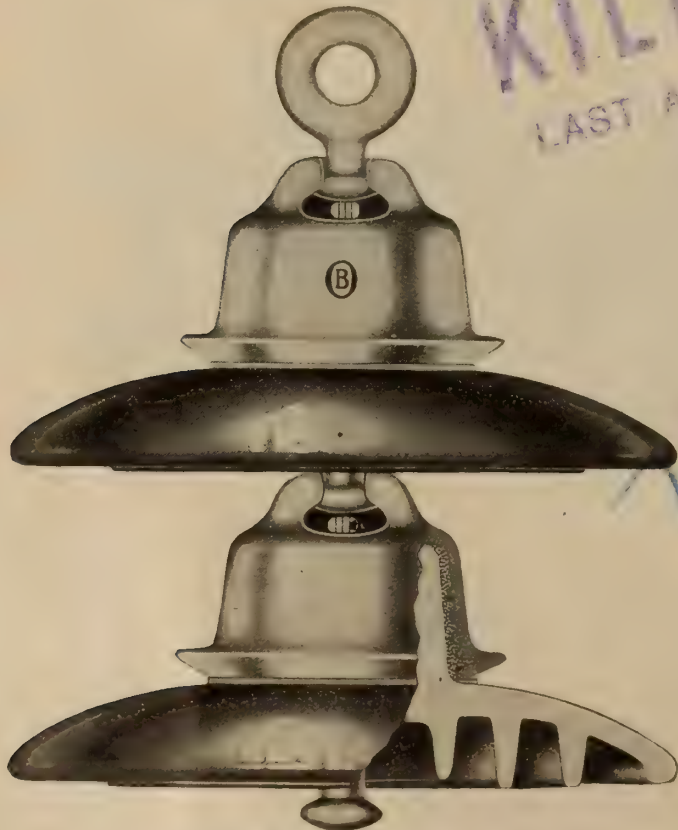
Widely used Pin-type Insulator shown in part section. This insulator is $10\frac{1}{2}$ " in diameter, weighs about eleven pounds and has a general voltage rating of 45,000.

FOR every transmission need of Railway, Industry or Power Company there is an O-B Insulator that will give a maximum of service at a minimum of cost.

The outstanding characteristics of O-B Insulators are, first, well-balanced designs, in which all essential qualities are given proper consideration, and second, exceptionally high quality and uniformity in the product, made possible by highly refined manufacturing methods.

In both design and manufacture, special attention is given to securing those qualities which will prolong the useful life of the insulator in actual service.

Our new Canadian factory has thoroughly up-to-date equipment, uses the most advanced processes, and is turning out insulators that will uphold the reputation that O-B Insulators have enjoyed for years.



Two suspension units connected, shown with suspension eye for attaching to cross-arm. Lower unit shown in part section.

In addition to high-tension insulators, we are handling a complete line of O-B products, including Trolley Material and Rail Bonds for Electric Railways and Mines, Electric Railway Car Equipment, and Steam Road Electrification Materials.

Dominion Insulator & Mfg. Co., Limited

(Manufacturing Ohio Brass Company Products)

Niagara Falls

Ontario

KILL
LAST AD.

Eliminating 2414 Pounds on a Pacific Type Locomotive

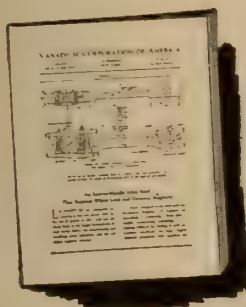
BY the use of reciprocating and rotating parts of Carbon-Vanadium, an unquenched alloy steel, it is possible to save a total of 2,414 pounds in the weight of a 4-6-2 type locomotive in service on one large road:

Reduction in rotating and reciprocating weights	1014 lbs.
" " counterweight	650 "
" " weight of axles	750 "
Total reduction per engine	2414 "

If built with ordinary carbon steel parts, the dynamic augment of this locomotive at 73 M. P. H. would be 13,850 lbs. Carbon-Vanadium reciprocating parts reduce this to 9,300 lbs. At 50 M. P. H., with ordinary steel parts, the dynamic augment would be 6,500 lbs. With Carbon-Vanadium parts, the dynamic augment at this speed is reduced to 4,370 lbs. In other words, by the use of Carbon-Vanadium parts, the dynamic augment of this locomotive can be reduced 33%.

Carbon-Vanadium Steel presents no difficulties to the railroad. It can be handled with average shop facilities, for it requires no quenching or tempering. It has a higher elastic limit and tensile strength than heat-treated carbon steel, and it makes a lighter, stronger locomotive forging.

Write for information about Carbon-Vanadium Steel, what it is doing on other roads, and how easily it can be obtained from a number of careful steel makers.



Write for Bulletin
LF-1 containing de-
tailed information
about Carbon-Vana-
dium, the tough but
simple alloy steel.

VANADIUM CORPORATION OF AMERICA

NEW YORK
120 Broadway

DETROIT
Book Bldg.



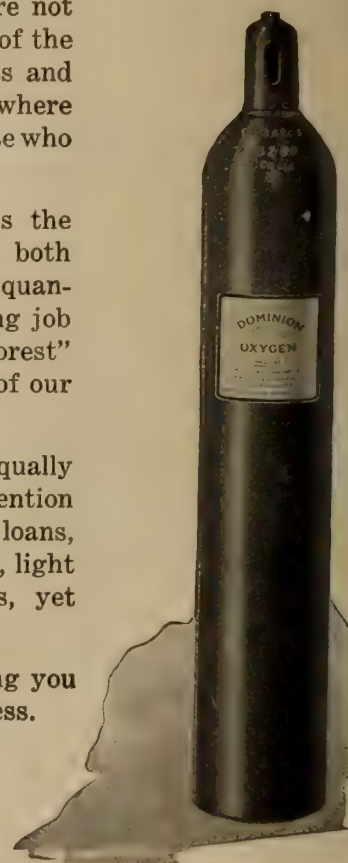
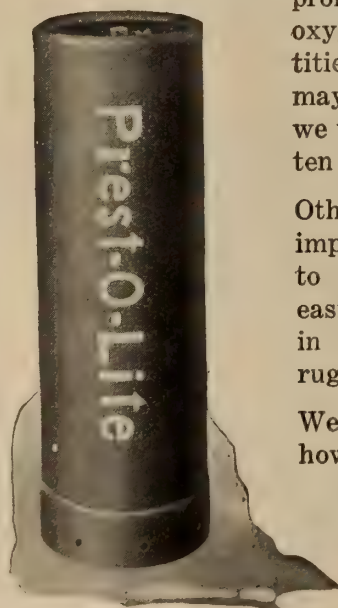
We Are Your Neighbours

Unlike the man who made the better mouse trap and built his house deep in the forest where the world had to find a path to his door, we are not only making oxygen and dissolved acetylene of the highest quality, but have located our plants and warehouses in the busy commercial centers where our products are most easily available to those who need them.

An important part of Dominion Service is the promptness with which you can secure both oxygen and dissolved acetylene in unlimited quantities. Even though your plant or contracting job may be as inaccessible as the "house in the forest" we will find the shortest way to it from one of our ten plants and distributing warehouses.

Other features of Dominion Service are equally important to you—lowest prices, careful attention to shipping instructions, liberal cylinder loans, easily-handled cylinders of the newest types, light in weight to save transportation charges, yet ruggedly constructed.

We shall appreciate an opportunity of telling you how Dominion Service will help your business.

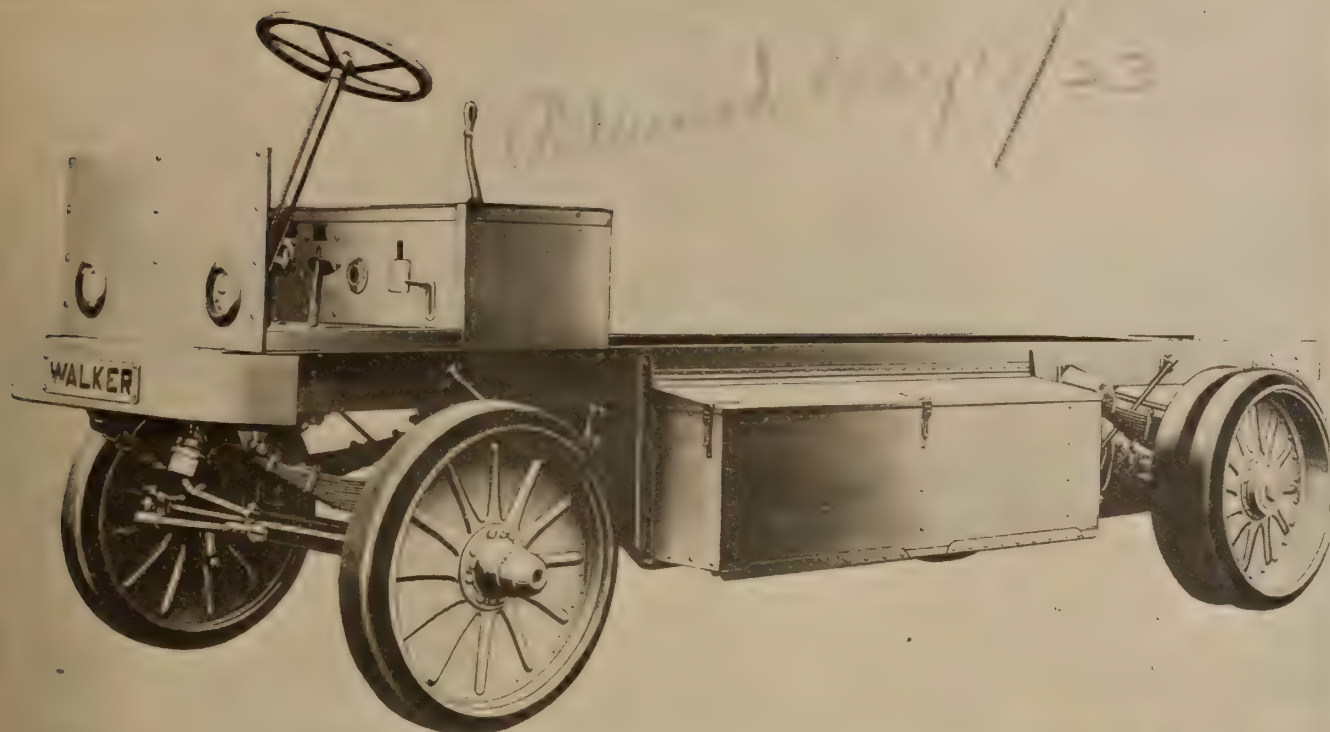


DOMINION OXYGEN COMPANY, LIMITED

*Operating the Welding and Cutting Gas Division of
PREST-O-LITE COMPANY OF CANADA, LIMITED*

General Offices: 80 Adelaide St. East, TORONTO.

DISTRIBUTION POINTS: Hamilton, Merritton, Montreal, Oshawa, Quebec, Shawinigan Falls, Toronto, Welland, Windsor, Winnipeg.



WALKER ELECTRIC TRUCKS

KILL

LAST AD.

The trucks that give
"Lowest Trucking Cost"

Canadian Distributors

G. D. PETERS & CO., LTD.

New Birks Building

MONTREAL

**Canada's
Commerce
Carriers**

Canadian Government Merchant Marine, Limited



REGULAR FREIGHT SERVICES

From Montreal and Quebec in Summer
From St. John, N.B., and Halifax, N.S.,
in Winter.

To Liverpool, London, Cardiff and Swansea,
fortnightly.

To Glasgow, monthly.

To Barbadoes, Trinidad and Demerara, fort-
nightly.

To Australia and New Zealand, monthly.

To Charlottetown, P.E.I., and St. John's, Nfld.,
every sixteen days.

From Vancouver, B.C.

To Australia and New Zealand, monthly.

To China and Japan, monthly.

To India and Straits Settlements.

Pacific Coastal Service.
(Sailings every ten days)

From Vancouver and Vancouver Island ports,
To Seattle, San Francisco and Wilmington.

REGULAR FREIGHT, PASSENGER AND MAIL SERVICE

Every three weeks from Montreal in Summer and Halifax, N.S., in Winter,
To Hamilton, Bermuda, Nassau, Kingston and Belize.

Superior Passenger Accommodation.

Excellent Cuisine.

B. C. KEELEY, Pacific Coast Manager, Vancouver, B.C.

F. G. WOOD, General Ontario Freight Agent, Toronto, Ont.

R. B. TEAKLE, General Manager.

W. A. CUNNINGHAM, Traffic Manager.

230 St. James Street, Montreal, P.Q.



Canadian National Railways

Arc suppressor plates are considered a necessary part of new controllers. Put them in your old equipment



These plates add life to the controller

C-G-E Arc Suppressor Plates are an auxiliary to the controller arc deflector. They are installed opposite the fingers where there is the most arcing, to shorten the time for disrupting the arc. This is accomplished by narrowing the arc passages, which increases the resistance of the arc and the cooling effect of the plates. The result is less burning of the controller fingers, segments, and arcing plates.

Modern controllers are now equipped with arc suppressor plates. They give better, longer service and require fewer repairs and less frequent inspection.

These plates are inexpensive and can be used to advantage on any C-G-E controller having individual-finger blowouts, such as the K-34, K-35, K-36 and K-64. It takes only a few minutes to install them.

Try them and see the difference.

"Made in Canada" by

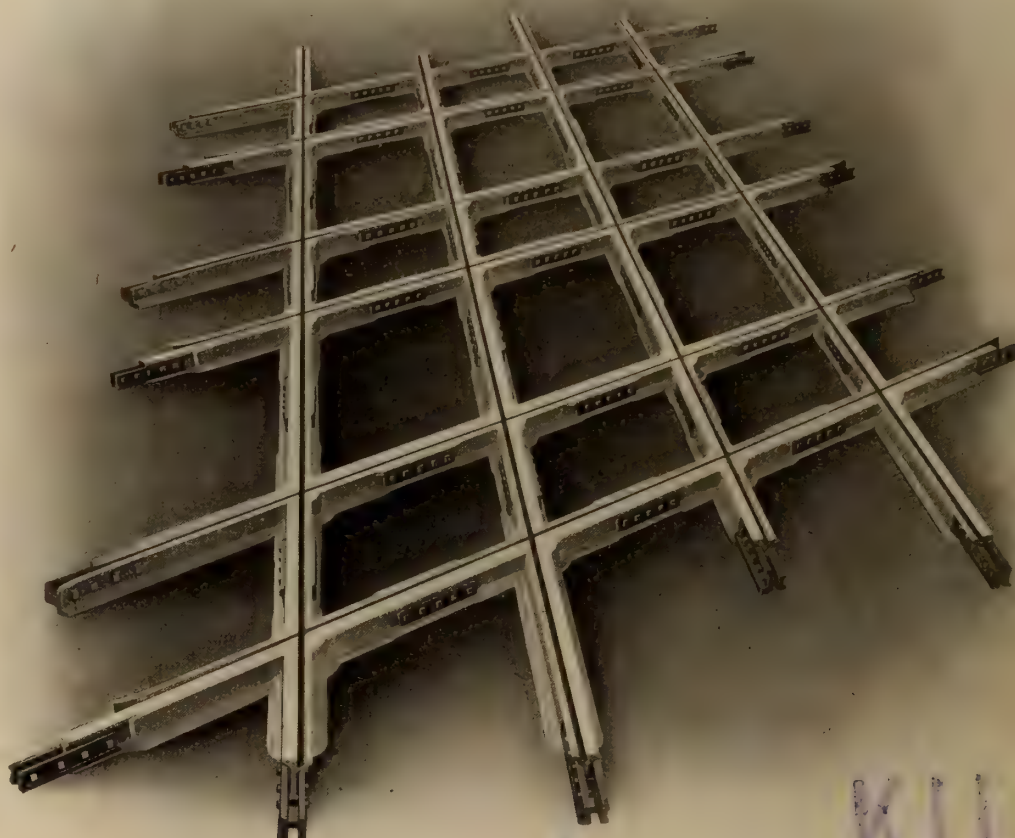
Canadian General Electric Co., Limited

HEAD OFFICE  TORONTO

Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Cobalt, Ottawa, Hamilton, London, Windsor, South Porcupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.

TRACKWORK

FOR STEAM AND ELECTRIC RAILWAYS



Solid Manganese-Steel Intersection of 3 Steam and 2 Electric Railway Tracks

Have You got in touch with us concerning Your spring and summer requirements? If not, it would be well to do so without delay to avoid possible inconvenience later.

Manufacturers of Balkwill Articulated Manganese-Steel Crossings

CANADIAN
STEEL FOUNDRIES
LIMITED

General Offices

307 CRAIG ST. WEST, MONTREAL

Please note
our change
of address

RAILWAY TRACK MATERIAL

LAST AD!
KILL

**Angle Bars
Tie Plates
Spikes
Bolts
Nuts**



HAMILTON MONTREAL

Let the "Meteor" Safety Train Signal Protect Your Trains



"Surest and best rear end train protection ever offered"
(Endorsement of Railway Official)

OFFICIAL TEST

As reported to the Board of Railway Commission for Canada, by Chief Inspector of the Explosive Division, Department of Mines, Dominion of Canada:—

The Detonation was found to be reliable under trials, the conditions of which were more severe than those likely to be encountered in actual service.

The volume of sound is well above the average, sharp and arresting, accompanied by a brighter flash than given by any other torpedo tested, and plainly seen from the cab of the locomotive.

The detonation was not affected after the signals had been subjected to special treatment, for exposure to rain, snow, steam, saturated atmosphere and rough usage. No "dangerous" debris was projected at the trials, and the results were superior to those obtained with any other torpedo tested.

The brass wire swivel spring is of a form which renders the operation of attaching the signal to the rail simple and quick and cannot be knocked off by the wheel of the locomotive.

After tests under service conditions on the Canadian Pacific Railway, from the Atlantic to the Pacific, practical railroaders affirm that no engineman can possibly run over one of these signals and fail to recognize that a signal is intended. This opinion from men who are familiar with the use of track signals fully endorses all that has been said in favor of the "METEOR."

The "METEOR" differs from all other torpedoes. It appeals to three senses—Hearing, Seeing and Smelling—and thereby makes assurance trebly sure. The "METEOR" has been adopted as "Standard" on the Canadian Pacific Railway over the entire 18,000-mile system, also by the Grand Trunk Railway and other Canadian Railways.

CANADIAN EXPLOSIVES LIMITED

Head Office: 120 St. James St., Montreal

First and Last Pages

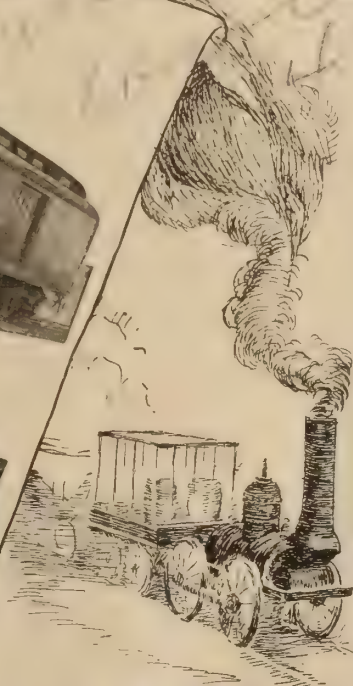
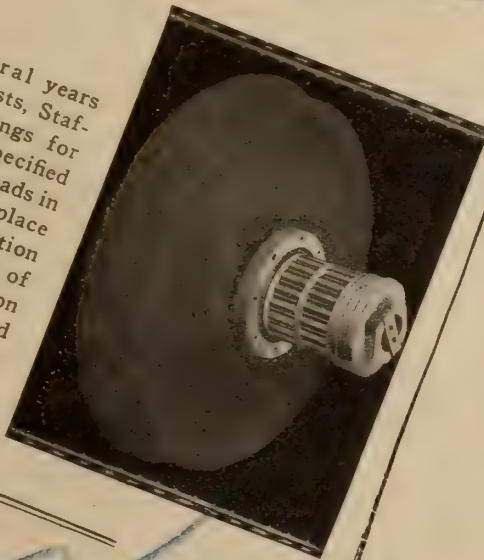
The first page in the history of journal bearings for railroad cars was written when DeWitt Clinton started a new industry.

The last pages in the history of journal *friction bearings* are being written today, following the many service installations of STAFFORD ROLLER BEARINGS for Car Journals.

*The last word in Operating Economy—
Stafford Roller Bearings — guaranteed
three years.*

HISTORY OF RAILROADING

Following several years severe service tests, Stafford Roller Bearings for car trucks were specified extensively by railroads in 1922 and 1923, in place of the antiquated friction bearing. A reduction of 90% in journal friction was shown by the Stafford Bearing in competitive tests.



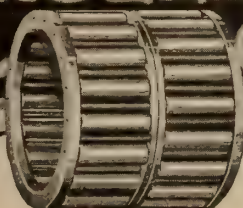
STAFFORD ROLLER BEARING CAR TRUCK CORPORATION

LAWTON

MICHIGAN

"IT ROLLS THE

FRICITION AWAY"





Intensive Cultivation of Specific Fields Is the Secret of Modern Merchandising Successes

The old school of advertising, still fostered by some advertisers, but largely going out of use, was to buy circulation in terms of quantity rather than quality.

The advertising solicitor who could show the greatest number of millions of circulation at the lowest rate per thousand per line was often successful in selling campaigns to the unthinking.

We still see thousands of dollars wasted in advertising technical products to the general public. But present day competition has set men thinking. It has restored the dollar value to the dollar. It is beginning to uncover the good old-fashioned word "thrift" from under the pile of fool's gold that buried it.

Thinking men are once again beginning to take the trouble to segregate their logical audiences and to address their advertising messages to

specific audiences in the trade language of the needs of those audiences.

Take the railway and marine interests of Canada, for instance. They represent the very heart blood of the country. They typify directly and indirectly more than half of all Canada's industrial wealth. Their buying power foots up into hundreds of millions of dollars yearly.

And the responsible executives of both the railway and marine interests —(which also means the Dominion Government)—of Canada are the men who carefully study the advertising pages of every issue of Canadian Railway and Marine World.

These men look to this technical paper as a safe guide in buying.

Can you imagine a specific appeal to a specific audience that gives promise of larger returns than a full page campaign in Canadian Railway and Marine World?

CANADIAN RAILWAY AND MARINE WORLD

Toronto

Member of

Canada

*Audit Bureau of Circulations, Associated Business Papers,
Canadian National Newspapers and Periodicals Association,
Canadian Press Association.*



Galena products used by the world's greatest Steam and Electric Railway lines

Galena Car Oil
Galena Coach Oil
Galena Engine Oil
Galena Perfection Valve Oil
Galena Perfection Superheat Valve Oil
Galena Electric Car Oil
Galena Track Oil
Galena Power House Engine Oil
Galena Power House Valve Oil
Galena Mineral Cylinder Oil
Galena Anti-friction Triple Valve Oil
Galena Air Compressor Oils
Galena Crank Case Oil
Galena Dynamo Oil
Galena Gas Engine Oil
Galena Turbine Oil
Galena Flange Oil
Galena Motor Car Oil
Galena Air Pump Oil
Galena Air Tool Oil
Galena Ball Bearing Oil
Galena Chain Oil
Galena Soluble Drilling Oil
Galena Commutator Oil
Galena Electric Generator Oil
Galena Hydraulic Jack Oil
Galena Red "B" Machinery Oil
Galena Gear Case Oil
Galena Tempering Oil
Galena Rope Oil
Galena Thread Cutting Oil

Galena Brake Rigging Oil
Galena Perfection Signal Oil
Galena Railway Safety Oil
Galena Longtime Burner Oil
Galena Air Brake Compound
Galena Driving Journal Compound
Galena Hot Box Compound
Galena Gear Compound
Galena Perfection Compound
Galena Rod Cup Grease
Galena Hub and Center Plate Grease
Galena Gear Grease
Galena Motor Grease
Galena Pinion Grease
Galena Pneumatic Tool Grease
Galena Roller Bearing Grease
Galena Ball Bearing Grease
Galena Belt Chain Grease
Galena Cable Grease
Galena Graphite Axle Grease
Galena Soft Black Grease
Galena Hard Black Grease
Galena Graphite Plunger Grease
Galena Auto Cup Grease
Galena Lubricating Grease
Galena Dark Pole Grease
Galena Slushing Grease
Galena Sponge Grease
Galena Trolley Grease
Galena Solidified Oil
Galena Solidified Oil and Waste

Each brand of highest quality and tested by years of service. Made in different consistencies to suit degree of climate or type of equipment. Our Service Engineers will recommend the kind best suited to your requirements.

"Galena Quality is an Assurance of Efficiency and Economy!"



Galena-Signal Oil Company

of Canada, Limited

Toronto

Montreal



BUYING *as affected by* SELLING

LIST OF MEMBERS

Each has subscribed to and is maintaining the highest standards of practice in its editorial and advertising service.

Advertising and Selling
American Architect &
Architectural Review
American Blacksmith,
Auto & Tractor Shop
American Exporter
American Funeral
Director
American Hatter
American Machinist
American Paint Journal
American Paint & Oil
Dealer
American Printer
American School Board
Journal
Architectural Record
Automobile Dealer and
Repairer
Automobile Journal
Automotive Industries

Baker's Helper
Bakers Weekly
Boiler Maker (The)
Boot and Shoe Recorder
Brick and Clay Record
Building Age & The
Builders Journal
Buildings and Building
Management
Building Supply News

Canadian Grocer
Canadian Machinery &
Manufacturing News
Canadian Railway and
Marine World
Candy and Ice Cream
Chemical & Metallurgical
Engineering
Clothing and Furnisher
Coal Age
Concrete
Cotton

Daily Metal Trade
Domestic Engineering
Dry Goods Economist
Drygoodsman
Dry Goods Reporter

Electric Railway Journal
Electrical
Merchandising
Electrical Record
Electrical World
Embalmers' Monthly
Engineering and Mining
Journal-Press
Engineering News-
Record

Factory
Farm Implement News
Fire and Water
Engineering
Foundry (The)
Furniture Manufacturer
and Artisan

Garment Weekly (The)
Gas Age-Record
Good Furniture Magazine
Grand Rapids Furniture
Record

LIST OF MEMBERS (continued)

Haberdasher (The)
Hardware Age
Hardware & Metal
Heating and Ventilating
Magazine
Hide and Leather
Hospital Management
Hotel Monthly
Hotel Review

Illustrated Milliner
Implement & Tractor
Trade Journal
Industrial Arts Magazine
Industrial Engineer
Inland Printer
Iron Age
Iron Trade Review

Lumber
Lumber World Review

Manufacturers' Record
Marine Engineering &
Shipping Age
Marine Review
Millinery Trade Review
Mill Supplies
Modern Hospital (The)
Motor Age
Motorcycle and
Bicycle Illustrated
Motor Truck
Motor World

National Builder
National Cleaner & Dyer
National Laundry
Journal
National Miller
National Petroleum
News
Nautical Gazette
Northwest Commercial
Bulletin

Oil News
Oil Trade Journal

Power
Power Boating
Power Plant
Engineering
Printers' Ink
Purchasing Agent

Railway Age
Railway Electrical
Engineer
Railway Engineering &
Maintenance
Railway Mechanical
Engineer
Railway Signal
Engineer
Retail Lumberman
Rock Products
Rubber Age

Sanitary & Heating
Engineering
Shoe and Leather
Reporter
Shoe Retailer
Southern Engineer
Sporting Goods Dealer

Tea and Coffee Trade
Journal
Textile World

Welding Engineer
Western Contractor
Wood-Worker (The)

IT IS to your interest to know that goods are *well sold*, as well as well made. You have to pay the cost of selling just as you have to pay for the cost of manufacturing. Think it over.

And the cost of selling is no small item. In some cases it costs more to sell goods than to make them. The seller who clings to antiquated, expensive methods of selling is no more entitled to your patronage than the one who runs an out-of-date factory, because *you have to pay* the additional cost in either case.

If the waste is to be squeezed out of selling, the buyer cannot escape a share of the responsibility in bringing it about.

THIS means recognizing the efforts of those sellers who have adopted modern, economical methods of selling, and one of these beyond any question is good advertising in good Business Papers.

Advertising not only cuts the cost of selling, but it increases production volume and lowers manufacturing costs. It standardizes quality, and is a guarantee of good faith.

*You are invited to consult us freely about
Business Papers or Business Paper Advertising*

THE ASSOCIATED BUSINESS PAPERS, INC.

JESSE H. NEAL, *Executive Secretary*

HEADQUARTERS:

220 West 42nd STREET

NEW YORK CITY



"DOMINION"
KILL
LAST AD. when marked on a reel

IS YOUR GUARANTEE OF QUALITY OF

WIRE ROPE

Blocks, Clips, Thimbles, Turnbuckles, &c.

THE DOMINION WIRE ROPE CO., LIMITED

Head Office: MONTREAL

Branches: TORONTO, WINNIPEG

The Improved Hart Convertible Car

Unloads Clean Without Extra Hand Labor



Old Level Floor Car. Note Ballast Left by Plow.

For
Ballasting
Center
Dump
or
Side Dump

For Coal
or General
Service

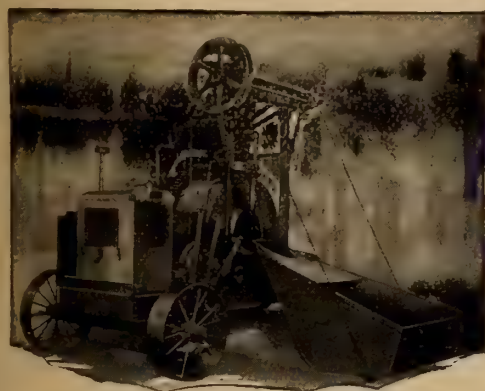


Improved Car Unloaded by Top Plow. Has no Ballast to be Shovelled out by Hand.

The Car With Gravity Discharge Pockets

—DESIGNED, PATENTED AND BUILT IN CANADA—

The HART-OTIS CAR CO., Limited, MONTREAL



"RANSOME"

KILL Concrete Mixers

LAST AD. Fast mixing and discharge

"Marion" Steam Shovels

"Industrial Works" Cranes

Branch :
108 Mail Building
TORONTO

F. H. Hopkins & Co.
Limited

Head Office :
MONTREAL

THE A.B.C.

*—An Aid to Advertisers
Both Local and National*

THE Audit Bureau of Circulations is an Association of publishers, advertisers and advertising agencies who are co-operating to standardize and verify circulation data, and thus place the buying of space on a basis of "Known Value."

The Bureau was established in 1914 and now numbers among its members the majority of the leaders in the publishing and advertising fields of the United States and Canada.

Twice a year the publisher makes a report to the Bureau showing total circulation and details of distribution by states, cities, towns, suburbs and rural districts; also subscription rates and facts about contests, premiums and club offers. Once a year these statements are audited by one of the Bureau's experts. The publisher-members agree to permit examination by the Auditor of all records considered necessary by the Bureau.

By means of the A. B. C. audit reports, which are issued on all member-publications, the advertiser can analyze the circulation of a publication and determine its value to him as an advertising medium.

By patronizing A. B. C. publications, advertisers guard their own interests and also participate in this nation-wide movement to place advertising on a sound, business-like basis.

*The Canadian Railway and Marine
World is a member of the A. B. C.
and would be pleased to submit a
copy of the latest circulation report*

INVEST YOUR ADVERTISING DOLLARS
BY USING A. B. C. PAPERS

Well Cut Teeth Proper Balance Thorough Hardening

These are the requirements of a first-class file in a nut-shell.

Every one of our files must pass a strict test on all these points before it leaves our factory.

That is why file users accept these brands as the standard of file quality.

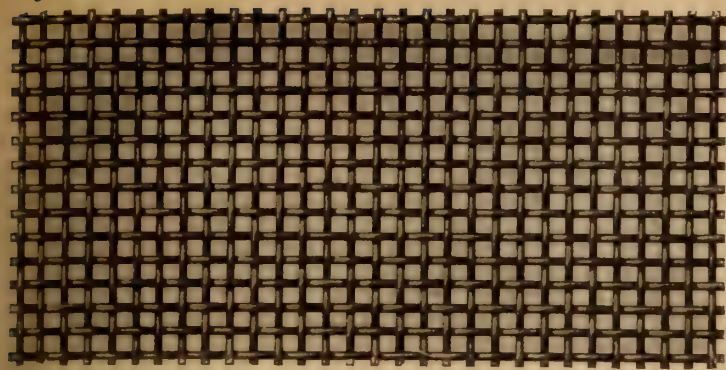
Kearney & Foot
Great Western
American
Arcade
Globe

Standard for
over Fifty Years

Made in Canada by

Nicholson File
Company

PORT HOPE - ONTARIO



Greening's Wire Cloth and Screens

The superiorities that users have come to expect from any article bearing the name Greening results from the highest standards of manufacture plus a long and intimate knowledge of the conditions of service under which their products are used.

For more than sixty years the B. Greening Company have kept accurate records of all statistics that affect the wear, service and cost. These statistics are at the disposal of anyone and frequently save purchasers time and money.

THE **B. GREENING WIRE CO., LIMITED**

HAMILTON, ONTARIO

MONTREAL

WINNIPEG

Use EXACTLY the Right Brush for each Generator and Motor

SPECIALISTS are waiting to help you with your brush problems. With the assistance of Columbia Data Sheet Service you are sure of securing the correct Columbia Pyramid Brushes for each machine. The Brushes selected are guaranteed to be *exactly* right.

Columbia Data Sheet Service brings you nation-wide experience—experience far greater than that of any individual or of several individuals.

Be sure you are using the correct brushes. Avail yourself of Columbia Data Sheet Service. It is free for the asking—whether you have one machine or a thousand.

CANADIAN NATIONAL CARBON CO.
LIMITED

TORONTO - CANADA

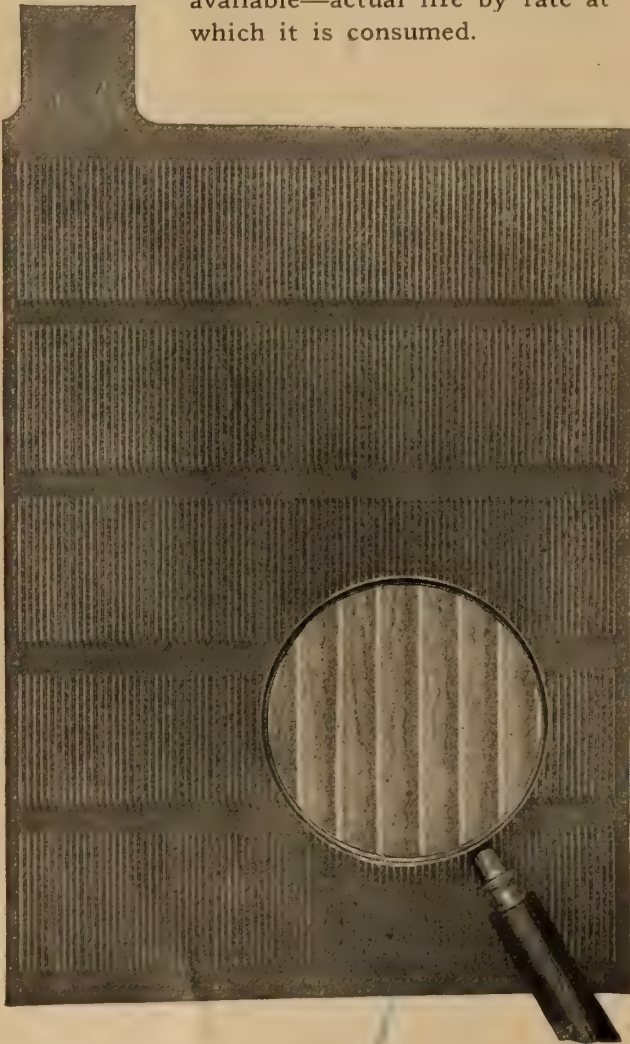


Look for this Mark
on your Brushes

Putnam

STORAGE BATTERY

Reserve lead determines plate life—possible life by quantity available—actual life by rate at which it is consumed.



THE
SAFETY
CAR HEATING AND
LIGHTING
COMPANY



MONTREAL

NEW YORK



Specify "Silver Lake A" Cord on your requisitions

For Signal, Bell and Register Cord use "Silver Lake A" braided cord, which has proven most reliable in many years of service.

The first cost is less than leather—it is more pliable and it is not affected by weather conditions.

Where the highest grade cord is not required, we recommend either "Silver Lake" or "Wearwell" grades.

Immediate delivery can always be made from large stock.

**Railway and Power Engineering
Corporation Ltd.**

133 Eastern Avenue Toronto

Branches: Montreal

Winnipeg

New Glasgow

FLANNERY

Time Is Proving F.B.C. Welded Flexible Staybolts

They have been on the market long enough to convince their first users of their worth.

No road has reverted to the threaded type sleeve because of dissatisfaction with the welded sleeve, once having installed it.

This is your assurance, as well as ours, that this assemblage is living up to our claims of being stronger, more efficient and more economical than any other type on the market.

May we advise with you regarding a trial installation of the F. B. C. Welded Flexible Staybolt assemblage?

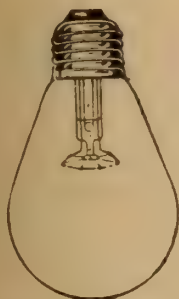


FLANNERY BOLT COMPANY

VANADIUM BUILDING
PITTSBURGH PA.

*Manufactured and sold in Canada
by the Canadian Allis-Chalmers,
Limited, Toronto.*

FLEXIBLE STAYBOLTS

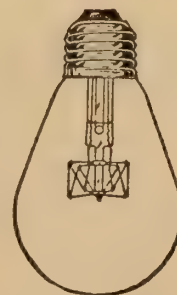


110-115-120 Volts

WESTINGHOUSE

New Construction Mill Type Lamp

*A Mazda B Lamp in
a Tipless P-19 Bulb*



220-230-240-250 Volts

The advantage of this new style lamp over the former Mill Type Lamp is its shorter stem and ring-type coiled filament. It is thus capable of withstanding greater shock, vibration, and rougher usage.

This lamp is especially adapted for use in trains, ships, and wherever there is unusual vibration.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Bank of Hamilton Bldg.
HALIFAX, 105 Hollis St.
CALGARY, Canada Life Bldg.

MONTREAL, 285 Beaver Hall Hill
FT. WILLIAM, Cuthbertson Block
VANCOUVER, Bk. of Nova Scotia Bldg.

OTTAWA, Ahearn & Soper, Ltd.
WINNIPEG, 158 Portage Ave. E.
EDMONTON, 211 McLeod Bldg.

Repair Shops:

MONTREAL—113 Dagenais St.
WINNIPEG—158 Portage Ave. E.

VANCOUVER—1090 Mainland St.

TORONTO—366 Adelaide W.
CALGARY—316 Third Ave. E.



They won't have to open up this place again



It's a
**THERMIT
RAIL WELD**

Every Thermit Rail Weld installed means that another joint is eliminated—another source of trouble is done away with.

It's not a different kind of joint. It is a practical means of making continuous rail out of separate pieces. No joint plates, no bolts, no copper rail bonds.

Even under the heaviest traffic Thermit Rail Welds last as long as the rail itself.

The first cost of Thermit Rail Welds now averages no higher than that of any good type of joint. And "The first cost is the last cost."

METAL & THERMIT CORPORATION
15 Emily Street, Toronto

General Offices
120 Broadway
New - York

Buffalo Brake Beam Company

BUFFALO BEAMS ARE BEST BEAMS

Offices:

NEW YORK
32 Nassau Street

ST. LOUIS
Syndicate Trust
Bldg.

MONTREAL
10 St. Antoine St.



Works:
BUFFALO,
N. Y.

Canadian Works: **HAMILTON, ONT.**

Brake Beams for all Classes of Cars, Locomotives and Electric Equipment



4-6-2 TYPE LOCOMOTIVE

Built for the Canadian National Railways

We are specialists in building locomotives.

We build all types and sizes, also all kinds of spare and repair parts for locomotives and tenders.

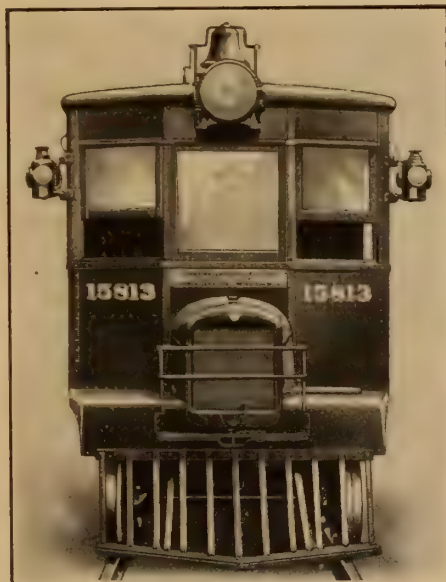
Our experience puts us in a position to give you expert advice as to what particular type and size of locomotive is best suited to your needs.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

**LEDOUX
JENNINGS,
LIMITED**

Montreal



*Builders
of*
**AUTOMOTIVE
EQUIPMENT**
KILL

LAST AD.

Front View of

A "Canadian Gasoline Rail Car"

4' Plain Radial Drill



far surpasses the ordinary machine for cost-cutting and profit-producing ability.

Notice its superior features:

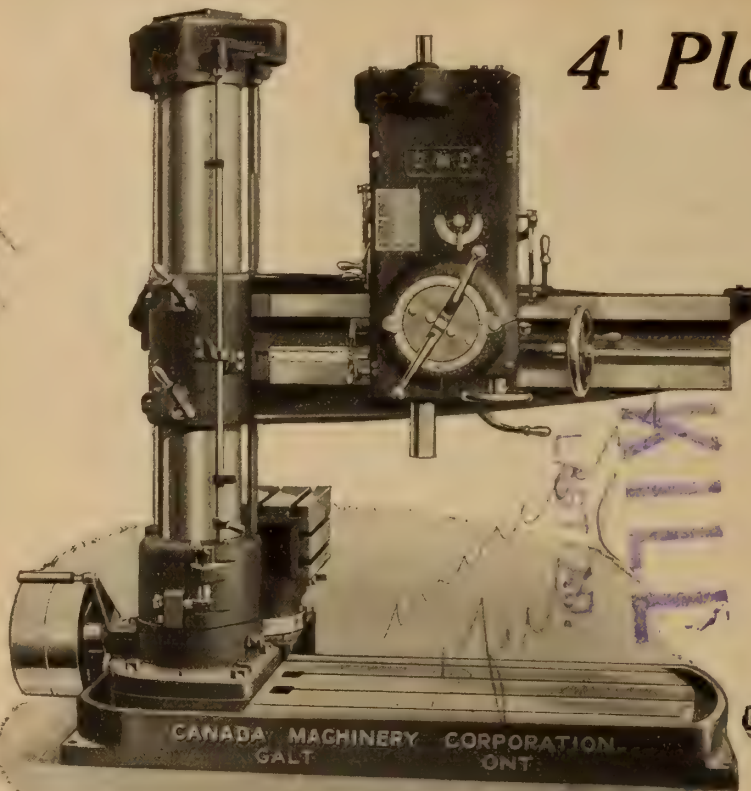
Ample power at all speeds.

Large range of speeds and feeds,

Centralized control,

Gravity lubrication system.

Save time and boost production by installing an up-to-date tool.



CANADA MACHINERY CORPORATION
LIMITED

Galt - Ontario

Iron and Woodworking Machinery

Toronto Sales Office, 721 Bank of Hamilton Bldg.

Canada's All-Water Route



Ship Your Freight by Water —Save Time and Money

We operate the following Freight Services:

From Montreal, Toronto and Hamilton, connecting with C.P.R. at Fort William and C.N.R. at Port Arthur for all points in Western Canada—2 sailings weekly.

From Toronto and Hamilton to Montreal—2 sailings weekly.

From Montreal to Toronto and Hamilton—3 sailings weekly.

Between Montreal and St. John's, Nfld.—3 sailings monthly.

Between Montreal, Sorel, Three Rivers and Quebec—sailings daily.

Between Quebec and Saguenay River Ports—2 sailings weekly.

Between Hamilton and Toronto—2 sailings daily.

Intercontinental Transport Services Limited

Trans-Atlantic Steamers operating between Montreal, London, Havre, Rotterdam and Hamburg.

Canada Steamship Lines Limited

Head Office: Victoria Square, MONTREAL

Toronto Office, 32 Front Street West

Telephone: Adelaide 4200

Toronto Ticket Office: 46 Yonge Street

PAGE-HERSEY TUBULAR POLES

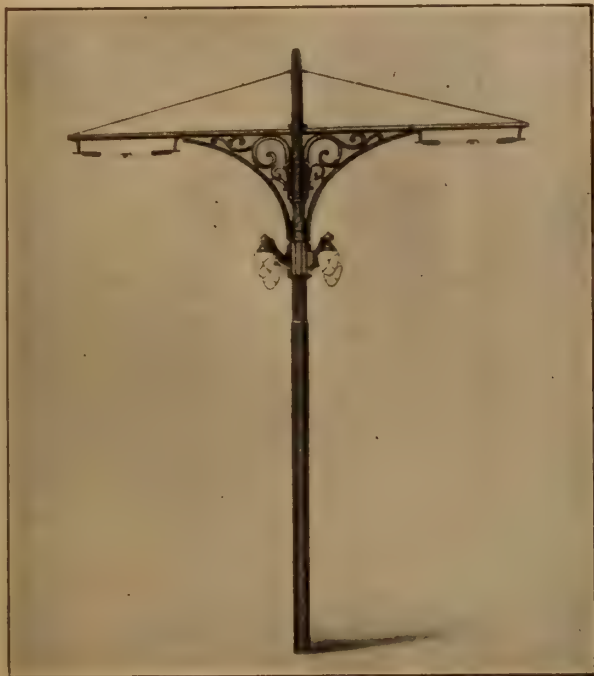
MADE IN CANADA

FROM P&H PIPE

All sizes and weights
for the various purposes required and
to suit all styles of fittings.

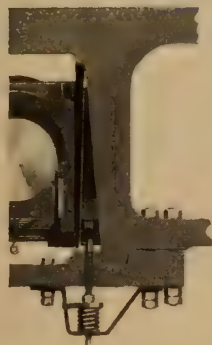
NEAT — UNIFORM — ORNAMENTAL
DURABLE — STIFF — STRONG
ENDS CHAMFERED TO SHED
WATER

Ideal for
ELECTRIC LIGHT—POWER
TELEPHONE—TELEGRAPH
AND STREET RAILWAY LINES
AND FLAG POLES



PAGE-HERSEY TUBES, LIMITED Head Office: 100 Church Street - Toronto, Canada

KILL
LAST AD.



Franklin Wedges keep
perfect adjustment

Less Wedge Adjustment

"Franklin Automatic Adjustable Wedges will run for an average of three months between adjustments; whereas the standard wedges have to be set up on an average of once a week."

"In addition our records show that Franklin Wedges increase by three

times, the life of a set of rod bushings."

—Supt. of Motive Power

Apply Franklin Wedges to your own power and benefit from the lowered maintenance costs.

Franklin Wedges cost very little more per box than the ordinary wedge.

Franklin Railway Supply Company
of Canada, Limited

Transportation Bldg., Montreal

The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO and KINGSTON—ONTARIO—CANADA

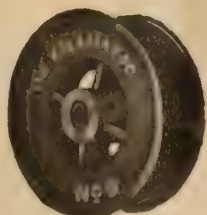
Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



S.S. CANADIAN WARRIOR

Two Dry Docks
and
Shops
EQUIPPED TO
OPERATE
Day or Night
on
Repairs



The Star Brass Works

Largest Exclusive Trolley Wheel Makers in the World.

Kalamazoo

Michigan



Canadian Representatives:

Northern Electric Company, Limited

Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal
352 Donald St., Winnipeg**

For Railroad, Hotel and Steamship Upholstery CHOOSE "CHASE" MATERIALS



The trade mark "Chase" stands for seventy-five years' leadership in manufacturing.

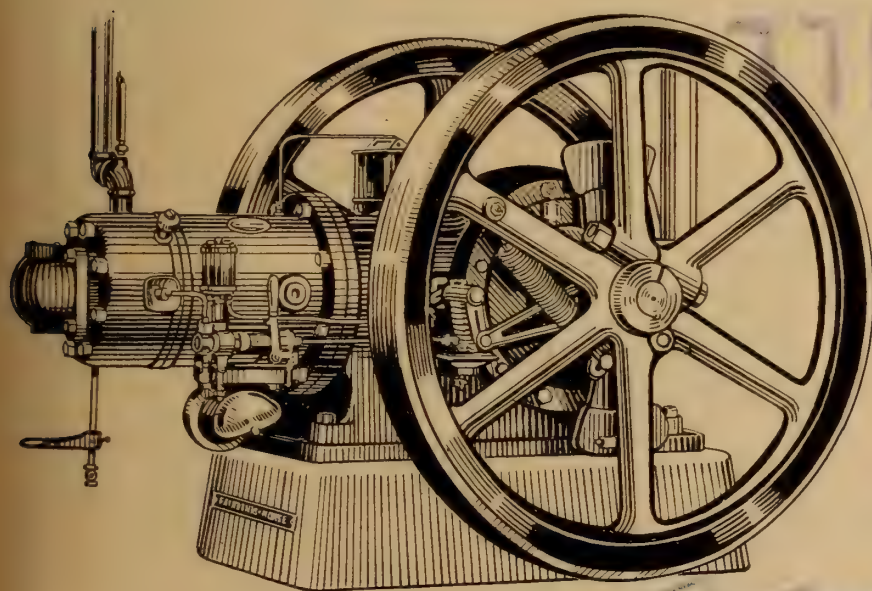
CHASE GOAT BRAND CAR PLUSH: This product, made from the fleece of the Angora Goat, has been the choice of railroads and steamship lines for over thirty years. It is **DURABLE—FAST IN COLOR—RICH APPEARING—MOST SANITARY.**

Recently there was exhibited a car seat upholstered with our Mohair Plush, and the seat had already been in service twenty-five years.

CHASE LEATHERWOVE: The modern, leather-like upholstery material for use where flexible toughness is the one thought.

For cleaning Plush and other upholstery fabrics choose **CHASE PLUSH RENOVATOR**—That remarkable liquid cleanser which does not start the dyes or injure the fabric. **GUARANTEED** effective but **NOT HARMFUL.** Write for samples.

L. C. CHASE & CO., BOSTON, New York, Detroit, Chicago, San Francisco



Absolutely Dependable Power
Day-in-and-day-out

In zero weather or summer heat

Fairbanks-Morse
"Y" Oil Engines

Tested under the most trying conditions in every corner of the Globe—and proved utterly satisfactory.

Their entire freedom from Carburetors, Timers, Igniters, Hot Bulbs and Water Injection permits the use of low-grade fuel oil, and makes them supremely simple and dependable. Linked with Fairbanks Pumps, they will end all your water supply troubles. No skilled engineer is needed to operate them.

Write our nearest Branch for interesting descriptive matter

The Canadian Fairbanks-Morse Company, Limited

St. John, Quebec, Montreal, Ottawa, Toronto, Windsor, Winnipeg, Regina, Calgary, Vancouver, Victoria

We Can Take Care of Your

Bunker Fuel Requirements

Fueling Docks:

Montreal

Sarnia

Port Colborne



Toronto

Sault Ste. Marie

Quebec

CENTURY COAL COMPANY, LTD.

Head Office

Main 7300 - Montreal, P.Q.

Newfoundland Dockyards Limited

Proprietors

(REID NEWFOUNDLAND COMPANY LIMITED)

St. John's

610 Feet Graving Dock

WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

**SHEER LEGS AND WHARFAGE AT
DEEP WATER PIER**

**SHOPS EQUIPPED WITH MODERN
MACHINERY**

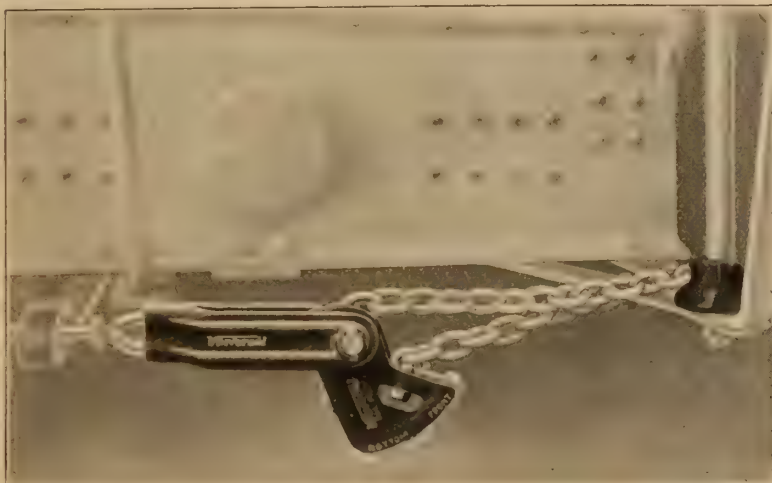
**PNEUMATIC TOOLS, ELECTRIC AND
ACETYLENE WELDING PLANT
IN OPERATION**

**VESSELS PAINTED WITH ANTI-
FOULING PAINTS**

Rates on Application

Universal

HAND BRAKE ATTACHMENT



DESIRABLE ON ANY CAR-A REAL NECESSITY ON MANY

MADE IN CANADA

WEBB G. KRAUSER

Transportation Bldg.

Montreal, Canada

International Steel Twin Ties

KILL
LAST AD.

Remember That



London Street Railway—Sept., 1922

We not only save you excavation and concrete, but at the same time reinforce your bearing slab of concrete, thus offering you a better and stronger base than you would have with the old expensive method of construction. Also all water absorbing materials are eliminated. Does this mean anything to you?

Sarnia Bridge Co., Ltd.
Sarnia, Ont.



Meeting the Test

THE valve lifters of a well-known truck are tapped in cold rolled steel with a 15/16-20 U.S.F. Pratt & Whitney Con-eccentrically Relieved Tap.

After careful testing, this style and make of tap was selected for its ability to stand up under high production and has proven satisfactory for over two years. The durability of these tools comes from the careful selection and heat treatment of the steel, while their cutting qualities are assured by their construction and the care taken in the manufacturing processes.

The con-eccentric feature insures the retention of original size through a number of regrindings. Instead of relieving the tooth directly back from the cutting edge, the land is made concentric for one-third of its width, the remaining two-thirds being eccentrically relieved.

You make no mistake in specifying P. & W. Taps for ordinary work or for exceptional jobs such as the one illustrated.

Taps, Dies, Reamers, Milling Cutters and many other tools are listed in our small tool catalogue. A copy awaits your request.

**PRATT & WHITNEY CO. OF
CANADA LIMITED**

Works: Dundas, Ontario

MONTREAL	HALIFAX	TORONTO
723 Drummond Bldg.	Roy Building	32 Front St. West
WALKERVILLE	WINNIPEG	VANCOUVER
103½ Sandwich St.	1205 McArthur Bldg.	B. C. Equipment Co.

PRATT & WHITNEY

Canadian Railway and Marine World

May, 1923

Further Co-ordination of G.T.R. With Canadian National Railways.

Sir Henry Thornton Explains His Work.

The acting Minister of Railways, Mr. Graham, in presenting the annual statement respecting Government railways, in the House of Commons recently, read the following memorandum from the President:—"The present management took charge of the property about Dec. 1, 1922, at a season of the year when inspections, examinations and progress were difficult on account of winter conditions. Obviously, the first effort of the management was to make as complete an inspection of the property as weather conditions would permit, in as short a time as possible, and to become acquainted with the officers and employes on the various constituent parts of the national railway system. In addition to this, traffic conditions and problems had to be examined, as all of these were essential factors in the determination of the organization which would be necessary to operate the consolidated system.

"There were three primary problems which demanded immediate attention: 1. The determination of the kind of organization to be employed in the administration of the property. 2. The determination of the regions into which the property was to be divided for operating purposes, and the location of regional and general headquarters. 3. The selection of officers for the various posts involved in the organization. The study and successful solution of these three questions naturally involved examination of the property itself; the country, its productivity; the movement of traffic and the rates charged thereon; the principal lines of future commercial and agricultural development; coupled with a general study of the Dominion's economic condition.

"Perhaps the most important and difficult problem was to assess the value of officers for prospective posts, with a view to getting the right man in the right place. The organization which had been decided upon is what may be called a strengthened divisional organization, as distinguished from a departmental organization. The executive officers consist of a Chairman and President, assisted by five Vice Presidents as under: 1. Vice President in charge of operation, maintenance and construction. 2. Vice President in charge of financial affairs. 3. Vice President in charge of insurance, immigration, development, lands, express and telegraphs. 4. Vice President in charge of legal affairs. 5. Vice President in charge of traffic. The above executive officers represent the minimum with which, in my judgment, it would be possible to operate such a property as the Canadian National Rys.; indeed, as time goes on and traffic increases, it will probably be necessary to add another Vice President. The list above given, however, represents a considerable economy as compared with the executive officers of the old national system and the G.T.R. Those properties had in the aggregate one Chairman, two Presidents, and 11 Vice Presidents, with a complete staff of officers for each. There is now one Chairman and President, and five Vice

Presidents. The actual saving in salaries of vice presidents and their immediate office forces should be at least \$150,000 a year. It is not possible at the moment to say exactly what the total savings in the salary list will be, as the organization has been barely completed, and the officers have hardly settled into their places, and consequently the exact number of clerks and subordinates in each department has not been finally fixed; but one would be quite safe in saying that a material saving will be accomplished, and a much more efficient administrative machine provided. Most of the announcements made with respect to officers represent either a rearrangement of duties and responsibilities, or the confirmation of positions which already existed. In only one or two cases have entirely new positions been created; and the net result will undoubtedly be the employment of a smaller administrative class.

"The railway has been divided into three regions for operating purposes, and this feature has been so exhaustively discussed before that comment is now unnecessary. Suffice it to say that the principle followed was to give to each operating region as much autonomy and local control in the actual operation of the property as was consistent with efficient principles of administration. Every effort will be made to confine the functions of the vice presidents and the executive officers to policies, leaving to general managers, general superintendents, and superintendents the responsibility of carrying out details. In the administration of such a large property as is represented by the Canadian National Rys. no other theory of organization can be successful.

"Various aspects of the operation of the national system are being studied with a view to reducing expenses as rapidly as possible. For example, it has been found that the railway could advantageously do its own insuring, and this has been decided upon. It is anticipated that from this item alone there will be a saving which will approximate \$500,000 a year.

"It is the intention of the present administration to apply itself as diligently as possible to the creation of new traffics, and the movement of those traffics, and existing traffics, with a constantly increasing economy. A system of statistics is under development, which will, it is hoped, enable the maximum of use to be made of engine power. An examination of timekeeping methods is under way, in order to ensure that every employe is paid all that is coming to him, but no more. New methods of storekeeping, and the custody of materials, are being developed, in order that purchases may be reduced to a minimum; and in various ways the organization is preparing to bring each department and function of the railway to as high a degree of efficiency as modern scientific knowledge will permit.

"In the organization of such a property, where we employ about 100,000 people, scattered over nearly 23,000 miles

of line, the process of consolidating and harmonizing the various forces is one which will necessarily take some time. It is, therefore, earnestly hoped that those who administer the affairs of the nation will be sufficiently patient to give those who are sincerely, honestly and conscientiously working at this problem an opportunity to show what can be accomplished before criticisms are made."

Changes in Districts and Divisions.

Circulars have been issued announcing territorial changes in the Central Region, as follows:—

By J. E. Morazain, General Superintendent, Quebec District: The LaTuque Subdivision, St. Maurice Division, between Viaduc and Fitzpatrick, both points inclusive, 124 miles, heretofore under Superintendent W. J. Atkinson, Quebec, has been added to Saguenay Division, under Superintendent R. Colclough, Quebec. The Manouan, Oskelaneo and Amos Subdivisions, St. Maurice Division, from west yard limit, Fitzpatrick, to O'Brien, 328.4 miles, heretofore under jurisdiction of W. J. Atkinson, Superintendent, Quebec, have been added to Cochrane Division, under Superintendent W. B. Way at Cochrane, Ont. The Assistant Superintendent will be located at Parent.

By C. G. Bowker, General Manager, Central Region: The 31st district, between Ottawa and Madawaska, 263.12 miles, including Ottawa terminal, and between Golden Lake and Pembroke, 21.09 miles, and the 32nd district, between Madawaska and Depot Harbor, 133.51 miles, formerly part of Ottawa Division, Eastern Lines, G.T.R., under R. H. Fish, then General Superintendent, Eastern Lines, Montreal, and F. L. Lamplough, Superintendent Ottawa Division, G.T.R., Ottawa, are transferred to Northern Ontario District, C.N.R., under General Superintendent W. R. Devenish, Toronto.

By W. R. Devenish, General Superintendent, Northern Ontario District: The Ottawa Division, Canadian National Rys., between Ottawa and Toronto, including branch lines, except Pembroke Subdivision between Rideau Jct. and Brent, a total of 601.1 miles, heretofore under W. R. Kelly, Superintendent, Ottawa, are transferred to Superintendent F. L. Lamplough, Ottawa, who has heretofore been Superintendent, Ottawa Division, G.T.R. His present jurisdiction includes the portions of the Ottawa Division, Eastern Lines, G.T.R., from Ottawa to Depot Harbor, 396.23 miles, from Golden Lake to Pembroke, 21.09 miles, and Ottawa Terminal, also the territory formerly in the Canadian National Rys. Ottawa Division, including branch lines, except Pembroke Subdivision, Rideau Jct. to Brent. Mr. Lamplough reports to General Superintendent Devenish, Toronto: The portions of the former Ottawa Division, Eastern Lines, G.T.R., east of Ottawa, have been transferred to Superintendent J. J. Connelly at Montreal.

The Pembroke Subdivision, Ottawa Division, Canadian National Rys., between Rideau Jct. and Brent, Ont., 157.8

miles, heretofore under W. R. Kelly, Superintendent, Ottawa, are added to Nipissing Division, Northern Ontario District, under Superintendent G. N. Goad, Capreol.

Secretarial Appointments.

Sir Henry Thornton issued the following circular, April 14: "On Jan. 30 last, R. P. ORMSBY was appointed Secretary of the Canadian National Ry. Co., and HENRY PHILLIPS was appointed Assistant Secretary. These appointments cover all subsidiary companies, with some few exceptions."

Operation and Construction Department Appointments.

S. J. Hungerford, Vice President, has announced the following:

A. E. CRILLY, heretofore Assistant to General Manager, Eastern Lines, Montreal, to be Chief of Wage Bureau, representing the office of Vice President, Operation and Construction Departments, in matters pertaining to staff and wages or working conditions of employees, and to perform such other duties as may be assigned to him from time to time by the Vice President. He will also co-operate with and assist general managers and other regional officers in connection with these, and related matters. Office, Montreal.

C. J. SMITH, heretofore Manager and Secretary, Montreal Warehousing Co., Montreal, to be General Manager of Elevators and Warehouses, C.N.R., in charge of the management of grain elevators and revenue traffic warehouses, reporting to the Vice President, Operation and Construction Departments, in connection with inter-regional matters, and generally supervising, under the direction of the regional general managers, the operation and maintenance of such facilities under their jurisdiction. He will also perform such other duties as may be assigned to him from time to time by the Vice President, Operation and Construction Departments. Office, Montreal.

Atlantic Region Appointments.

L. S. Brown, General Manager, Atlantic Region, has announced the following:

A. F. STEWART, heretofore Chief Engineer, Canadian Government Rys. and National Transcontinental Ry., east of Armstrong, Ont., Moncton, N.B., to be Chief Engineer, Atlantic Region. Office, Moncton, N.B.

A. F. Stewart, Chief Engineer, Atlantic Region, has announced the following:

F. O. CONDON, heretofore District Engineer, Maritime District, Moncton, to be Engineer, Maintenance of Way, Atlantic Region. Office, Moncton, N.B.

C. S. G. ROGERS, heretofore Assistant Engineer of Bridges, Maritime District, Moncton, to be Bridge Engineer, Atlantic Region. Office, Moncton, N.B.

H. J. CRUDGE, heretofore Assistant Engineer of Bridges, Moncton, to be Building Engineer, Atlantic Region. Office, Moncton, N.B.

W. U. Appleton, General Superintendent, Atlantic Region, has announced the following:

J. W. JOHNSTON, heretofore Superintending Engineer of Ferries, between Mulgrave and Point Tupper, N.S., Mulgrave, N.S., to be Superintendent of Ferries, with jurisdiction over the Tormentine, N.B., and Borden, P.E.I., ferry route, as well as on the Strait of Canso. Office, Mulgrave, N.S.

Atlantic Region officials heretofore termed assistant master mechanics will hereafter be designated as master mechanics. The position of Superintendent

of Car Service is abolished. All matters relating to car service, including tracing and distribution of cars, embargoes, demurrages, heating and refrigeration, speed freight reports, etc., will be handled by the Superintendent of Transportation, Moncton, N.B. All matters relating to car accounting will be handled by the Assistant Superintendent of Transportation, Moncton, N.B., and interchange reports, conductors' journals and similar reports will be addressed to him direct.

W. E. Barnes, Superintendent of Motive Power, Atlantic Region, has announced the following:

G. L. DICKSON, to be Electrical and Signal Engineer, Atlantic Region. Office, Moncton, N.B.

FRANK WILLIAMS, heretofore Mechanical Designer, to be Mechanical Engineer, Atlantic Region. Office, Moncton, N.B.

W. N. Rippey, Superintendent, Moncton Division, Maritime District, Atlantic Region, has announced the following:

L. R. ROSS, heretofore Terminal Superintendent (Station), St. John, N.B., to be Superintendent of Terminals there.

W. P. O'SULLIVAN, to be acting Terminal Agent, St. John, N.B.

Central Region Appointments.

W. R. Devenish, General Superintendent, Northern Ontario District, Central Region, has announced the following:

F. L. LAMPLOUGH, heretofore Superintendent, Ottawa Division, G.T.R., Ottawa, Ont., to be Superintendent, Ottawa Division, Northern Ontario District, Central Region, with territory between Ottawa and Toronto, including branch lines, except Pembroke Subdivision, between Rideau Jct. and Brent, Ont. Office, Ottawa, Ont.

W. R. KELLY, heretofore Superintendent, Ottawa Division, Ontario District, Ottawa, Ont., to be Superintendent of Transportation, Northern Ontario District, Central Region, vice G. A. Hoag, appointed Assistant Superintendent, Ottawa Division, Northern Ontario District, Central Region. Office, Toronto.

G. A. HOAG, heretofore Superintendent of Transportation, Ontario District, Toronto, to be Assistant Superintendent, Ottawa Division, Northern Ontario District, Central Region. Office, Trenton, Ont.

W. H. McAlpine, Superintendent of Motive Power, has issued the following:

J. HAWKINS, heretofore Assistant Master Mechanic, Hornepayne, Ont., to be Master Mechanic there.

W. G. STRACHAN, heretofore Assistant Master Mechanic, Capreol, Ont., to be Master Mechanic there.

W. C. MOORE, heretofore Assistant Master Mechanic, Ottawa, Ont., to be Master Mechanic there.

F. L. Lamplough, Superintendent, Ottawa Division, Northern Ontario District, has announced the following:

S. McILWAIN, heretofore Division Engineer, Ottawa Division, to be Division Engineer, Ottawa Division, Northern Ontario District, Central Region. Office, Ottawa, Ont.

P. H. FOX, heretofore Assistant Superintendent, Ottawa Division, Ontario District, Trenton, Ont., to be Assistant Superintendent, Ottawa Division, Northern Ontario District, Central Region. Office, Ottawa, Ont.

W. C. MOORE, heretofore Assistant Master Mechanic, Ottawa Division, Ottawa, to be Master Mechanic, Ottawa Division, Northern Ontario District, Central Region, his former position being abolished. Office, Ottawa, Ont.

G. N. Goad, Superintendent, Nipissing Division, Northern Ontario District, Central Region, has announced the following:

L. W. BULLER, heretofore Assistant Superintendent, Ottawa and Pembroke Divisions, Ontario District, Toronto, to be Assistant Superintendent, Nipissing Division, Northern Ontario District, Central Region. Office, Toronto.

Western Region Appointments.

H. A. Dixon, Regional Chief Engineer, Western Region, has announced the following:

J. A. HEAMAN, heretofore Assistant Chief Engineer, Western Lines, Winnipeg, to be Regional Assistant Chief Engineer, Western Region. Office, Winnipeg.

J. E. DAVISON, heretofore Assistant to Chief Engineer, Western Lines, Winnipeg, to be Assistant to Regional Chief Engineer, Western Region. Office, Winnipeg.

J. G. LEGRAND, heretofore Bridge Engineer, Western Lines, Winnipeg, to be Bridge Engineer, Western Region. Office, Winnipeg.

W. WALKDEN, heretofore Assistant Bridge Engineer, Western Lines, Winnipeg, to be Assistant Bridge Engineer, Western Region. Office, Winnipeg.

D. R. CAMPBELL, heretofore in charge of Construction Department, Western Lines, Winnipeg, to be General Superintendent, Construction, Western Region. Office, Winnipeg.

W. BURNS, heretofore Engineer of Construction, Western Lines, Winnipeg, to be Construction Engineer, Western Region. Office, Winnipeg.

G. C. BRIGGS, heretofore Architect, Western Lines, Winnipeg, to be Building Engineer, Western Region. Office, Winnipeg.

J. H. CORMICK, heretofore Signal Engineer, Western Lines, Winnipeg, to be Signal Engineer, Western Region. Office, Winnipeg.

H. P. BLAKE, heretofore Engineer of Water Supply, Western Lines, Winnipeg, to be Water Supply Engineer, Western Region. Office, Winnipeg.

J. W. PORTER, heretofore Special Engineer, Western Lines, Winnipeg, to be Special Engineer, Western Region. Office, Winnipeg.

T. TURNBULL, heretofore Engineer, Maintenance of Way, Western Lines, Winnipeg, to be Engineer, Maintenance of Way, Manitoba and Saskatchewan Districts, Western Region. Office, Winnipeg.

F. B. TAPLEY, heretofore Engineer, Maintenance of Way, Eastern Lines, Moncton, N.B., to be Engineer, Maintenance of Way, Alberta and British Columbia Districts, Western Region. Office, Edmonton, Alta.

Finance and Accounting Department Appointments.

J. M. Rosevear, General Comptroller, has announced the following:

EDWARD ARNOLD, heretofore Freight Claim Agent, G.T.R., Montreal, to be General Freight Claim Agent, with jurisdiction over loss and damage claims for entire system, exclusive of Grand Trunk Western Lines. Office, Montreal.

Edward Arnold, General Freight Claim Agent, has announced the following:

O. CAMERON, heretofore Freight Claim Agent, Moncton, to be Freight Claim Agent, with jurisdiction, lines east of Riviere du Loup and Monk, Que. Office, Moncton, N.B.

H. McDONALD, heretofore Freight Claim Agent, Toronto, to be Freight Claim Agent, with jurisdiction, Ontario

lines, Toronto and south and west thereof to Niagara Falls, Buffalo, Windsor and Port Huron, and intermediate branch lines, except from Orillia to Midland and Scotia Jct. to Depot Harbor; Toronto to Washago and North Bay and west to Current, also Cochrane to Superior Jct. Office, Toronto.

A. G. GILMOUR, heretofore Freight Claim Agent, Winnipeg, to be Freight Claim Agent, and J. W. CONNELL, heretofore Assistant Freight Claim Agent, Winnipeg, to be Assistant Freight Claim Agent, with jurisdiction, lines north and west of Port Arthur and Superior Jct. to Lucerne, B.C. Office, Winnipeg.

T. GINNELLY, heretofore Assistant Freight Claim Agent, Vancouver, B.C., to be Assistant Freight Claim Agent, with jurisdiction, lines west of Lucerne, B.C. Office, Vancouver, B.C.

Insurance, Lands, Express, Telegraph, Colonization, etc., Department Appointments.

W. D. Robb, Vice President, has announced the following:

F. A. BOURNE, heretofore Secretary, Pension Department, G.T.R., Montreal, to be Superintendent of Pensions and Relief. Office, Montreal.

W. D. KEESON, to be Director of Insurance. Office, Montreal.

Passenger Department Appointments.

H. H. MELANSON, heretofore Passenger Traffic Manager, Toronto, has been appointed General Passenger Traffic Manager, with office at Montreal. His position was incorrectly mentioned as Passenger Traffic Manager in our last issue.

A. B. CHOWN, heretofore Assistant General Passenger Agent, G.T.R., Chicago, Ill., has been appointed General Passenger and Baggage Agent, G.T.R., Chicago, Ill., vice J. D. McDonald, who has retired on the pension fund, after 54 years service.

W. R. EASTMAN, heretofore General Agent, Passenger Department, G.T.R., Boston, Mass., has been appointed Assistant General Passenger Agent, G.T.R., and General Western Passenger Agent, C.N.R., Chicago, Ill., vice A. B. Chown, appointed General Passenger and Baggage Agent there.

R. Creelman, Passenger Traffic Manager, Western Region, has announced the following:

OSBORNE SCOTT, heretofore General Passenger Agent, Vancouver, B.C., to be General Passenger Agent, east of Jasper, Alta., including Duluth, Winnipeg & Pacific Ry., Western Region, vice W. E. Duperow, appointed Passenger Traffic Manager, Central Region, Toronto. Office, Winnipeg.

Purchases and Stores Department Appointments.

G. H. Jenkins, General Fuel Agent, has announced the following:

A. J. WILMOT, heretofore Fuel Agent, Moncton, to be Fuel Agent, Atlantic Region. Office, Moncton, N.B.

C. E. JONES, heretofore Fuel Agent, Toronto, to be Fuel Agent, Central Region. Office, Toronto.

W. E. EVANS, to be Assistant Fuel Agent, Central Region. Office, Toronto.

W. J. STURGES, formerly Assistant Fuel Agent, Edmonton, Alta., and latterly acting Fuel Agent, Winnipeg, to be Fuel Agent, Western Region. Office, Winnipeg.

Regional fuel agents will report to their respective general managers in matters of discipline, staff, wages and distribution of fuel, and to the Director

of Purchases and Stores, through the General Fuel Agent, in matters of contracts, prices, inspection and accounts.

L. C. Thomson, Chief of Stores, has announced the following:

A. E. COX, heretofore General Storekeeper, Western Lines, Winnipeg, to be General Storekeeper, Western Region. Office, Winnipeg.

D. ROBERTSON, heretofore Assistant General Storekeeper, Western Lines, Winnipeg, to be Assistant General Storekeeper, Western Region. Office, Winnipeg.

E. J. McVEIGH, heretofore General Storekeeper, G.T.R., Montreal, to be General Storekeeper, Central Region, C.N.R. Office, Toronto.

E. D. TOYE, heretofore on special duty in office of Vice President, Purchasing, Supplies and Stores, Toronto, to be Assistant General Storekeeper, Central Region. Office, Toronto.

W. B. LOGAN, heretofore acting District Storekeeper, Moncton, N.B., to be General Storekeeper, Atlantic Region. Office, Moncton, N.B.

General storekeepers report to their respective general managers in matters of service, discipline, staff, wages and facilities, and to the Director of Purchases and Stores, through the Chief of Stores, in matters of policy, standard practices, stocks, etc.

E. J. McVeigh, General Storekeeper, Central Region, has announced the following:

J. C. JACKSON, to be District Storekeeper, Battle Creek, Mich.

J. B. LIVINGSTONE, heretofore Divisional Storekeeper, to be District Storekeeper, London, Ont.

H. B. AIKIN, confirmed as District Storekeeper, Leaside, Ont.

C. J. O'DOHERTY, heretofore Storekeeper, G.T.R., Ottawa, to be District Storekeeper, C.N.R., Ottawa, Ont.

W. B. GORDON, heretofore Storekeeper, G.T.R., Montreal, to be District Storekeeper, C.N.R., Point St. Charles, Montreal.

M. W. STEVENS, to be District Storekeeper, Portland, Me.

J. H. BROWN, heretofore Storekeeper, to be District Storekeeper, St. Malo, Que.

The foregoing storekeepers will continue to handle territory as at present until further advised.

W. H. Grant, General Tie Agent, has announced the following:

J. C. STEWART, to be Tie Agent, Atlantic Region. Office, Moncton, N.B.

A. R. THOMPSON, to be Tie Agent, Central Region. Office, Toronto.

J. B. PARKIN, to be Tie Agent, Western Region. Office, Winnipeg.

Regional tie agents will report to their respective general managers in matters of discipline, staff, wages, and distribution of material, and to the Director of Purchases and Stores, through the General Tie Agent, in matters of contracts, prices, inspection and accounts.

Bureau of Economics Appointments.

R. A. C. Henry, Director, Bureau of Economics, has announced the following:

S. W. FAIRWEATHER, to be Assistant to Director, Bureau of Economics. Office, Montreal.

V. I. SMART, B.A., for some time on the Railways and Canals Department's technical staff at Ottawa, and who, on Sir Henry Thornton assuming office, on Dec. 1, 1922, was transferred to his staff at Ottawa, for special service, is appointed Special Engineer, Bureau of Economics. Office, Montreal.

A. S. GOING, heretofore Engineer of Construction, G.T.R., Montreal, to be Terminal Engineer, Bureau of Economics. Office, Montreal.

E. B. WALKER, heretofore Electrical Engineer, Toronto, to be Electrical Engineer, Bureau of Economics. Office, Montreal.

Daylight Saving and the Railways.

There is no unanimity of opinion among the councils of the larger cities as to daylight saving or summer time, and also considerable diversity of views as to the dates within which, if adopted, it shall be operative. The railway companies have decided that, wherever necessary, owing to the adoption of summer time, for the convenience of the travelling public, suburban trains serving the cities will be run on the daylight time.

Quebec City Council, on April 13, refused to reconsider the adoption of summer time, a resolution favoring it having been defeated by 9 to 4 at a previous meeting. In Montreal, where on March 15 a resolution declining to adopt summer time was defeated by 23 to 13, a number of petitions were presented protesting against this decision, and on April 4, the council reaffirmed its decision by 23 to 11. The Railway Association of Canada's Secretary subsequently made the following statement:—"In view of the demonstration by the business interests and workers in favor of daylight saving hours, it appears evident that the railways, in order to meet the demands of commuters, will have to operate their suburban train service during the coming summer on substantially the same schedules as were in effect last year, the change becoming effective May 13, and continuing until Sept. 30."

In Toronto, daylight time will be in force from May 13 to Sept. 9, and these dates will control the municipalities along the Lake Shore to Port Credit. The C.P.R. and the Canadian National Rys. will alter the time of one train a day each way to suit business people who live out of town. The Toronto Suburban Ry. will only make one alteration in its time table, viz.: the 12.45 car from Keele St. to Guelph, will operate on standard time every week day but Saturday, when it will be run on daylight time.

Ottawa, which originally decided to adopt the Railway Association's suggestion to make the summer time coincide with the change to spring schedules by the railways, on April 17, decided to have summer time from May 13 to Sept. 30. Vancouver will not decide what will be done until June 16, when the council is expected to pass a daylight saving bylaw to run from June 19 to Sept. 9. In Victoria, a daylight saving bylaw went into operation on April 15, and will continue until Sept. 9.

Regulations for Freight Trains Passing Through Tunnels.—The Board of Railway Commissioners' circular of Feb. 2, as published in Canadian Railway and Marine World for March, pg. 114, has been cancelled by circular 200, issued April 4, as follows:—"The Board directs that on trains passing through tunnels, more than 500 ft. in length, open cars loaded with wood, lumber, piles, poles, etc., shall not be placed next to the engine; and, if sufficient box cars are available, at least three of such shall be placed between the engine and such loaded timber cars on such a movement."

Railway Wages and Working Conditions in Canada and the United States.

The Canadian Brotherhood of Railway Employees applied, as stated in Canadian Railway and Marine World for April, for a board of conciliation and investigation, to adjust the dispute between the Canadian National Rys. and certain western lines sleeping car porters, members of the brotherhood. We were officially advised on April 17 that the Labor Department had granted a board, and that the C.N.R. will be represented thereon by C. E. Dafoe, Winnipeg, and the employees by David Campbell, Winnipeg, they to agree upon a chairman. Subsequently, as they could not agree, the Labor Department appointed W. J. Donovan, of Winnipeg, as chairman. The dispute has to do with: 1. Grand Trunk Pacific porters' claims for back wages, disputed by the railway. 2. Claim for reinstatement of all porters re-employed after the Winnipeg strike in 1919. 3. The dismissal of a porter for irregularities in connection with the handling of revenue.

Two local divisions of the Canadian Brotherhood of Railway Employees at London, Ont., nos. 96 and 198, have combined, this giving the London organization a membership of about 350.

A Montreal press dispatch states that employees at the C.P.R. Angus shops, agreed with the management that, instead of a number of the junior employees being laid off, so as to provide full time work for the senior employees, the available work should be distributed among all employees, and that as a result of this arrangement the shops were closed down from March 24 to April 3. At a number of the other shops on the system, the juniors were laid off in sufficient numbers to ensure steady work for the seniors.

A press dispatch states that the funds of the Canadian locals of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers will henceforth be kept in Canada, instead of being sent to the U.S. to be placed under the control of the organization's general officers at Detroit. Under a new arrangement, following the convention at Detroit a few months ago, headquarters of the C.P.R. employees' division of the brotherhood will be located at Ottawa, and of the C.N.R. employees' division at London, Ont. W. Jewkes will be Secretary-Treasurer at Ottawa, and R. H. Hessel at London.

F. McKenna, Vice President, Brotherhood of Railway Carmen, and Vice Chairman, Division 4, American Federation of Labor's Railway Employees' Department, addressed a meeting of shopmen in London, Ont., on April 9, and is reported to have stated, in discussing the possibilities of reopening negotiations with the railways for a higher wage scale, that the present is not an opportune time to try to introduce a new wage schedule. In connection with the "one big union" proposals which have been detailed in these columns, Mr. McKenna said that similar amalgamation plans have been tried several times before and have been found unworkable.

A. R. Mosher, President, Canadian Brotherhood of Railway Employees, in addressing members of the organization in Montreal recently, after stating that the brotherhood's function was to remove injustice, correct glaring inequalities and improve the conditions not only of its members, but of the community as a whole, explained at length the importance of good service to the railways.

He pointed out that employees must put their hearts into their work, if the railway is to be enabled to get the money to enable it to pay good wages, and stated that, as the road has no mysterious powers, but must pay wages out of earnings, employees who are prone to waste time and damage equipment are enemies to all concerned, railway and other employees alike. He urged co-operation with Sir Henry Thornton and his executive officers in the struggle to make the Canadian National Rys. successful.

A vote was taken among dispatchers, operators and commercial wire men to test the sentiment as regards the proposition of breaking away from the international telegraphers' organization. Results demonstrated that sentiment is not favorable to the severance of international affiliation and the formation of a Canadian brotherhood. A large proportion of the membership in Eastern Canada did not vote, and as a result, only 751 ballots were cast, of which 655 were in favor of maintaining the international status, and 96 against.

W. Aspinall, Secretary of the Central Committee of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, is reported to have stated that 60 days notice of an application for an increase in maintenance of way employees' wages on Canadian railways has been given the Railway Association of Canada. This notice is necessary according to the agreement existing between the Association and the Brotherhood. Mr. Aspinall is stated to have claimed that many U.S. roads have recently voluntarily granted substantial increases to their maintenance of way employees, independently of the rates set by the U.S. Labor Board, and that the wages now being received by Canadian maintenance of way employees are lower than are being paid for similar classes of work in outside industries.

A press report states that a conference is being arranged in Detroit between Pere Marquette Ry. officials and officers of the telegraphers' organization on the Canadian division, to discuss wages. It is stated that a move to reduce telegraphers' wages has been made by the company, and that the men have protested to the Labor Department. It is probable that if the conference does not secure a settlement, a conciliation board will be applied for by the employees, under the Industrial Disputes Investigation Act. The number of telegraphers affected is about 40.

United States.—Details of the injunction against the striking shopmen on the U.S. railways secured by the U.S. Attorney-General were given in Canadian Railway and Marine World at the time the strike was in progress, it being stated that the matter of making the injunction permanent was to be argued later. Argument has been set for May 2, in Chicago. Preparatory to the hearing, the Attorney-General has been gathering evidence from various roads on which the strike was effective, and much testimony as to losses occasioned and acts of lawlessness committed by strikers has been gathered.

The Pennsylvania Rd. "full crew law," which required more than the ordinary number of trainmen on freight trains having more than a specified number of cars, was repealed by the Pennsylvania Legislature two years ago. This law,

like similar ones in other states, came in for a lot of criticism from the public generally, on account of accusations to the effect that its only object was to furnish jobs to members of the train service brotherhoods. It is reported that advocates of the former legislation are again trying to introduce it in the Pennsylvania Legislature, while business men of Philadelphia and other cities are advancing reasons as to why such a law should not be re-adopted.

A number of U.S. railways have increased the rates of pay for unskilled labor, and others are preparing to take similar action. The Illinois Central granted its 12,000 shopmen an increase of 2c. hourly, retroactive to April 1, bringing their average wage to 74c. an hour. The C. C. C. & St. L. is reported to have granted increases to shopmen, section foremen and section laborers. These increases have been made necessary by the increases granted recently in the packing and building industries, and by the 11% increase in the steel industry. A Chicago press report states that more than 2,000,000 railway employees are preparing to go before the U.S. Railroad Labor Board, with demands for wage increases, but at the time of writing (April 23) this report lacks confirmation.

Another example of labor organizations breaking into finance and banking is seen in the action of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, which will establish a bank in Cincinnati with capital of \$200,000 and surplus of \$50,000. The Comptroller of the Currency has approved an application for a national charter.

Canadian Railway Club.—E. P. Flintoft, Assistant General Solicitor, C.P.R., read a very exhaustive and interesting paper on, "The Legal Department of the Railway and its Functions" before the club at Montreal, April 10, in which, after defining "law," he described very fully the Grand Trunk, Canadian Northern, Canadian National, Canadian Pacific, New York Central and Pennsylvania railways' law departments, and also dealt with the following questions:—Functions of the law department; consultation, advising and preparation of opinions; freight claims; claims for personal injury or damage to property other than freight; conduct of litigation and expropriation proceedings; conduct of proceedings before Board of Railway Commissioners; parliamentary and departmental work; matters arising in connection with directors' and shareholders' meetings; conveyancing, including preparation of agreements; land and tax matters; conference and negotiations with other carriers; negotiations with municipalities.

Railway Accidents Throughout Canada.—The number of accidents throughout Canada during March, reported to the Board of Railway Commissioners, was 204, in which 3 passengers, 7 employees and 10 others were killed, and 46 passengers, 169 employees, and 18 others were injured. Included in "others" are 5 killed and 14 injured in 12 highway crossing accidents, in which the crossings were unprotected in 8 cases, protected by bells in 2, and by gates and flagman in one each. Automobiles were concerned in 6 of these accidents, other vehicles in 2, and pedestrians in 4.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta & Great Waterways Ry.—The Alberta Railways Department report for 1922, laid before the legislature recently, states that of the \$514,000 appropriated for reconditioning the railway from Carbondale to the present terminus, about 4 miles from McMurray, there remained unexpended \$114,000.

The question of the extension of the line from Waterways, the present terminus of the railway, to McMurray, was debated in the legislature, on a motion calling for the completion of the line at an early date. The Minister of Railways stated that the province's total liability in respect of the railway is \$11,532,411.70; that the carrying charges are \$635,000 a year; that the charter does not call for the terminus at McMurray, but "at or near" there; and that the legislature's vote in 1921 was for putting the line into shape for more economical operation and not for its extension to McMurray. That vote was overexpended, and there was a further vote in 1922. The cost of the extension is estimated at \$210,000, and the government is not in a position to provide the money at present. The late government promised that the railway would be built to McMurray immediately such construction could be justified, and the present government takes the same stand. The motion was defeated. (June, 1922, pg. 286.)

Beaver Coal & Ry. Co. has been incorporated by the New Brunswick Legislature to build and operate a railway in connection with its coal properties at Beersville, N.B. It was stated that G. Burchell, and those associated with him, had completed negotiations with the owners of the North Shore Ry., for the purchase of that line and the coal properties owned and worked formerly by Beersville Coal & Ry. Co., and the new owners would proceed with the development and operation of the property. The North Shore Ry. extends from Adamsville, on the Intercolonial Ry., to Coalville, 15 miles. It has not been operated for several years, owing to the company's failure, and it was proposed at one time to take up the rails and use them on the St. John & Quebec Ry.

Burrard Tunnel & Bridge Co.—The following information was given in the House of Commons recently, by the Minister of Public Works, in answer to questions by G. Black, Yukon: The Burrard Tunnel & Bridge Co. has made application for approval of plans for a bridge spanning the second narrows in Vancouver harbor, and the matter is still under consideration. No representations have been made to the Public Works Department to refuse approval of the plans. The question of the Dominion Government granting a subsidy, to aid in the construction of the bridge, is also under consideration.

The plans submitted by the company provide for a swing span of 150 ft. and for a clearance above high water of 15 ft. It is reported that the Public Works Department asked that the swing span be made 175 ft. and the clearance above high water 25 ft., but that an arrangement has been made for a 150 ft. swing span with a 20 ft. clearance. It has been recommended that a bascule span be provided, instead of a swing span, and this is under construction. In 1913 the Dominion Parliament voted a subsidy in aid of the erection of a bridge, and it is

suggested that this subsidy be renewed in whole or in part, owing to the alteration in the clearance made to meet the views of the Public Works Department having added materially to the cost of erection.

Calgary & Fernie Ry.—A Calgary, Alta., press report states that construction will be resumed on the projected railway from Calgary, Alta., to Fernie, B.C., during the summer. The Calgary & Fernie Ry. Co. was incorporated by the Dominion Parliament in 1906, to build a railway from Calgary through Kananaskis Pass to the headwaters of the Elk River, and along the valley to Fernie, B.C., and had been granted several extensions of time for construction. Some surveys were made in 1914, some route and location plans were approved by the Board of Railway Commissioners in the same year, and some grading is reported to have been done. The promoters claim that \$600,000 had been expended up to the outbreak of war, when operations were suspended. The report states it is proposed to build 50 miles this year from Sparwood northerly to Mount Wilson, where a colliery is to be developed, the promoters stating that about \$3,500,000 will be expended on the railway and the colliery. Sparwood is on the C.P.R. Crowsnest Pass line, and also a station on the Great Northern Ry. line to Michel, B.C. F. Crandall represents the promoters. (Jan., pg. 8.)

Calgary & Southwestern Ry.—The Alberta Legislature has extended the time for starting construction on this projected railway from Calgary to the Sheep Creek coal fields district, and has extended for five years the time within which it is to be completed. P. Burns, Calgary, Alta., is the principal promoter.

The Canadian-American Collieries Ltd. has been authorized by the Alberta Legislature to build a standard gauge railway from its collieries in Sec. 20, Tp. 52, Range 4, west 4th Meridian, to a junction with the Canadian National Rys. at mile 835 from Winnipeg, near Duffield, Alta., construction to be started within a year and completed within two years. The projected line is only a short one. (March, pg. 118.)

Duluth to Fort William and Port Arthur.—The proposal mentioned in press reports last autumn to build a railway from Duluth, Minn., to Fort William and Port Arthur, Ont., the basis of which was to be the old Duluth & Northern Minnesota Rd., is again being referred to. The D. & N. M. Rd. has a main line mileage of 99.25, starting from Knife River, on the Duluth & Iron Range Rd., with about 20 miles of other track. It has been abandoned for some years and its sale was authorized by a court some time ago. Robert Waldron of Duluth, who was reported to have agreed to buy the line, and who is promoting the proposed line to Fort William, states that he is endeavoring to arrange financial matters in New York, and that, if successful, construction will be started. It is suggested that the Duluth, Winnipeg & Pacific Ry., running from West Duluth to Fort Frances, Ont., 167 miles, and owned by the Canadian National Rys., might be acquired and amalgamated with the project mentioned above. (Nov., 1922, pg. 568.)

Edmonton, Dunvegan & British Columbia Ry.—An agreement has been reached between the Alberta Government, the

J. D. McArthur interests and the Union Bank, with respect to the issue of securities for the construction of extensions to the E. D. & B. C. Ry. and its subsidiary the Canada Central Ry. The bank is a party to the agreement under which the Alberta Government took over these two lines from the J. D. McArthur interests, and the matter at issue was that the bank desired to adequately protect its security, in connection with the issue of additional securities authorized to be issued in 1922 for the construction of 39.5 miles of extensions. The railway is being operated by the C.P.R., which has also built for the Alberta Government some extensions which were put in operation at the end of 1921.

The Alberta Legislature, in the estimates passed at its recent session, authorized the provision of funds to proceed with the construction of an extension of 13 miles from Berwyn, on the Canada Central Ry., to the Waterhole district, and for the extension of the Grande Prairie branch of the E. D. & B. C. Ry., from Grande Prairie westerly for 12 miles towards Lake Saskatoon. It is said that the new construction will be done by the Alberta Railways Department, and that the extensions, when completed, will be operated by the C.P.R. under the general agreement. (May, 1922, pg. 236.)

Esquimalt & Nanaimo Ry.—F. M. Preston, City Engineer, Victoria, B.C., is reported to have stated that, after making due allowance for possible delays, the new railway and general traffic bridge at Johnston St. will be completed in July. (March, pg. 118.)

The Fort Alexander Ry. Co. has been incorporated by the Manitoba Legislature, to build a railway from the Canadian National Rys. Grand Beach Branch to the site of a proposed pulp and paper mill on the Fort Alexander reserve. There was some opposition to the bill at all its stages, principally by labor members, who carried their opposition to the third reading, which was passed by 36 votes to 10. The other opposition was withdrawn in committee of the whole, when it was stated that the Canadian National Rys. had no intention of building a branch through the area proposed to be served. Sir William Price of Quebec, is reported to be interested in the project. Promoters named in the act are: J. D. McArthur, B. W. Thompson, B. J. McLeod, W. H. Simpson and E. J. Rankin, Winnipeg.

Hudson Bay Ry.—A delegation from the prairie provinces, headed by J. A. Campbell, Commissioner for Northern Manitoba, waited on the acting Minister of Railways at Ottawa, April 13, to urge the completion of the railway from Pas to Port Nelson. Mr. Graham is reported to have said that he would favor the building of the railway to Hudson Bay even if there was no shipping at the end of it, that the deputation could rest assured that when the money was obtained—and it was intended to insert an item in the supplementary estimates—the work will be gone on with, that the terminus would be at Port Nelson, and that there was no present intention of making any further investigation as to the merits of Fort Churchill. When that question was last looked into 90% of the reports favored Port Nelson.

Lacombe & Northwestern Ry.—The Alberta Railways Department report for

1922, submitted to the legislature recently, states that the 12 mile extension of the line from near Rimbey to Hoadley, was completed at an expenditure of \$265,000. The operating loss for the year was approximately \$20,000, which was partly accounted for by the cost of removing the combined locomotive house and machine shop from Rimbey to La-combe.

A motion was made in the legislature recently that construction on an extension from Hoadley to Edmonton, about 75 miles, should be started this year, or in the alternative the government should enter into negotiations with the C.P.R. for building the extension and the operation of the whole line. After discussion, during which it was stated that the government had the question of the further extension under consideration, the motion was withdrawn. It is reported to have been decided since that no further construction will be done this year. The legislature voted \$56,235 recently for right of way, improvement, and bond interest. (Jan., pg. 8.)

Lake Huron & Northern Ry.—We are officially advised that several proposals have been made to the Ontario Government by the Lake Huron & Northern Ry. Co. to secure a revival of its charter powers to extend its line from the present terminus at Rock Lake, to Hannah Bay on Hudson Bay, which expired in 1922. The government then announced that the existing line ought to be taken over as a provincial undertaking. So far, no proposition has been made by the company which the government considers would justify the regranting of the charter, but negotiations are being proceeded with. The government, we are advised, had under consideration the feasibility of building a line north from Bruce Mines into the Missigua Forest Reserve to increase the value of the timber in that area. (Aug., 1922, pg. 410.)

The Manitoba Water Power & Electrical Co. was incorporated under the Manitoba Joint Stock Companies Act over 20 years ago, and was given an act of incorporation by the Manitoba Legislature in 1903. The authorized capital was \$5,000,000, and the company was empowered to develop water powers, generate electricity, and distribute the same for light, heat and power, and in addition was authorized to build a steam or electric railway from the northern or eastern boundary of Winnipeg to the Winnipeg River, or to Lac du Bonnet or to Alexander on Lake Winnipeg. In 1905 the company was authorized to increase its capital stock from \$5,000,000 to \$8,000,000. Since then nothing in the way of the development of the project has been done. The Manitoba Legislature was asked this year to revive the charter, and to amend the company's railway building powers, by authorizing the construction of a railway from Emerson, on the International Boundary, through Winnipeg, along the eastern shore of Lake Winnipeg, and on to Fort Churchill, Hudson Bay. The bill was read a first time, April 4, and was opposed from the beginning, on account of the financing plans outlined, the various powers asked, and on general grounds. The second reading was passed by 27 votes to 11, on April 10, and the bill was sent to the private bills committee on April 17. The promoters were given leave to withdraw the bill. D. A. Keizer, 272 Sherbrooke St., Winnipeg, is reported to be Secretary of the company.

Michigan Central Rd.—The Board of Railway Commissioners sat in St.

Thomas, Ont., recently, to consider the company's plans for the extension of freight yards there. The main question involved was the company's proposal to close Park Ave., to which residents of Yarmouth Tp., which adjoins the yard, objected, and asked for the construction of an overhead bridge. Another question was in regard to the proposed subway at First Ave., on the boundary line between St. Thomas and Yarmouth Tp., in connection with which Yarmouth Tp. Council asked for the construction of a separate subway for pedestrians. Chief Commissioner Carvell is reported to have intimated that there was a doubt as to whether the Board had power to close Park Ave., and that if the Board did not, it would mean the construction, either of a subway, or an overhead bridge, towards the construction of which Yarmouth Tp. would be called upon to pay a large proportion. He considered further consultation between the parties desirable, and the hearing was adjourned for two weeks. A press dispatch of April 20, states that the Board has made an order authorizing the company to extend its yards through Yarmouth Heights, but that the closing of Park Ave. was not dealt with.

We are officially advised that the company's yard and freight tracks at St. Thomas are too small to accommodate the present trains. To overcome this, and to provide proper facilities, it is proposed to extend the tracks on the south side of the yards from about First Ave. eastward to Council Road, and to make other changes in the tracks leading to turntable and cinder pit. This will provide 7 tracks, the shortest of which will have a capacity of 110 cars, way car and locomotive. The work is estimated to cost \$186,000, and it is expected to have it completed this year. (Jan., pg. 8.)

Pere Marquette Rd.—Appropriations for betterments for this year are reported to amount to \$10,862,000, and to include \$40,000 for building a new station at Sarnia, Ont. A description of this was given in Canadian Railway and Marine World, Nov., 1922, pg. 568.

Timiskaming & Northern Ontario Ry.—A Toronto paper stated recently that G. W. Lee, Chairman, T. & N. O. R. Commission, had informed it that plans for the electrification of the line were in Premier Drury's hands, and that the Commission intended to recommend shortly that the work be gone on with, adding that electrification depended on traffic, and that if business was maintained at its present rate electrification would come shortly. Canadian Railway and Marine World has been unable to secure either a confirmation or denial of the statement attributed to Mr. Lee.

The Premier stated in the Ontario Legislature, April 6, that he purposed conferring with the T. & N. O. Ry. Commission, with respect to the construction of an extension into the Kirkland Lake gold areas. Following this conference, G. W. Lee, Chairman of the Commission, was reported to have stated, on April 13, that it had been decided to build a branch from Swastika to Kirkland Lake, about 25 miles, and that tenders would be invited for its construction immediately. A press report of April 19 stated that engineers had begun the survey at Swastika. We are officially advised that the branch will be built under the charter, granted by the Dominion Parliament, to the Nipissing Central Ry. Co., the entire capital stock of which is held by the Commission. The branch will be about 25 miles long, and will run east-

erly from Swastika, mile 165.8 from North Bay, through the Teck, Lebel, Gauthier, and McVittie Tps., to the shores of Larder Lake, serving practically the entire Kirkland Lake and Larder Lake mining areas. The branch will not, at first at least, be operated by electricity.

A press report of April 17, stated that preparations were being made to resume work on the 70 mile extension northerly from Cochrane, to near New Post, on the Abitibi River, which it is expected to have completed by Oct. 31. We are advised that some work was carried on during the winter, although, of course, some of it, such as ballasting, had to be suspended. (March, pg. 119.)

Transportation of Alberta Coal to Ontario.

The possibilities in connection with the proposed marketing of Alberta coal in Ontario were discussed in Canadian Railway and Marine World for April, since when public interest in this matter has increased, and attention has been drawn to the transportation difficulties involved. A few carloads of the coal were forwarded to Ontario as trial shipments, two going to Toronto, one to Ottawa and one to Cobourg, and the Ottawa Journal, which received one of the cars, stated that the freight bill was \$14.40 a ton, which it said "makes the price in Ottawa prohibitive." The present rate to Toronto on carload lots is \$12.70 a ton.

Interested parties have brought the question of freight rates to the front, and on April 10 a conference was held in Montreal, at which the desirability of a low rate for western coal was presented to Sir Henry Thornton, President, Canadian National Rys. In addition to representatives of coal operators in the Wabamun-Pembina, Saunders, Yellowhead and Drumheller fields in Alberta, the conference was attended by Premier Drury and Minister of Highways Biggs, of Ontario, and H. Stutchbury, an Alberta Government official. Sir Henry Thornton is reported to have said:—"We are in sympathy with the wishes of the operators, and if it is possible to offer a rate in accordance with their desires, it will be done. Meanwhile, the matter will be studied and an answer will be given at the earliest possible moment." Representations were also made to E. W. Beatty, President, C.P.R., and C.P.R. traffic officials.

A Montreal press dispatch of April 18 stated that a conference of C.N.R. and C.P.R. freight traffic officials had been held to discuss the possibility of putting in a rate which would allow Alberta coal to compete in the Ontario market, but that no information as to what, if anything, was decided, was obtainable.

Some of the numerous considerations entering into the traffic movement proposed were specified in our April issue, and a little consideration will make it evident that the matter is one requiring a great deal of study, and collecting of information, before a decision as to rates can be arrived at. In the meantime, tests with the western coal are being gone ahead with in the Ontario cities mentioned above, with results, so far, indicated as satisfactory.

Harvey S. McDougall, St. Clair, Mich., in renewing his subscription, writes: "I value Canadian Railway and Marine World very highly."

Railway Rolling Stock Orders and Deliveries.

The Belgo Paper Co. has ordered 12 forestry cars, 60,000 lb. capacity, from Canadian Car & Foundry Co.

St. Mary Cement Co., St. Mary, Ont., has received two 4-wheel switching locomotives (0-4-0-T) from Montreal Locomotive Works. Details of them were given in Canadian Railway and Marine World for January.

The Sydney & Louisburg Ry. has received 100 steel hopper coal cars, from Eastern Car Co., which will also supply additional cars from time to time, in pursuance of the railway's programme of replacement, which will give it an up to date line of coal carrying equipment.

Railway equipment manufacturers in the United States are still in receipt of large orders and their plants are all busy. The U.S. Department of Commerce states that 282 locomotives were shipped in March, while unfilled orders continued to increase during that month, there being 2,316 at March 31, compared with 2,220 at the end of Feb. 1923, and but 330 at the end of March 1922. During the first three months of 1923, 718 locomotives were shipped, compared with but 157 in the first three months of 1922. U.S. railways ordered 34,514 freight cars and 291 passenger cars in March. For the first three months of the year the number of freight cars ordered totaled 55,805, and passenger cars, 972.

Canadian National Railways.

Canadian Railway and Marine World for March and April gave very full particulars of the large orders given by the Canadian National Rys. this year for rolling stock. The contract prices are now available and are given in the accompanying table, with other particulars:—

No.	Description.	Builder.	Price.	Total.
8	Mikado locomotives	American Loco. Works	\$ 56,625.00	\$ 453,000.00
10	"	Can. Loco. Co.	66,500.00	665,000.00
35	"	Montreal Loco. Works	66,500.00	2,327,500.00
8	4-wheel switching locomotives	Lima Locomotive Works	40,000.00	120,000.00
8	3-wheel transfer locomotives	"	51,700.00	258,500.00
16	Mountain locomotives	Can. Loco. Co.	74,500.00	1,192,000.00
80	Steel standard sleepers	Can. Car & Foundry Co.	49,400.00	1,482,000.00
35	Steel first class cars	"	35,443.81	1,240,533.35
10	Steel mail cars	"	29,650.00	296,500.00
20	Steel baggage cars	"	24,750.00	495,000.00
10	"	National Steel Car Co.	24,750.00	247,500.00
50	Steel underframe express refrigerator cars	"	10,550.00	527,500.00
250	Freight refrigerator cars	American Car & Foundry Co.	3,182.11	783,027.50
1000	40-ton Steel frame box cars	Can. Car & Foundry Co.	2,550.00	2,550,000.00
1000	"	National Steel Car Co.	2,555.84	2,555,840.00
500	"	Eastern Car Co.	2,555.20	1,277,600.00
600	40-ton Steel frame automobile cars	Can. Car & Foundry Co.	2,625.00	1,575,000.00
400	"	National Steel Car Co.	2,625.00	1,050,000.00
100	Hart ballast cars	Can. Car & Foundry Co.	3,264.50	326,450.00
100	General service cars	Eastern Car Co.	2,950.00	295,000.00
100	"	Pressed Steel Car Co.	2,300.00	230,000.00
100	Hopper cars	Eastern Car Co.	2,730.00	273,000.00
5	Depressed centre flat cars	Can. Car & Foundry Co.	5,930.00	29,650.00
				\$20,250,600.85

After the table given above was prepared, the C.N.R. ordered 7 switching, or transfer, locomotives from Canadian Locomotive Co., as mentioned in Canadian Railway and Marine World for April, and have since ordered 5 steel, depressed center, flat cars from Canadian Car & Foundry Co.

The Canadian National Railways seven switching, or transfer, locomotives ordered from Canadian Locomotive Co., as mentioned in Canadian Railway and Marine World for April, will have the following principal details:—

Type	0-8-0
Weight in working order on drivers	242,750 lb.
Weight in working order of tender	167,650 lb.
Weight, total	410,400 lb.
Wheel base of engine, rigid	15 ft. 6 in.
Wheel base, engine and tender	53 ft. 4½ in.

Length over all	71 ft. 3¼ in.
Diam. and length of main driving journals	11 x 13 in.
Diam. and length of other driving journals	10 x 13 in.
Heating surface, fire box	235 sq. ft.
Heating surface, tubes	2497 sq. ft.
Heating surface, total	2732 sq. ft.
Superheating surface	602 sq. ft.
Type of boiler	Radial stayed
Working pressure	170 lb.
Number of tubes	228
Diam. of tubes	2 in.
Length of tubes	15 ft.
Number of flues	32
Diam. of flues	5½ in.
Grate area	56.5 sq. ft.
Diam. of driving wheels	56 in.
Tractive effort	52,329 lb.
Valves, type	Piston
Valves, diam.	14 in.
Cylinders, diam. and stroke	26 x 30 in.
Tender capacity, coal	12 tons
" capacity, water	7,500 imp. gall.
" tank, style	Water bottom
" trucks, style	4-wheel, equalizer
" truck wheels	Solid rolled steel
" truck wheels, diam.	30 in.
" truck wheels, diam. and length of journal	6 x 11 in.

These locomotives will be equipped with Young valve gear, Pyle National headlight, butterfly type fire doors, brick arches, Franklin driving box wedges, M.M.B. front ends, and Robinson superheaters.

The 5 depressed center flat cars which the C. N. Rys. have ordered from Canadian Car & Foundry Co., will be practically identical with those built by the latter company for the C.P.R., which were described and illustrated in Canadian Railway and Marine World for February, pg. 59. The chief dimensions will be as follows:—

Length over striking castings	43 ft.
" end sills	42 ft. 3 in.
Length of depressed platform portion	18 ft. 6 in.
Width over stake pockets	9 ft. 11½ in.
" side sill web	9 ft.
Height, top of rail to top of floor plate at ends	3 ft. 5½ in.
Height, top of rail to top of floor plate at center	2 ft. 4 in.

These cars which will have a capacity of 75 tons, and will be equipped with 4-wheel trucks, are designed for transportation of large machinery, the depressed center permitting a taller load to be carried within clearance limits of bridges, tunnels, etc.

The 8 first class passenger cars which are being built at the G.T.R. shops, Port Huron, Mich., for the Central Vermont Ry., will have the same specifications as the 35 first class cars ordered by Canadian National Rys. from Canadian Car & Foundry Co., which were published in our February issue.

The 20 milk cars, also being built at Port Huron for the Central Vermont Ry., will have the following chief dimensions:—

Length over end sills	41 ft. 7 in.
" striking plates	43 ft.
" inside	40 ft. 9½ in.
Width over side sills	9 ft. 6¾ in.
" inside	8 ft. 9½ in.
Height top of floor racks to ceiling	7 ft. 6½ in.
" rail to running board	13 ft. 11 in.

The milk cars will be of wood construction, with fish belly steel underframe and cross members. The roof will be of the turtle back design. Removable floor racks will be installed, and equipment will include Miner friction draft gear, Gould buffing device, Coleman bolster locking device, and Commonwealth steel trucks with 5 x 9 in. journals.

Canadian Pacific Railway.

The directors' annual report, published in Canadian Railway and Marine World for March, stated that the directors had made provision for additions to rolling stock as follows:—36 locomotives, 6 steel cafe-parlor cars, 6 steel buffet-parlor cars, 12 steel sleeping cars, 15 steel first class cars, 12 steel mail and express cars, 15 steel colonist cars, 300 75-ton coal cars, 300 41 ft. flat cars, 1,000 box cars, 300 automobile cars, 50 oil tanks, at a total cost of \$12,295,000.

Of the above, 16 Pacific type passenger locomotives were ordered from Montreal Locomotive Works, as stated in our February issue, the details of them being given in our March issue. The placing of orders for 6 steel cafe-parlor cars, 6 steel buffet-parlor cars, 15 steel first class cars, 12 steel mail and express cars, 300 75-ton coal cars and 300 41 ft. flat cars was announced in our April issue. We have since been advised officially that 20 mikado type freight locomotives have been ordered from Montreal Locomotive Works, and 50 oil tank cars, 6 single track steel snow ploughs, 1,000 box cars and 300 automobile cars, to be built at the company's Angus shops, Montreal, but up to the date of our latest advice no decision had been arrived at about ordering the 12 steel sleeping cars and 12 steel colonist cars.

The 10 Pacific type locomotives' general dimensions, etc., were given in our March issue. Following are those of the 20 mikado locomotives:—

Weight on drivers	235,000 lb.
" engine truck	28,000 lb.
" trailing truck	57,000 lb.
" total	320,000 lb.
Tender	225,000 lb.
Wheel base, driving	16 ft. 6 in.
" total, engine	35 ft. 8 in.
" engine and tender	68 ft.
Cylinders, diar. and stroke	25½ x 32 in.
Driving wheel, diar.	63 in.
Engine truck wheels, diar.	31 in.
Trailing truck wheel, diar.	45 in.
Journals, main	11½ x 21 in.
" other	10½ x 14 in.
" engine truck	7 x 13 in.
" trailing truck	9 x 14 in.
" tender truck	6½ x 12 in.
Boiler, type	Radial stay
pressure	200 lb.
Firebox, length and width	120½ x 84½ in.
Grate area	70.3 sq. ft.
Tubes, no. and diar.	198—2¼ in.
Flues, no. and diar.	43—5½ in.
Tubes and flues, length	18 ft. 6 in.
Heating surface, tubes	2,122 sq. ft.
" flues	1,140 sq. ft.
" arch tubes	43 sq. ft.
" firebox	274 sq. ft.
" total	3,579 sq. ft.
Tractive power	56,150 lb.
Factor of adhesion	4.18
Reverse gear	Ragonnet
Tender frame and box frame extension	Commonwealth cast steel
Tender truck wheels, diar.	36½ in.
Capacity, water	10,000 imp. gall.
Capacity, coal	14 tons

The 12 30 ft. compartment mail and express cars being built complete by Canadian Car & Foundry Co. will be of all steel construction, with wood and

canvas roof. The trucks will be of the Commonwealth cast steel type, with 5½ x 10 in. journals. The underframe will be of the fishbelly type between trucks, in conjunction with Commonwealth cast steel body bolster and end sills. Clasp brakes will be applied. The 6 buffet-parlor cars, the frames for which are being constructed by the Canadian Car & Foundry Co., and which will be finished at the C.P.R. Angus shops, will be of all steel construction. The journals will be 5 x 9 in. The 6 steel cafe-parlor cars, the 6 steel buffet-parlor cars and the 15 first class cars, the frames for which are being built by Canadian Car & Foundry

Co., and which will be finished at the C.P.R. Angus shops, will be of the same construction as the mail and baggage cars.

The 300 75-ton coal cars being built by Canadian Car & Foundry Co. will be 40½ ft. long inside. They will be of the Hart-Otis drop bottom type, will be of composite steel and wood body construction, and mounted on trucks having Andrews cast steel side frames and cast steel bolsters, with 6 x 11 in. journals. Miner A-18-S draft gear will be applied.

The 300 41 ft. flat cars being built by Eastern Car Co., will be 40½ ft. long. The trucks will be of the arch bar type,

with cast steel bolsters. Cardwell G-25-A draft gear will be applied.

The 50 oil tank cars being built at Angus shops will be of 10,000 imp. gall. capacity, and will be equipped with Commonwealth combination tank cradle body bolster, draft members and end sill casting. The trucks will be of the arch bar type, with cast steel bolsters. Journals will be 5½ x 10 in. Miner A-18-S draft gear will be applied.

The C.P.R., between March 15 and April 11, received 48 steel refrigerator cars from National Steel Car Corporation, and one Industrial self-propelled pile driver from F. H. Hopkins & Co.

Mainly About Railway People Throughout Canada.

Other Mainly About Railway People matter is given further on in this issue commencing on pg. 226.

Frederic William Alexander, who has been appointed District Engineer, British Columbia District, C.P.R., Vancouver, B. C., was born at Fredericton, N.B., Nov. 22, 1878, and entered railway service in June 1897, since when he has been, to May 1898, office boy, Chief Engineer's office, Bangor and Aroostook Ry., Houlton, Me.; May to Oct. 1898, chairman and rodman on maintenance, same road; Oct. 1898 to June 1900, levelman, same road; June 1900 to Sept. 1901, transit man, same road; Sept. 1901 to Feb. 1902, transit man on preliminary and location surveys, Fish River Rd., Maine; Feb. 1902 to Jan. 1903, Resident Engineer on Construction, same road, Eagle Lake, Me.; Jan. to May 1, 1903, levelman and topographer on preliminary and location surveys, Restigouche & Western Ry., in New Brunswick; May 14, 1903, to Dec. 4, 1904, transit man on maintenance, C.P.R., Moose Jaw, Sask.; Dec. 4, 1904, to Dec. 31, 1909, Division Engineer, same road, Calgary, Alta.; Jan. 1 to June 30, 1910, Division Engineer, same road, Cranbrook, B.C.; July 1, 1910, to April 15, 1913, Assistant District Engineer, same road, Calgary, Alta.; April 15, 1913, to March 1, 1923, District Engineer, same road, Calgary, Alta.

Edward Broderick, who has been appointed Right of Way Agent, Western Region, Canadian National Rys., Winnipeg, was born at Dublin, Ireland, April 18, 1884, and entered railway service in May 1898, since when he has been, to 1905, clerk, Great Central Ry. (England), at various points; July 9 to Dec. 1906, clerk, General Manager's office, Canadian Northern Ry., Winnipeg; Dec. 1906 to Dec. 1910, clerk, Right of Way Department, same road, Winnipeg; Jan. 1911 to Oct. 1920, chief clerk, same department; Oct. 1920 to March 1923, Right of Way and Property Agent, Canadian National Rys., Winnipeg.

Alexander Dick, Manager of Coal Sales, British Empire Steel Corporation, died suddenly in New York, April 12, after dancing in a restaurant. The body was removed to Montreal, accompanied by J. E. Dalrymple, Vice President of Traffic, Canadian National Rys., a personal friend, and the service there was attended by a number of transportation officials and others, among whom were: Alex. Johnston, Deputy Minister of Marine; R. M. Wolvin, President, and E. E. Merrill, General Manager of Steel Sales, British Empire Steel Corporation; G. H. Duggan, President, Dominion Bridge Co.; J. W. Norcross, Vice President and Managing Director, and W. E. Burke, Canada Steamship Lines; F. L.

Wanklyn, General Executive Assistant, Thos. Britt, Fuel Agent, C.P.R.; Thos. Robb, Shipping Federation of Canada; D. Campbell, Elder, Dempster & Co., and W. I. Gear, Robert Reford & Co. Interment took place at Springhill, N.S.

Hon. G. P. Graham, M.P. for Essex South, Ont., who has been acting Minister of Railways and Canals, since the late Hon. W. C. Kennedy was taken ill in August, 1922, has been appointed Minister. He has relinquished the Ministry of National Defence, to which Hon. E. M. Macdonald, M.P. for Pictou, N.S., has been appointed in an acting capacity, but continues, in the meantime, to act as Postmaster General, in the absence of Hon. Charles Murphy. Mr. Graham was Minister of Railways in the Laurier cabinet from Aug., 1907, until after the general election of 1911, when he was defeated in his home constituency, Brockville, Ont.

Charles Auguste deLotbiniere Harwood, K.C., who has been appointed Solicitor, Central Region, Canadian National Rys., Montreal, was born at Vaudreuil, Que., Aug. 2, 1869, and is the son of the seigneur of Vaudreuil. He was educated at St. Laurent College and Laval and McGill Universities, graduating with the degree of B.C.L. He was appointed a K.C. in 1911, and from Oct. 1920 to Feb. 1922, was Assistant Solicitor, and from Feb. 1922 to March 1923, Solicitor, G.T. R., Montreal. He is a member of the Antiquarian and Numismatic Society, and Historic Landmarks Association. From 1915 to 1918 he was President of the Canadian Patriotic Fund, Vaudreuil Branch, and in 1917 was Provincial Secretary of Naval Recruiting for Quebec. In 1912 he was a candidate for the Quebec Legislature. He has written several historical papers, including the Fort Garry Convention, 1870.

James W. Kimball, who has been appointed Superintendent of Boarding Cars, Western Region, Canadian National Rys., Winnipeg, was born at La Platte, Nebraska, May 13, 1871, and entered railway service in Sept. 1888, since when he has been, to 1890, telegraph operator, Burlington & Missouri River Rd., Waverly, Creopolis and Dorchester, Neb.; 1890 to 1891, operator and stenographer, in Assistant General Live Stock Agent's office, same road, South Omaha, Neb.; Nov. 1891 to 1893, stenographer and operator to General Manager, Montana Union Ry., Butte, Mont.; 1894, chief clerk to Vice President and General Manager, Butte, Anaconda & Pacific Ry., Anaconda, Mont.; 1895 to March 1896 Local Manager, J. T. Carroll Labor Co., Anaconda, Mont.; 1896, secretary to General Superintendent, Columbia & Western Ry., Rossland, B.C.; 1897 to 1899, Auditor,

same road, Trail, B.C.; March to Nov. 1900, Auditor, Construction Department, C.P.R., Winnipeg; 1901 to 1904, in real estate business, Butte, Mont.; 1905 to 1916, accountant and Assistant Superintendent, Boarding Car Department, Mackenzie, Mann & Co., Winnipeg; 1917 to 1918, accountant and Assistant Superintendent, Boarding Car Department, Canadian Northern Ry., Winnipeg; and from 1919, Superintendent, Boarding Car Department, Canadian National Rys., Winnipeg.

C. Kyle, Supervisor of Apprentices, Angus Shops, C.P.R., Montreal, died suddenly at his home, April 22, shortly after returning from church. He was born at Toronto in 1856, and entered railway service in the Mechanical Department of the Toronto, Grey & Bruce Ry., which was later absorbed by the C.P.R. He subsequently served as Locomotive Foreman at Havelock, Chapleau and North Bay, Ont., and in 1898 as Master Mechanic at Montreal, and was transferred to St. John, N.B., in 1907, returning to Montreal as Supervisor of Apprentices, Angus shops, in 1917.

Sir Augustus Nanton, one of the C.P.R. directors, and President, Winnipeg Electric Ry., returned to Canada by the C.P.R. s.s. Montclare, April 14, after a European trip.

Miss Norma Niblock, aged 15, daughter of D. B. Niblock, Special Ticket Auditor, Canadian National Rys., Toronto, and granddaughter of the late John Niblock, for many years Superintendent, C.P.R., at Medicine Hat and Calgary, was the winner in a beauty contest, held by Rodolph Valentino, in Toronto Arena, recently.

Donald E. Ross, who has been appointed Traffic Agent, Canadian National Rys., Shanghai, China, was born at Winnipeg, Feb. 11, 1895, and entered transportation service in 1911, since when he has been, to 1912, mail clerk, Freight Department, Canadian Northern Ry., Winnipeg; 1914 to 1915, clerk, Freight and Passenger Department, same road, Vancouver, B.C.; 1916 to 1918, on military service overseas; 1919 to 1921, Soliciting Freight Agent, Canadian National Rys., Vancouver, B.C., and from 1922, Traffic Representative, latterly Traffic Agent, C.N.R., Shanghai, China.

J. G. Rutherford, C.M.G., one of the members of the Board of Railway Commissioners, is still at the Pacific coast, convalescing after his recent severe illness, and is not expected to be able to return to Ottawa for several weeks.

Lady Thornton, wife of the President of the Canadian National Rys., and her daughter, have been spending three weeks in Algenciras, before returning to England.

Canadian National Railways Betterments for 1923.

The C.N.R. management proposes to continue this year works which were uncompleted at the end of 1922, and to undertake new works, of which the larger items are given below:—

Halifax & South Western Ry.—Replacement of timber trestle, 257 ft. long, with concrete culvert, to fill at Puddle River, mile 27.4 Chester Subdivision. Ballasting on Liverpool and Chester Subdivision.

Canadian Government Rys., Eastern Lines.—Paving team tracks with granite blocks at deep water terminals, Halifax. Dredge turning basin at Borden, P.E.I., to provide sufficient depth of water for operation of car ferry at all stages of tide. Completion of work on standardization of gauge between Summerside and Tignish, P.E.I. Erect copper wire and provide telephone train dispatching equipment between Campbellton and Mont Joli, to facilitate handling of train movements. Extensions of store building at St. Malo.

Canadian Government Rys., Western Lines, National Transcontinental Ry.—Completion of construction of a boarding house for employes at Sioux Lookout. Extension and rearrangement of trackage at Redditt, and provision of 300-ton mechanical coaling plant, standard sand house, depressed cinder-pit and replacement of turntable with one of greater length. Replacement of machinery at Transcona shops, and also provide additional machinery. Replacement of frame trestle 854 ft. long, with concrete culvert and fill, at mile 46.7 Quibell Subdivision.

Canadian Northern Ry., Eastern Lines.—Provisions of interlocking plant at Harrowsmith. Provision of 5-stall extension to locomotive house at Capreol. Installation of additional equipment at Leaside locomotive and car shops, and provision of heating, lighting and shelving in stores building extension. Provision of scrap reclaim building and plant at Toronto. Reconstruction of telegraph pole lines on various subdivisions. Replacing pile trestle, 222 ft. long, with concrete and steel bridge at Indian River, mile 98.3 Pembroke Subdivision. Replacing timber trestle, 555 ft. long, with concrete culvert and fill, at mile 110.0 Ruel Subdivision. Replacing timber trestle, 180 ft. long, with concrete abutments and steel span, at Midway Creek, mile 147.3 Ruel Subdivision. Replacing timber trestle, 240 ft. long, with steel span, concrete abutments and fill, at Muskego River, mile 0.34 Oba Subdivision. Replacing timber trestle, 283 ft. long, with steel span, concrete abutments and fill at Opishkanogama River, mile 0.72 Oba Subdivision. Continuation of replacement of 1,300 ft. trestle across Kiosk-Koqui Lake, mile 20.4 North Bay Subdivision.

Canadian Northern Ry., Western Lines.—Revision of line between mile 48 and 50, Kashabowie Subdivision. Provision of additional machinery and replacements of machines by those of improved type at Fort Rouge shops. Extension and rearrangement of yard at Brandon. Provision of a reservoir for water supply at Kipling. Construction of a subway at Fairford Street, Moose Jaw. Provision of water supply at Avonlea. Construction of freight shed at Dauphin. Completion of rearrangement of yard and erection of coal dock, sand house, ashpits, and sewer lines at Humboldt, commenced during 1922. Revision of

alignment between Horburg, mile 132, and Saunders, mile 156, Brazeau Subdivision. Filling trestles on various subdivisions. Ballasting on various subdivisions. Provision of telephone train dispatching service between Yorath and Kindersley; North Battleford and Saskatoon; Saskatoon and Yorath Jct.; Humboldt and Saskatoon. Reconstruction of telegraph pole lines on various subdivisions. Extension of stores buildings at various locations. Provision of additional buildings and facilities at Jasper Park summer resort.

Grand Trunk Pacific Ry.—Completion of freight car repair shops at North Edmonton terminals. Provision of snow shed, 600 ft. long, at mile 1075.5 Tete Jaune Subdivision. Filling trestles on various subdivisions. Ballasting on various subdivisions. Provision of stores building and locomotive foreman's office at Rivers. Provision of oil handling equipment at Smithers and Prince George. Acquisition of and improvements to Minaki Inn. Improvements and additions at Fort Garry Hotel, Winnipeg. Provisions of water supply and installation of ventilating system at Macdonald Hotel, Edmonton.

Hudson Bay Ry.—Provisions of 2-stall locomotive house at Pas, and general improvements to roadbed and track.

Co-ordination, Eastern Lines.—Installation of 2 additional signals and low voltage junction switch operating machine, in connection with existing automatic signals at Chaudiere. Provision of track connection at Joffre. Completion of terminal facilities, rearrangement of yard, additional trackage and paving of roadways at Quebec. Provisions of additional yard trackage at Limoilou. Double tracking on St. Charles River bridge and approaches thereto between Limoilou and Parent Square, Quebec. Construction of 6 mile connection between C.G.R., near Dombourg, and C.N.R. at Donnacona, with a view to abandonment of 25.7 miles of Canadian Northern Ry. between Donnacona and Allenby Jct. Completion of connection between the C.N.R. and G.T.P. and improvements of water supply at Hawkesbury. Continuation of work paving team roadways at Cherry St. yard, Toronto. Completion of installation of 75 ft. turntable at Howland. Construction of spur track at Brockville between G.T.R. yard and C.N.R. track. Construction of 60-car capacity storage siding, at Washago. Completion of connection between G.T.R. and C.N.R. and track alterations at Napanee, also construction of a new joint station at Napanee. Provision of new baggage room at North Bay.

Co-ordination, Western Lines.—Completion of initial development of yard and locomotive facilities at Neebing. Completion of double tracking from Port Arthur to Kakabeka Falls. Provision of additional sidings between Kakabeka Falls and Mokomon, and installation of automatic signals. Double tracking on 0.5% grade from Mokomon, mile 32, and mile 35.6, Kashabowie Subdivision. Completion of grade and alignment revision at Rowan, mile 35 to 38, Kashabowie Subdivision. Rearrangement of tracking at Portage la Prairie to provide double track through town and eliminate interlocking plant at east end of town. Construction of 2 Y connections at Yorkton, elimination of interlocking plant at present crossing of C.N.R. and

G.T.P., abandonment of C.N.R. Y at mile 24 Tonkin Subdivision, and removal of C.N.R. locomotive house and water tank to the G.T.P. Completion of connection between G.T.P. and C.N.R. at Lampman, and moving C.N.R. water tank to Junction Point. Provisions of water supply at Lampman, to serve C.N.R. and G.T.P. Completion of connection between C.N.R. and G.T.P. at Regina, and co-ordination of locomotive facilities at G.T.P. terminal, also improvement of local freight facilities there. Construction of connection between G.T.P. and C.P.R. at Saskatoon, and provision of automatic signals. Construction of connection between G.T.P. and C.N.R. at Ryley, and provision of automatic signals. Completion of installation of automatic signals for co-ordination connections built at Alix during 1921 and 1922. Completion of south connection between C.N.R. and G.T.P. at Camrose, also provision of automatic signals, additional siding extension to station and connection to city water supply. Completion of interlocking plant at North Edmonton. Provision of automatic signals for connection between the C.N.R. and G.T.P. at Magnolia. Consolidation of G.T.P. terminal facilities at Jasper, with C.N.R. terminal facilities at Lucerne, involving construction of 7-stall extension to locomotive house, coaling plant and sand house, ashpit, additional yard tracks, cottages and dwellings for employes, car, water and steam lines.

The St. John River Bridge Case.

Mr. Justice Grimmer reserved judgment, at St. John, N.B., recently in the case of the New Brunswick Attorney-General vs. the C. P. Ry. Co., and its subsidiary, which owns two bridges over the St. John River at the reversing falls, the arguments in which were concluded in the Chancery Court at the end of March. The province contends that the Dominion Government has no jurisdiction over the St. John River, it being covered by the Ashburton treaty of Aug. 9, 1842. Provincial control was challenged for the first time in 1885, when an attempt was made to exercise jurisdiction through an amendment to an act; and in the Revised Statutes of Canada for 1886, the St. John River was not mentioned as being among the navigable waters under Dominion jurisdiction. A Privy Council decision of Oct. 12, 1918, held that the Dominion Waterways had no jurisdiction over a question concerning the St. Lawrence River, which with the St. John River, was specifically dealt with by the Ashburton Treaty. If the court decides that the St. John River is under the New Brunswick Government's jurisdiction, the matter of the new bridge at the reversing falls, the erection of which was the precipitating cause of the action, may have to be reconsidered. This bridge was built by the C.P.R. in 1920, with the approval of the Board of Railway Commissioners and the Public Works Department, after a number of hearings, in which some marine interests contended that the bridge would interfere with navigation. The action is brought for the purpose of securing a declaration that the N.B. Government has jurisdiction over the St. John River, and to secure an order for the removal, or the raising of the bridge, that it may not obstruct navigation, which the C.P.R. claims it does not.

British Columbia Rate Equalization Appeal.

British Columbia's appeal from the Board of Railway Commissioners' decision in the equalization of freight rates case came into prominence on April 17, when J. A. Clark, Conservative member for Burrard, B.C., moved in the House of Commons: "That, in the opinion of this House, all unfair and unjust discrimination against British Columbia, as exemplified in the mountain scale of freight rates, should be rescinded, and the special reduction made by the restoration of the Crownsnest rates, on the basic production of the prairie provinces, be extended to the basic production of all other provinces of confederation."

As stated in Canadian Railway and Marine World for April, Mr. Clark had a resolution dealing with rate matters on the order paper for some time, which the Speaker thought might be sub judice on account of the appeal before the Cabinet. On April 17, the Speaker announced that he had concluded that the question was not sub judice, and it was only after that decision that Mr. Clark could move his resolution. The resolution introduced on April 17, as given above, differed materially from that which Mr. Clark had on the order paper previously, which was as follows: "That, in the opinion of this House, railway rates westward from the prairie provinces should be reduced to an equality with railway rates eastward from said provinces, for similar goods and distances."

In support of his resolution, Mr. Clark said he fully admitted it was a strange proceeding to bring up such a motion in the House, in apparent violation of the Board of Railway Commissioners' jurisdiction, but excused himself on the ground that as the Government, in 1922, had undertaken to put the Board to one side in dealing with the Crownsnest agreement, it was only fair to expect that as much would be done for British Columbia as was done for the prairie provinces. He said that if the Government would withdraw the legislation, passed in 1922, with reference to the Crownsnest agreement, he would be quite willing to drop his resolution and have the whole matter dealt with by the Board. He then reviewed the familiar arguments designed to show that the claim that B.C. should pay higher rates, on account of alleged higher railway construction costs, higher operating costs, and lower traffic density, was fallacious, and stated that, as W. B. Lanigan, General Freight Traffic Manager, C.P.R., had quoted one of his predecessors, the late Geo. Olds, to the effect that freight rates are determined by "conditions, circumstances and competition," he did not see why costs and traffic density should have anything to do with rate levels. He argued that if rates were equalized in favor of B.C., it would benefit all Canada. Hon. S. F. Tolmie, Conservative, Victoria City, B.C., former Minister of Agriculture, seconded the resolution, and advanced arguments similar to Mr. Clark's to support it.

The acting Minister of Railways, Mr. Graham, in opposing the resolution, said that the Government's action in dealing with the Crownsnest rates in 1922 was not an interference with the Board of Railway Commissioners, as the circumstances demanded legislation. He said that the resolution was ill-advised, because the appeal was before the Cabinet in a half-argued state, with remaining argument to take place at the end of the session.

The leader of the Opposition, Mr. Meighen, in supporting the resolution, took issue with Mr. Graham as to the Government's action on the Crownsnest matter, and asked how it could expect people or communities to go to the Board with grievances, when it was evident to them that the Board was tied hand and foot by political action. E. M. Macdonald, Pictou, N.S., minister without portfolio, accused Mr. Meighen of inconsistency, and thereafter the debate was more concerned with politics than with rates, it being charged by Government supporters that the resolution was introduced for political advantage only, and, by the Opposition, that the Government was willing to interfere with rates when it saw political advantage to be derived, but unwilling when such potential advantage was not evident. H. Marler, Liberal, St. Lawrence, Que., said that if the resolution were passed, Parliament would simply be making itself a judicial tribunal, to make and unmake rates at will. He claimed that if such resolutions could be passed, the Board of Railway Commissioners had better be done away with, and the railways be thrown at once into the political melting pot, and he said that, outside of Sir Henry Drayton, no one in the House knew anything of consequence about freight rates and the considerations on which they are based, and that the House was not, therefore, competent to discuss them. H. H. Stevens, Conservative, Vancouver Center, spoke at length in favor of the resolution, and the Minister of Public Works, Dr. J. H. King, Kootenay East, B.C., said that Mr. Clark's action in introducing the motion was opposed to his province's best interests. A. W. Neill, Progressive, Comox-Alberni, B.C., endorsed this, pointing out that if the resolution were defeated, the Cabinet would be in a good position to throw out the appeal now before it. The most illuminating part of the proceedings was when Mr. Neill, in support of his claim that the resolution was a purely political move, showed how Mr. Clark's first resolution, which was on the order paper for many weeks, and which, as is evident on reading it, did not provide for lower eastbound rates from B.C., would add immensely to the discrimination claimed against B.C., instead of removing it, and when he read resolutions of protest from Vancouver and other boards of trade pointing this out.

The resolution was supported by most of the Conservatives and opposed by the Government and Progressive members, and was declared lost without a vote being taken.

Contracts, etc., Limiting Carriers' Liability.—The Board of Railway Commissioners issued a circular recently, requesting railways to file, by May 1, copies of all forms, contracts or releases in use which in any way limit the liability of the company, including pass forms and circus contracts, but omitting passenger tickets, baggage checks and bills of lading.

Frank J. Watson, Freight Traffic Manager, Canadian National Rys., Montreal, writes:—"Canadian Railway and Marine World is certainly an up-to-date publication. The only fault I find with it is that it gives too much for the money, and covers such a broad field that it is impossible for the busy railway man to digest all he would like."

American Railway Association Mechanical Division Meeting.

The American Railway Association, Mechanical Division, embracing the former Master Car Builders and Master Mechanics Associations, will hold its annual meeting at Orchestra Hall, 220 South Michigan Ave., Chicago, Ill., on June 20, 21 and 22, when reports from the following committees will be presented and discussed:—General; nominating; arbitration; brakes and brake equipment; car construction; couplers and draft gears; design of shops and engine terminals; electric rolling stock; loading rules; locomotive and car lighting; locomotive design and construction; prices for labor and materials; safety appliances; specifications and tests for materials; tank cars; wheels.

Individual papers will be presented as follows:—The development of the locomotive, by Samuel Vauclain, President, Baldwin Locomotive Works. The development of railway cars, by E. F. Carry, President, Pullman Co. Increasing of locomotive mileage, by C. F. Giles, Superintendent, Machinery, Louisville & Nashville Rd. Training of apprentices and supervising foremen, by John Purcell, Assistant to Vice President, Atchison, Topeka & Santa Fe Ry.

Opportunity will be given for a free discussion of the following general subjects:—Co-operative research; economies from modern shop machinery; handling of material on car repair tracks; modern repair track facilities; possibilities for increased efficiency of modern locomotives; shop management problems of today.

The meeting will be addressed either personally, or by papers, on interesting subjects by the following railway executives:—R. H. Aishton, President, American Railway Association; W. W. Atterbury, Vice President, Pennsylvania System; C. H. Markham, President, Illinois Central Rd.; W. B. Storey, President, Atchison, Topeka & Santa Fe Ry.; Sir Henry Thornton, President, Canadian National Rys.

Toronto-Hamilton Electric Railway Project.

Since the article on page 238 of this issue went to press, a deputation from municipalities between Toronto and Oakville, headed by the Mayor of Oakville, which waited on Premier Drury on April 25, asked authority to build an electric railway between Hamilton and Oakville, and requested that bonds of Mimico, New Toronto and Port Credit Towns and Etobicoke Tp., deposited with the Hydro Electric Commission of Ontario, be retained. It was stated that a new line between Toronto and Port Credit would be built on private right of way. The Premier replied that if the Hydro Electric Power Commission would ask the Government to pass an order in council, to let the work go on, it would be done, but in regard to linking up with the line owned by the City of Toronto between Toronto and Port Credit, legislation would have to be sought next year. He pointed out, in regard to the line from Oakville west, that the municipalities did not want to go on with it, and he considered they should get their bonds back if they asked for them.

The Irony of Fate.—A Windsor, Ont., brakeman, just after being killed by a train, won an automobile in a raffle.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Steamship Lines Ltd.—A. A. AULD, whose appointment as Manager, New Ontario Dock, Sault Ste. Marie, Ont., was announced in our last issue, has also been appointed Agent, Canada Steamship Lines Ltd., there.

E. C. BOLAND, heretofore Soliciting Freight Agent, has been appointed District Freight Agent, Toronto, vice L. J. Burns, appointed General Freight Agent, Montreal.

L. J. BURNS, heretofore District Freight Agent, Toronto, has been appointed General Freight Agent. Office, Montreal.

Canadian Government Merchant Marine Ltd.—JOHN CARRALL, heretofore dock agent, Seattle, Wash., has been appointed dock agent, Grand Trunk Pacific Dock, Victoria, B.C., vice James McArthur, transferred to Vancouver, B.C.

JAMES MCARTHUR, heretofore dock agent, Grand Trunk Pacific Dock, Victoria, B.C., has been appointed dock agent, Grand Trunk Pacific Dock, Vancouver, B.C., vice F. D. Nealon, transferred.

W. S. STETSON has been appointed acting dock agent, Seattle, Wash., vice John Carrall, dock agent, transferred to Victoria, B.C.

A. M. TIDEY, heretofore chief clerk, C.G.M.M. dock, Vancouver, B.C., has been appointed dock agent, C.G.M.M. dock there.

C. G. TOWNSEND, heretofore in charge of the C.G.M.M. dock, Vancouver, B.C., has been appointed Superintendent of Docks, there, with jurisdiction over C.G.M.M. and Grand Trunk Pacific docks.

Canadian National Rys.—R. N. CARD has been appointed Division Freight Agent, Port Arthur, Ont., vice L. A. Fonger, appointed District Freight Agent, Saskatoon, Sask.

L. A. FONGER, heretofore Division Freight Agent, Port Arthur, Ont., has been appointed Division Freight Agent, Saskatoon, Sask., vice W. A. B. Russell, appointed Division Freight Agent, Ottawa.

R. C. GADSBY, heretofore Travelling Passenger Agent, Toronto, has been appointed City Passenger Agent, there, vice W. J. Moffatt, appointed General Agent, Passenger Department, Toronto.

R. JOHNSTON, heretofore Assistant General Purchasing Agent, G.T.R., Montreal, has retired on pension.

J. A. LEGER, heretofore acting Locomotive House Foreman, has been appointed Locomotive House Foreman, Newcastle, N.B.

H. McEWAN has been appointed Division Freight Agent, Prince Rupert, B.C., and deals with freight traffic matters, formerly handled by G. A. McNicholl, heretofore Assistant General Freight and Passenger Agent there, who has been appointed General Passenger Agent, Vancouver, B.C.

R. F. McNAUGHTON, District Passenger Agent, Prince Rupert, B.C., now deals with the passenger traffic matters, formerly handled by G. A. McNicholl, heretofore Assistant General Freight and Passenger Agent there, who has been appointed General Passenger Agent, Vancouver, B.C.

G. A. McNICHOLL, heretofore Assist-

ant General Freight and Passenger Agent, C.N.R. and Grand Trunk Pacific Coast Steamship Co., Prince Rupert, B.C., has been appointed General Passenger Agent, both companies, Western Region, Jasper, Alta., and west, vice Osborne Scott, appointed General Passenger Agent at Winnipeg. Office, Vancouver, B.C.

J. D. MACNUTT, heretofore Assistant Superintendent, Halifax Division, Maritime District, has been appointed Assistant Superintendent, Campbellton Division, Atlantic Region, vice H. V. Musgrave, appointed Assistant Superintendent, Halifax Division. Office, Campbellton, N.B.

W. J. MOFFATT, heretofore City Passenger Agent, G.T.R., Toronto, has been appointed General Agent, Passenger Department, C.N.R., Toronto.

H. V. MUSGRAVE, heretofore Assistant Superintendent, Campbellton, N.B.,



W. LeB. Ross,

Treasurer, Western Region, Canadian National Railways.

has been appointed Assistant Superintendent, Halifax Division, Maritime District, Atlantic Region, vice J. D. MacNutt, transferred.

C. S. PUSHIE has been appointed Relieving Superintendent, Atlantic Region.

W. A. B. RUSSELL, heretofore Division Freight Agent, Saskatoon, Sask., has been appointed Division Freight Agent, Ottawa, vice E. J. Hilliard, assigned to other duties.

Other appointments made in connection with the co-ordination of the Canadian National Rys., consequent on the amalgamation of the G.T.R., are given on an earlier page of this issue, under "Further Co-ordination of G.T.R. with Canadian National Rys."

Canadian Pacific Ry.—J. E. H. DAVIES, heretofore chief steward, Royal Alexandra Hotel, Winnipeg, has been appointed Manager, Banff Springs Hotel, Banff, Alta.

Major W. M. KIRKPATRICK, M.C.,

heretofore General Foreign Freight Agent (Atlantic Service), Montreal, has been appointed Foreign Freight Traffic Manager. Office, Montreal.

J. U. LEMIEUX, heretofore chief clerk to City Freight Agent, Quebec, Que., is reported to have been appointed Contracting Freight Agent there.

W. T. MARLOW, heretofore Foreign Freight Agent in charge of import and export freight via Atlantic ports, Montreal, has been appointed General Foreign Freight Agent, vice Major W. M. Kirkpatrick, M.C., appointed Foreign Freight Traffic Manager. Office, Montreal.

G. J. O'DOWD, heretofore City Freight Agent, Quebec, Que., has been appointed District Freight Agent there.

Quebec, Montreal & Southern Ry.—F. P. GUTELIUS, whose appointment as Resident Vice President, Delaware & Hudson Co., Montreal, was announced in our last issue, has also been appointed Vice President, Quebec, Montreal & Southern Ry., and Napierville Jct. Ry., vice C. S. Sims, resigned. Office, 286 St. James St., Montreal.

United States Railways' Financial Results.

The Class 1 U.S. railways did not have as good a month in February as in January, the net operating income earned in February being only \$38,903,000, compared with \$60,544,700 in January, and the rate of earning on an annual basis being but 3.73% on tentative valuation, compared with 5.54% in January. Gross revenues in February were \$446,538,000, an increase of 11.3% over Feb. 1922, and operating expenses, \$375,707,600, were 15.8% more than in Feb. 1922.

For the first two months of 1923, operating revenues totalled \$948,494,500, an increase of 19% over the first two months of 1922; and operating expenses, \$784,280,900, increased 18.5% over those for the first two months of 1922. The net operating income for Jan. and Feb. 1923 was \$99,619,900, compared with \$77,346,500 for Jan. and Feb. 1922, the earnings for the first two months this year being at the rate of 4.66% on an annual basis, compared with 3.69% in Jan. and Feb. 1922.

Eastern U.S. railways in February earned a net operating income of \$17,248,300, representative of an annual return of 4.13%, compared with 7.20% in Feb. 1922; operating revenues were 10% more than in Feb. 1922, and operating expenses 18.6% more. In the southern district, the railways earned net operating income of \$10,531,900, or at the annual rate of 6%, compared with 4.16% in Feb. 1922. Operating revenues increased 19.3% and operating expenses 15%. In the western district the net operating income was \$11,122,800, representing an annual earning rate of 2.47%, compared with 2.54% in Feb. 1922. Operating revenues increased 10%, and operating expenses 12.3%. Traffic on all U.S. roads throughout March and April has been heavy, and favorable earnings throughout the spring and summer are anticipated.

W. R. Ingram, Manager, Transportation Department, Swift Canadian Co., Toronto, writes: "Canadian Railway and Marine World always contains a lot of good and valuable information."

Locomotive Stoker Applications on Canadian National Railways.

Canadian Railway and Marine World for January, gave on pg. 29, some details concerning the application of duplex locomotive stokers to Canadian National Rys. locomotives at the Transcona, Man., shops. These stokers are being placed on mikado locomotives 3390-3398, inclusive, and no. 3400, and on 5 heavy consolidation locomotives. As stated in that article, the C.N.R. received from the builders in 1921 one mikado, no. 3402, class S-1-e, equipped with a stoker; and locomotives 3390-3401 were received with the deck castings suitable for stoker application, and with the tender also partially arranged to take the stoker conveyor. This relieved the railway shops of a portion of the work involved in a stoker application, but in spite of the

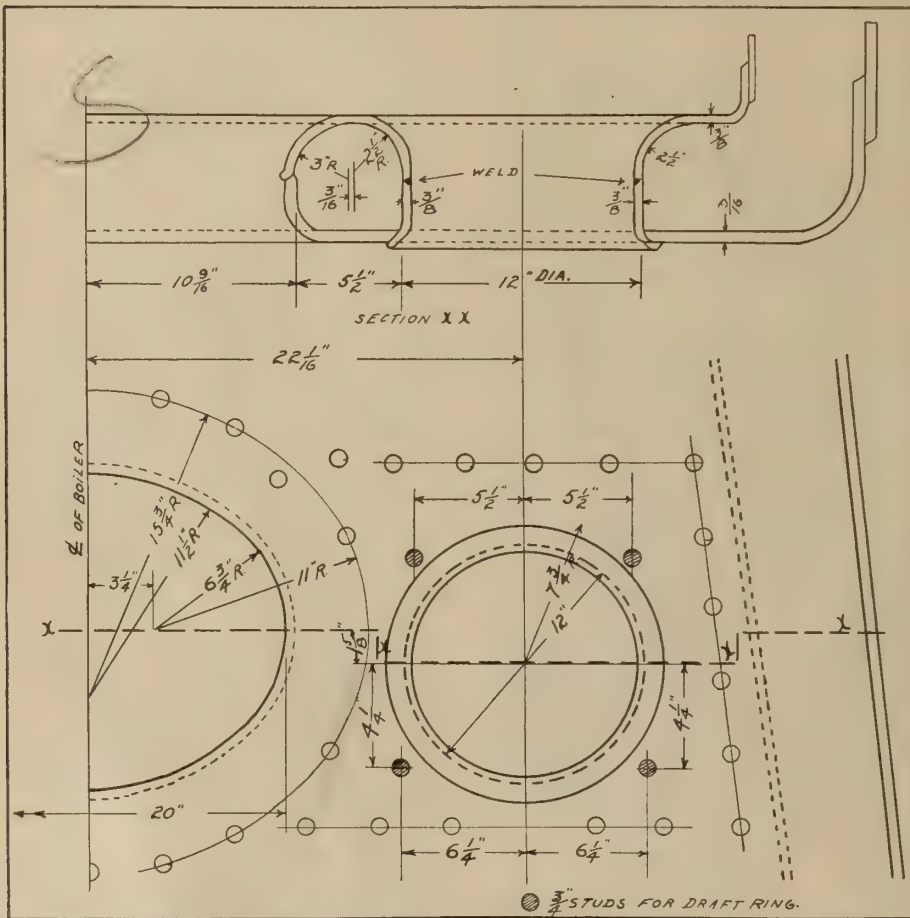
door sheet alterations, on locomotive 3402 the stoker tubes were very close to the fire door opening, so that trouble developed through the door sheet cracking between the door opening and the tube holes. To overcome this, a departure was made from previous practice by using flanged tube holes, the stoker tubes being set out farther from the fire door opening, to permit of this being done. Details of this design are shown in the accompanying illustration. It is anticipated that the method used will overcome the trouble experienced on no. 3402, although the first application of this style of tube has not been in service sufficiently long to demonstrate whether or not this will be the case. New door sheets were applied, flanged for the tube

operated, and dimensions of the mikados and consolidations being equipped, were given in Canadian Railway and Marine World for Jan., pg. 29, and an illustration showing in detail the arrangement of the duplex stoker and the method of its application to a locomotive was given in Canadian Railway and Marine World for Dec., 1922, pg. 600.

We were officially advised recently that the last of the 10 mikado locomotives to be equipped with stokers was done during February, and that all the 10 are in service; that the first of the N-1-a class consolidations, no. 2404, was turned out equipped with a stoker and went into service Feb. 19; that the second consolidation to be equipped, no. 2400, went into service on March 6; that no. 2402 was being equipped in March, and that nos. 2401 and 2403 would follow very soon thereafter, completing the installation of stokers on the 5 consolidations.

Ticket Thefts on the C.P.R.

In connection with the alleged theft of tickets from the C.P.R. and their alleged illegal sale, for which Max Portugal, a Winnipeg storekeeper, was sentenced to three years imprisonment recently, Ira Gosling, a C.P.R. employe, who was arrested at Vancouver, and taken to Winnipeg for trial, was allowed out on suspended sentence, April 6. It was stated that he was not involved in the conspiracy to steal the tickets in which Portugal was concerned. Philip Greenberg, another Winnipeg storekeeper, was before a Winnipeg court on March 26, and was remanded. A Winnipeg press report of April 4 stated that there had been a very considerable suspension of C.P.R. employes following the investigations, including conductors running out of Winnipeg, Brandon and Saskatoon. C. Murphy, General Manager, Western Lines, is reported to have stated on April 5, that all investigations had been completed, that there were no C.P.R. employes being prosecuted, and that the entire list of dismissals included 19 train conductors, 8 sleeping car conductors and 2 porters. The story that about \$5,000,000 had been stolen annually for the last three or four years was ridiculous.



Details of Stoker Application to Locomotive 3402, Canadian National Rys.

preparatory constructional features, the alterations required in equipping the mikados were of some magnitude.

For the tender application, the water bottom under the coal space was reduced to accommodate the stoker conveyor by a space approximating 300 imperial gall. in capacity, and new deck, sliding plates and angle tracks for the conveyors were installed, with the coal grates set back to suit the stoker arrangement. The diaphragm plates of the vestibule cabs were not changed to the design as used on the original stoker-equipped locomotive, 3402, as it was found that the standard diaphragm arrangement for hand-fired locomotives could be worked in. As stated, the deck castings were provided with lugs and seats for the stokers, when the locomotives were built, and only minor alterations were necessary. In connection with backhead and

holes and fire door opening; the back heads had the tube holes cut out and the tubes were fabricated from 3/8 in. plate, rolled and welded, and belled into the back heads. Some rearrangement of the usual back head fittings was necessary. To better suit the conditions created by the stoker application, the butterfly type, air-operated, fire doors were removed, and replaced by vertical air-operated doors. The vertical grate shaker cylinders were relocated, extensions or wings being applied to the rear expansion plate to carry them, set far enough out to permit the stoker to be installed between them. Only slight changes were required in the ash pan, and were in the nature of extensions at the back corners, to accommodate the grate shaker operating rods in their new locations.

Particulars of the districts in which the stoker equipped locomotives will be

"Canada's Grain Trade.—The diversion of the grain traffic of the prairie provinces to United States seaports for export, and the suggested remedy in the use of the National Transcontinental Ry., for the purposes for which it was built," is the title of a booklet which has been issued containing a reprint of letters written to the Montreal Gazette by J. G. Scott, ex-General Manager, Great Northern Ry. of Canada and Quebec and Lake St. John Ry., and formerly President, Quebec Board of Trade.

American Railway Association.—J. M. Egan has been appointed Chairman of the Chicago Operating Committee of the A.R.A. Car Service Division, and also Manager, Refrigerator Department, vice J. J. Pelley, resigned, on his appointment as General Manager, Illinois Central Rd. He is a nephew of John M. Egan, who was the first General Superintendent of the C.P.R. at Winnipeg, and later President, Central of Georgian Ry.

A Canadian's Peruvian Railway Contract.

By C. Noel Wilde, Assistant Canadian Trade Commissioner.

For some years past the Peruvian Government has been considering the development of the natural resources of the Republic by means of an extensive network of railways, and the construction of port and harbor works at various points on the Pacific coast. This question, which presents certain difficulties on account of the physical nature of the country to be traversed and the cost of the work involved, has taken practical shape through the granting by the Government to R. W. Dunsmuir, formerly of British Columbia, of a concession for the construction of the railways, port and harbor works referred to, and also for their operation for 45 years. The agreement under which this concession is granted has, it is said, at the time of writing, been passed by the Peruvian Chamber of Deputies, subject to minor alterations, and now only awaits confirmation by the Senate before becoming law. It consists of 40 articles, which lay down the route of the railways, the conditions under which they are to be built, and their method of operation; grants franchises, concessions, and preferential rights; regulates questions of tariffs, passes, fares, etc.; and also makes stipulations in regard to transfers of property, guarantees, and arbitration. There are also stipulations in regard to granting free right of way and land concessions, and detailed conditions for the purchase and operation by the concessionaire of the Peruvian Government tobacco monopoly, the revenue from which has hitherto been devoted to public works of the Republic.

The railways to be built are of a total length of 3,539 kilometres, or about 2,200 miles, as follows:—

	Km.
Chuquicara to Cajabamba, Cajamarca and Jaen	532
Canon de Pato to Recuay	125
Recuay to Tambo del Sol, approximately	300
Tambo del Sol to Pucallpa (still to be constructed)	315
Mejorada to Huancavelica and Ayacucho	251
Ayacucho to Abancay and Cuzco	534
Lurin to Pisco	200
Pisco to Huancavelica	280
Huacho to Supe and Tablonas, and Chiarpo to Guadalupe and El Combo	562
Branches to Pachitea and Huallaga, approximately	440
Total	3,539

The estimated cost of these lines is 21,180,000 Peruvian pounds, equal to about \$85,000,000 at present rates of exchange, and the work is to be completed within 15 years from the ratification of the agreement.

The Peruvian tobacco monopoly, the purchase and control of which for 33 years forms an essential feature of the scheme, at present provides a net revenue in excess of 500,000 Peruvian pounds a year, and allowing for an annual increase at the same rate as has taken place in the past, it is estimated that the total net revenue during the period of the concession will amount to over 51,000,000 Peruvian pounds, or an average of 1,560,000 Peruvian pounds a year. This sum is earmarked for the payment of a portion of the cost of construction, the balance to be provided by the concessionaire; it is estimated, however, that the revenue from the tobacco monopoly will at least cover the cost of construction by the time the concession expires, and will also provide for any deficit in operation until the railways become self-supporting. For the control

of the tobacco monopoly for the period stated, the concessionaire is to pay the Government 1,245,000 Peruvian pounds immediately.

The concessionaire receives free a grant, in perpetuity, of alternate blocks of Government land on each side of the railways, together with the exclusive right of prospecting for oil and minerals within such land for 33 years. The blocks referred to are to be 25 kilometres square, or an area of 625 square kilometres of land for each 25 kilometres of railway constructed. This is equivalent to 10,000 acres of land for each mile of line constructed, or 5% of the total area of the Republic.

The Joint Congressional committee which was formed to examine the contract, reported that the scheme embraces almost all of the railways which have hitherto been regarded as necessary for the development of the wealth of Peru, and the railway problem of the country has thus been solved. It is anticipated that their completion will result in an enormous development of mining and agriculture, and the development of the great wealth of the trans-Andine region will thus become a fact. With the object of encouraging this development, the committee recommend that "railways of penetration," that is, lines piercing the mountain regions and extending towards the eastern area of the country, should be given preference over those paralleling the coastline, which would pass through country of a less productive character; it is also recommended that preference be given to such railways as pass through or most closely approach the richest mining and agricultural regions. There appears to be little doubt that these recommendations will be embodied in the final agreement when it becomes law.

The contract provides for a minimum gauge of 3 ft.; minimum weight of rails, 50 lb.; maximum gradient, 3½%, and maximum radius of curvature 80 metres, unless specially authorized. The minimum length of line to be built is 150 kilometres a year, the whole to be completed within 15 years. The concessionaire has the right to operate or lease the lines during the period of the concession, after which provision is made for the purchase of same by the concessionaire, on payment to the Government of the cost of construction. The latter clause, however, will probably be changed, giving the concessionaire instead a preferential right to the leasing of the railways for a further period after the expiry of the concession, should the Government decide not to operate them. Material required in the construction of the railways is to be exempt from customs duties for 33 years. No other railways are to be built within a zone of 25 kilometres on either side of the railways, and the concessionaire is to have preferential rights in connection with the construction of branches. Certain Government officials, employees and troops, also certain materials required for building public works, are to be transported free. The concessionaire is empowered to build wharves and warehouses at ports forming the termini of the railways, Government land being granted for that purpose. The granting of free right of way is provided for, and

arbitration when private lands are required.

Later reports state that the concession granted Mr. Dunsmuir has been approved by both Houses of the Peruvian Congress but that the terms finally allowed, are less liberal to the concessionaire than those in the executive grant, which will render more difficult the financing of the undertaking. The law, as finally approved, authorizes the executive to offer the same terms to other interests should Dunsmuir withdraw, which is reported as probable. In this event it is probable that the concession would be open to the highest bidder. Certain British interests are said to be following the development of the various proposals closely.

Transportation Events of Twenty-Five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for May, 1898.

C. J. Smith elected President, Canadian Freight Association.

C.P.R. lays telegraph cable from Vancouver to Vancouver Island.

C.P.R. starts survey for line from Toronto to Sudbury, under H. D. Lumsden.

C.P.R. building 10 sleeping cars at Hochelaga, Que., to be fitted up in Louis XV. style.

C.P.R. surveying line from Robson to Boundary Creek District, B.C., under W. F. Tye.

C.P.R. completes track laying on Crowsnest line, between Lethbridge and Macleod, Alta.

C.P.R. commences building transcontinental telegraph line between Montreal and Vancouver.

Dominion Atlantic Ry. building steamships, Prince Arthur and Prince George, in England for Yarmouth, N.S.-Boston, Mass., service.

Richelieu & Ontario Navigation Co. meet railway cut rates, by giving a \$4.50 from Toronto to Montreal, including berth and meals.

C.P.R. fitting 1,200 flat cars at Winnipeg, with Westinghouse air brakes, to reduce running time between Winnipeg and Fort William by one-third.

British Columbia Government makes contract with Mackenzie, Mann & Co. for building narrow gauge line from Teslin Lake to ocean port. This was not carried out.

G.T.R. appointments:—T. McHattie, acting Master Mechanic, Eastern Division at Montreal. H. Ferguson, General Roadmaster, transferred from London to Toronto.

Dominion Senate rejects bill to confirm agreement between Dominion Government, Wm. Mackenzie and D. D. Mann, for construction of railway from Glenora, or Telegraph Creek, to Teslin Lake, B.C.

C.P.R. appointments:—H. B. Spence, Superintendent, Chalk River section, of Brockville, Prescott and Eganville branches, and of Ottawa terminals, at Ottawa; J. E. A. Robillard, Superintendent, Ottawa section and St. Lin, Eustache and Labelle branches, at Montreal; J. W. Harkom, Assistant to Mechanical Superintendent, Montreal.

Traffic Orders by Board of Railway Commissioners.

Specifications for Cheese Boxes.

General order 377, April 6.—Re application of Canadian Freight Association, on behalf of railway companies, under the Railway Act, 1919, sec. 322, for approval of a proposed supplement no. 20 to Canadian Freight Classification 16, adding to the specifications for wooden cylindrical cheese boxes, certain regulations as to the fastening of the covers thereof: Whereas notice has been given by the railway companies in The Canada Gazette, as required by the Railway Act, 1919, and to the mercantile organizations enumerated in general order 153, Nov. 4, 1915; and upon consideration of the submissions filed, and the report and recommendation of its Chief Traffic Officer, the Board orders that the proposed supplement be approved.

Self Propelled Cars on Steam Railways.

The Quebec, Montreal & Southern Ry. received on April 4 from Ledoux, Jennings, Ltd., Montreal, car 51, one of two self-propelled gasoline driven passenger cars ordered recently, an illustration of which is given herewith. This car is approximately 32 ft. long, 8½ ft. wide



Self Propelled Car, Quebec, Montreal & Southern Ry.

and 10¼ ft. extreme height. The underframing is of the same type as that of the car previously delivered to the Q. M. & S. Ry. by the same builders, as described in Canadian Railway and Marine World for Oct. 1922, and the truck and drive arrangement are also similar. Illustrations of the latter, as applied to a car built for the Canadian National Rys., were given in Canadian Railway and Marine World for Aug. 1922.

The car is equipped with a small platform at the back, providing easy access to the marker lamps. The car body is of all steel construction, the sheathing being 1/16 in. thick. The windows are of the ordinary drop type, sliding upward about 8 in., and are provided with standard railway curtains. Provision has been made for the application of storm windows for cold weather use. The seating capacity is 34, and the baggage compartment, 14 ft. long, will accommodate additional passengers if necessary. Entrance to, and exit from, the passenger compartment is by the central doors at each side, and there is an emergency door at the rear, for use in case of accident. The baggage compartment doors are of the sliding type. The equipment includes electric lighting, overhead ventilators, 2-compartment water cooler, dry hopper closet, locomotive bell, Stromboss horn, sanding apparatus and locomotive type pilot. The wheels are 30 in. in diam., and side rods are used on the rear or driving truck. The car has a Reo

T-6 motor of 50 h.p. The second car, no. 52, was expected to be delivered about April 12.

Car 51, together with the gasoline car delivered to the Q. M. & S. in 1922 by the same builders, is being operated as train 50, St. Lambert to Fortierville, Que., 109.69 miles; as train 51, Fortierville to St. Lambert, on Mondays, Wednesdays and Fridays, and as train 52, St. Lambert to Nicolet, 76 miles, and train 53, Nicolet to St. Lambert, on Tuesdays, Thursdays and Saturdays. Car 52 will be operated as train 60, Sorel to Noyan Jct., 86.04 miles, daily, except Sunday; train 61, Noyan Jct. to Sorel, daily, except Saturday and Sunday, and train 63, Noyan Jct. to Sorel, Saturdays only.

Maritime Provinces Delegates' Interview Sir Henry Thornton.

A delegation of 16, from the maritime provinces, headed by J. E. Master, President, Maritime Board of Trade, Moncton, N.B., and including Premier Armstrong, of Nova Scotia; Premier Veniot, of New Brunswick; J. E. McLurg, General Manager, Halifax Shipyards, and several mayors and presidents of local boards of trade, interviewed Sir Henry Thornton, President, Canadian National Rys., in Montreal, April 23, in connection with

provinces for this purpose; and that copies of this resolution be furnished the Maritime members of the House of Commons, the governments of the three maritime provinces and the boards of trade of the maritime provinces.

"The situation was fully discussed, all the delegates expressing their views. President Masters outlined the position of the maritime provinces to Sir Henry Thornton, pointing out the very deep interest that this question had aroused in the minds of the maritime people, especially with regard to any change that might involve the breaking up of the Intercolonial Ry. with its western terminal at Montreal. A general discussion followed, the many and varied aspects of the question being set forth. Sir Henry Thornton stated that the decision regarding the creation of the Atlantic Region had been made only after very careful study of the situation. He did not think that the interests of the maritime provinces would be affected adversely. He told the deputation that the whole question would be reviewed, and if it were found that an injustice had arisen, or was likely to arise, he would be prepared to furnish a remedy promptly. With regard to the manner in which the working of the regions as at present constituted was being carried on, the delegation expressed its appreciation."

In connection with the foregoing, it may be mentioned that Mr. Baxter, St. John, N.B., asked in the House of Commons recently: "Is it true, as reported in the press, that J. A. Sinclair, a member of the Canadian National Rys' Board, stated to members of the delegation of the St. John Board of Trade, which attended a conference at Amherst, N.S., that 'it was news to him that Cochrane and Brockville were not to be the western termini of the Atlantic Division as that was the understanding at the last meeting he had attended,' or words to that effect? If Mr. Sinclair has been substantially correctly reported, why was a matter of such importance dealt with in his absence?" The acting Minister of Railways, Mr. Graham, replied: "The Government has no information as to the correctness of the report in question."

Dominion Express Co. Withdraws from Canadian Government Railways, Etc.

T. E. McDonnell, Vice President and General Manager, Dominion Express Co., issued notice, April 27, that, to accommodate the Dominion Government's wishes, the company's service will be withdrawn from government railways at the end of May, and he extended to employees the management's thanks for the efficient service they have rendered, and for the wonderful spirit of loyalty which has reflected so much credit upon themselves and upon the company. The company will also withdraw its service from the following railway lines: Cumberland Ry. & Coal Co.; Maritime Coal, Ry. & Power Co.; Atlantic, Quebec & Western Ry., and Quebec Oriental Ry., but will remain on the Temiscouata Ry.

The Greater Winnipeg Water District Ry. is reported to have been given a contract for carrying mails from Winnipeg to points on its line. Three centers will be served at present, a train leaving Winnipeg on Fridays and returning on Saturdays. Heretofore, a haphazard service by wagon has been given from Elina, on the Canadian National Rys.

the C.N.R.'s Atlantic Region western termini, with a view of having the region extend from the Atlantic coast to Montreal, instead of to Riviere du Loup and Monck, Que., as fixed by the management recently.

Following the interview, which was private, a statement was issued at the C.N.R. general offices, as follows: "Capt. J. E. Master, President of the Maritime Board of Trade, presented to Sir Henry Thornton the position of the maritime delegates in the terms of the resolution passed at the Amherst convention on March 2, as follows: 'Whereas, the decision of the Directors of the Canadian National Rys. to make Riviere du Loup the western terminus of the Atlantic Region is most unsatisfactory to the people of the maritime provinces generally. Be it resolved that this convention of the boards of trade of the maritime provinces here represented, is of the opinion that the City of Montreal, the present terminus of the Intercolonial Ry., should be the western terminus of the Atlantic Region of the Canadian National Rys.; that the Directors of the Canadian National Rys. be invited to meet representatives from the boards of trade of the maritime provinces in Moncton within ten days from this date to discuss the matter fully and if the board is unable to arrange such a meeting in Moncton that it be requested to fix a date and place in which to receive a delegation from the boards of trade of the maritime

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The Proposals for an International Railway Commission.

Hon. G. P. Graham, acting Minister of Railways, is advocating the establishment of an international joint railway commission for Canada and the United States. He mentioned it first in a press interview in New York, when he went there some weeks ago to meet Sir Henry Thornton, and has referred to it since on different occasions. His suggestion is that such a commission should be empowered to deal with matters affecting international transportation, in order to facilitate decisions in regard thereto, and to remove any possibility of important matters being subjected to undue delay owing to lack of jurisdiction by the Board of Railway Commissioners for Canada and the U.S. Interstate Commerce Commission; the International Joint Waterways Commission being pointed to as an example that might be followed. Mr. Graham's principal reason appears to be that the proposed body might be able to secure more speedy return of Canadian railway cars from the U.S., and vice versa, though the latter really does not require to be dealt with, as the number of Canadian cars in the U.S. is always in excess of U.S. cars in Canada. It is urged that the proposed commission could be given full power to deal with the car question, and that if it made an order for cars to be returned, the order would have to be carried out or a penalty imposed.

Efforts to have a joint railway commission established were made as far back as 1909, when the Canadian Manufacturers' Association and other bodies took the matter up with the then Chief Commissioner, Board of Railway Commissioners, J. P. Mabey. Due to a change of the Dominion Government shortly after the proposal was made, and the probable desire of the new administration to avoid anything savoring of reciprocity with the U.S., the project was dropped. At present the Canadian Manufacturers' Association and some other bodies are said to be working for the establishment of an international commission for the purpose of dealing with questions respecting rates, and the movement of traffic between Canada and the U.S., and vice versa, the commission to be composed of certain members of the Board of Railway Commissioners for Canada and certain members of the U.S. Interstate Commerce Commission. Our understanding is that it is not proposed to remove from either of the national commissions any of the powers now vested in them, but rather to set up a body which it is claimed would facilitate dealing with transportation questions of an international character, its decisions to be somewhat in the nature of recommendations to the existing regulative authorities.

At first sight the proposal may seem to be a desirable one, but on consideration it does not appear that there is any necessity for an international commission. If, as appears probable, it would be intended to have the commission control international rates, it would be entirely superfluous, as the free and uninterrupted flow of traffic between the two countries, with minimum friction as to rates of carriage and other factors in transportation, has demonstrated the existing machinery for the regulation of international traffic and the rates thereon as being entirely adequate. There are a large number of very special commodity rates in Canada which are made to

provide for strictly Canadian interests, such, for instance, as the transcontinental rates, which are very much lower than similar rates in the United States. It would not be in Canada's interests to have a similar low basis of rates apply on competitive U.S. manufactures to Canadian points, but most likely the appointment of an international railway commission would bring about such an application.

If the proposed commission's function would be to look after the car situation only, it would be superfluous, for the reason that there are now agencies in both countries, the Railway Association of Canada and the American Railway Association's Car Service Division, which have unrestricted opportunity to co-operate in the formation of rules covering car interchange between the two countries, and which have authority to prescribe penalties for non-observance.

An International Railway Commission, as proposed, whether designed to be a regulator of railway rates, or merely an agency to supervise the international car movement, would be an unwarranted additional expense in connection with railways, without giving any adequate service in return. The present Canadian railway regulating machinery is not only efficient, but sufficient, and in regard to the U.S., a reasonable view is that the people of that country are now called upon to support a sufficiently large number of railway regulating bodies and are hardly likely to be desirous of adding to them.

The experience of shippers in both Canada and the U.S. has undoubtedly been that they have obtained more satisfaction by meeting railway officials in round table conferences than by appealing to regulatory bodies, a fact which was testified to in Toronto on Jan. 10 by J. H. Beek, Executive Secretary, U.S. National Industrial Traffic League, in addressing the Canadian Industrial Traffic League and the Toronto Transportation Club.

Toronto's Mayor Reproves Himself.

Mayor Maguire of Toronto, in a statement published in connection with the Kiwanis courtesy week, which was held in various Canadian and United States cities, from April 15 to 21, said:—"It is a regrettable fact that it should be necessary to say anything on behalf of courtesy. In public places where people congregate, and in highways of travel, discourtesy daily obtrudes itself. There is no sort of right on the side of discourtesy, because every person is entitled to receive courtesy at the hands of every other person. All people are entitled to courtesy without regard to their position or wealth. It is a reprehensible thing for any person to act rudely towards any other person. Perhaps some err through want of thought; these should keep the golden rule in shining characters continually before their mind's eye, and act upon it. Those who err through deliberate and intentional arrogance should be subjected to the discipline of censure, and, if necessary, the punishment of ostracism." Mayor Maguire must have experienced a decided change of heart since the municipal election campaign in Dec. 1922, when, following Sir Henry Thornton's announcement that a committee of Canadian National Rys. officials would be

appointed, to report on the possible electrification of railways in Toronto district, he sent a most impertinent telegram asking if Sir Henry had joined forces with the C.P.R. to attempt to wreck the proposed Ontario hydro electric railway projects. Mayor Maguire should repeat, day by day, the last sentence of his remarks quoted above, and should realize that, through his "deliberate and intentional arrogance," he is liable to "the discipline of censure" and "the punishment of ostracism."

Another Millstone for Canadian National Railways.

The Lieutenant-Governor's speech at the recent opening of the New Brunswick Legislature said in part:—"The question of making the St. John & Quebec Ry. a part of the Canadian National Rys. System, and thus relieving the province of a heavy burden, has been placed before the Dominion Government, and my Government has the assurance that it will receive consideration so soon as the Canadian National Railways board can make a report thereon." This railway, which extends from near a junction with the C.P.R. at Westfield Beach, N.B., 14 miles from St. John, to Centerville, is now operated on a percentage basis by the C. N. Rys. Why not let that condition continue? The New Brunswick Government authorized its Lieutenant-Governor to state that the debt incurred in building the road is a heavy burden on the province. The Dominion Government could not carry the debt any cheaper than the province, and the only object of the desired transfer is to let the province escape from paying for a road which it built, and to transfer the debt and the interest on it to the people of the Dominion generally. The old Intercolonial Ry. is already overloaded with other lame duck railways that politicians forced the Dominion Government to buy. The folly should not be continued.

Political Interferers at Ottawa.

The appointment of E. M. Macdonald, M.P. for Pictou, N.S., as a member of the Dominion Government, without portfolio, does not augur well for the prevention of attempts at political interference with the Canadian National Rys.' management, as he may be considered the high priest of the large number of the people in the maritime provinces who wish the railways to be run in the interest of whatever party may be in power at Ottawa. It was charged, and has not been denied, that, shortly after the last Dominion elections, Mr. Macdonald got a section foreman on the Intercolonial Ry. to dismiss two section men who had voted against him, but who were afterwards reinstated, to his infinite disgust, an act which embittered him against the then management. Perhaps, however, Mr. Macdonald's appointment may be considered as set off by the disappearance from the Government of D. D. McKenzie, M.P. for Cape Breton North and Victoria, N.S., who has given up the Solicitor-Generalship to become a judge. Mr. McKenzie was one of the most ardent advocates for political appointments, and is said to have gone so far as to have demanded the appointment of Liberals as gatekeepers on the Intercolonial in Cape Breton.

New Brunswick Legislators Want Joy Rides.

The Railway Act, 1919, provides that railways may give free transportation, or reduced rates, to members of legis-

latures, within their respective provinces. The New Brunswick Legislature resolved recently to ask the Dominion Parliament to have the privilege extended to embrace all railway lines in Canada, instead of being given only within the respective provinces. The granting of the request would mean that all the members of the nine provincial legislatures would have free transportation over all railways throughout the Dominion which are under Dominion jurisdiction, and would place a burden on the railways which should not be imposed. Members of provincial legislatures have to deal with matters confined almost entirely to their respective provinces. There is no public reason why they should be able to roam at will throughout the country, from the Atlantic to the Pacific, and the granting of the New Brunswick request would be an inducement to make unlimited joy rides, largely at the public expense, and would be an unwarranted increase in railway operating expenses.

Encouraging Government Interference.

The Toronto Mail and Empire, which had been prominent, among the leading daily newspapers, in advocating the elimination of political interference with the Canadian National Rys.' management, said recently: "The Dominion Government should insist that the National Railways carry Alberta anthracite to Ontario at cost, in May, June and July." This is a most dangerous suggestion and certainly should not be acted on. The Dominion Government should absolutely refrain from any such insistence, or interference, and should allow Sir Henry Thornton and his officials to manage the lines on strictly business principles. If Alberta coal should be carried at cost, why not wheat, timber, and many other commodities? Is not the Mail and Empire a little astray in talking of "Alberta anthracite"? Our understanding is that what Alberta people desire to send to Ontario, at least principally, is bituminous coal.

Unreliability of St. Thomas Press Dispatches.

Canadian Railway and Marine World has, on several occasions, called attention to the unreliability of press dispatches sent from St. Thomas, Ont., particularly in reference to Michigan Central Rd. and Pere Marquette Ry. matters. The latest example is a special dispatch to the Toronto Globe saying that J. L. McKee, General Superintendent, M.C.R., Detroit, Mich., in visiting the St. Thomas divisional headquarters, had stated that a new train, rivalling the Twentieth Century Limited, would be introduced on the Canadian Division. Mr. McKee advises us that he does not know anything about such a proposition, and that no such statement originated with him.

A Many Track Line.—The amalgamation of railways in Great Britain into four groups has brought to light a number of interesting facts. One is that the Southern Ry. Co., starting from London Bridge terminus, has probably the greatest number of parallel sets of tracks on any railway in the world. There are 12 of these at the start; 11 at 1.5 miles out; a little farther on, these are reduced to 8; a few chains farther on there is a further reduction to 6; and a short distance beyond, to 4. The whole distance from London Bridge to the point where the last separation takes place does not exceed 5 miles.

Canadian Freight Classification Revision.

The revision of Canadian Freight Classification No. 16 which was commenced in Feb., 1921, is rapidly approaching completion. The committee consists of W. B. Lanigan, General Freight Traffic Manager, C.P.R.; George Stephen, Assistant Freight Traffic Manager, Western Lines, C.P.R.; F. J. Watson, Freight Traffic Manager, Canadian National Rys.; T. Marshall, Manager, Traffic Department, Toronto Board of Trade; S. B. Brown, Assistant Manager, Transportation Department, Canadian Manufacturers' Association, and J. K. Smith, Manager, Transportation Bureau, Montreal Board of Trade. G. C. Ransom, Chairman, Canadian Freight Association, Eastern Lines, is Chairman and Secretary.

During the committee's numerous meetings, it has heard about 500 shippers' representatives, and it has revised the complete Classification, the result being considered very satisfactory by both carriers and shippers. The revised Classification is being put in type, and after this is completed, there will be conferences with western shippers and jobbers, probably at Winnipeg, then the Classification will be submitted to the Board of Railway Commissioners for approval, and it is probable only a very few items will have to be decided by the Board.

Chamberlin Trophy Competition.

The annual competition among the first aid teams from the various G.T.R. terminals for the Chamberlin trophy, presented by E. J. Chamberlin, formerly President, G.T.R., was concluded recently. Twenty-three teams competed, and in the finals 6 teams were grouped as follows:—Montreal (2 teams), Belleville, Stratford, Guelph and Lindsay. Each member of the competing teams was required to undergo an individual examination, and the teams were also judged as a whole. The Lindsay team secured the highest number of marks, being closely followed by Montreal no. 2 team, and the Belleville team. The members of the winning team are:—R. W. Groves, Chief Dispatcher, captain; M. S. Mowat, Dispatcher; C. H. Heels, car distributor; C. A. Mulvihill, clerk, and A. Lipsett, weighman, all of Lindsay.

The shield was presented to the winning team by the Governor-General, Lord Byng, at the St. John's Ambulance Association's annual meeting in Ottawa. Subsequently the G.T.R. employees in Lindsay and its vicinity gave a dinner and entertainment in honor of the team, at which J. D. McMillan, Superintendent, Belleville, presided. A. J. Hills, Assistant to Vice President, Operation and Construction, and Col. J. Alex Hutchison, Chief Medical Officer, Canadian National Rys., several local business men and about 200 railway employees attended. Each member of the team was given a club bag by the railway employees. Previously the shield had only been won by Montreal and Stratford teams.

F. E. Whelpley, acting Treasurer, Atlantic Region, Canadian National Rys., Moncton, N.B., writes:—"I have been a subscriber to Canadian Railway and Marine World for some 20 years, and have found it to be of such worth that I am anxious to be of any service to it."

Railway Operating Revenues, Expenses and other Statistics for 1922.

The following comparative table for the calendar years 1922 and 1921, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There is a slight increase in the number of roads included under this heading, so that the data for 1922 and 1921 is not directly comparable with previous reports.

As the Canadian Government, Canadian Northern and Grand Trunk Pacific Railways were under one management, and operated as one system, the operating reports for 1922 contain a consolidated report for these railways, under the heading "Canadian National Rys.," which includes the old Canadian Government Rys., viz., Intercolonial, Prince Edward Island, National Transcontin-

ental and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government and added to the Canadian National Rys.; the lines operated as the Canadian Northern Ry. System, prior to its acquisition by the Dominion Government; and the Grand Trunk Pacific Ry., but does not include electric lines.

The column headed "Canadian Pacific" includes also the Montreal and Atlantic and Esquimalt and Nanaimo Rys.

The column headed "Grand Trunk" includes all the G.T.R. Co. of Canada lines, including 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Provincial Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair Rivers.

Items 1 to 6 in the table include rail

lines revenues only. Previous to 1922 they included water lines. Operating income items have been added. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. In former years the total of mixed train miles was added to both freight and passenger train miles when computing averages. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, excess baggage, parlor cars, etc., whereas previous reports gave an average per train mile of passenger receipts only. The number of employees is also a new feature of the 1922 report.

	All railways.		Canadian National		Canadian Pacific		Grand Trunk.	
	1922	1921	1922	1921	1922	1921	1922	1921
Operating Revenues								
Freight	\$313,606,974	\$315,908,654	\$89,726,925	\$93,628,537	\$129,625,392	\$129,357,533	\$56,561,067	\$54,239,903
Passenger	78,690,836	89,018,211	17,919,602	20,208,820	35,480,898	41,612,421	14,342,003	15,510,164
Mail	7,485,417	7,066,179	2,094,621	2,026,600	3,625,711	3,388,793	1,212,433	1,133,737
Express	18,575,552	15,700,995	3,433,612	3,664,424	5,945,769	7,741,012	2,883,700	3,285,110
Other freight train	46,238	55,616	6,505	7,692	35,060	37,744	.....	.....
Other passenger train	6,601,428	6,954,485	1,973,395	2,166,797	3,861,036	3,924,232	499,662	559,480
Water line	2,824,193	2,946,299	.....	.....	2,212,479	2,360,371	.....	.....
All other	14,783,421	15,317,856	3,455,778	3,614,559	7,495,255	7,735,461	2,201,152	2,129,635
Total railway operating revenues	437,614,062	452,963,299	118,610,440	125,317,431	188,281,604	196,157,571	77,700,019	76,858,032
Operating Expenses								
Maintenance of way and structures	\$78,421,590	\$86,111,249	\$31,033,118	\$33,555,870	\$28,027,435	\$29,698,276	\$10,740,705	\$12,862,797
Maintenance of equipment	93,486,271	96,598,408	30,264,966	31,460,270	32,587,818	37,349,107	20,792,314	17,809,497
Traffic	12,903,568	11,230,701	2,861,695	2,541,874	7,382,302	6,290,291	1,816,853	1,583,830
Transportation	189,406,378	206,871,907	59,886,574	71,119,354	75,644,656	78,467,265	34,020,648	35,574,797
Miscellaneous operations	5,345,991	6,032,140	1,831,339	2,041,495	2,603,032	2,878,759	414,133	462,320
General	11,501,812	11,679,037	3,589,650	3,002,365	3,623,894	3,998,051	2,560,590	2,904,024
Transportation for investment	Cr. 905,926	Cr. 2,008,515	Cr. 859,921	Cr. 1,987,543	.....	.....	Cr. 26,433	Cr. 17,974
Total railway operating expenses	390,159,686	416,514,929	128,607,422	141,733,688	149,869,138	158,681,751	70,317,813	71,179,292
Operating Income								
Net operating revenue	\$47,454,375	\$36,448,370	\$9,996,981	\$16,416,256	\$38,412,465	\$37,475,819	\$7,382,205	\$5,678,739
Railway tax accruals	9,053,155	9,265,408	1,409,054	1,550,225	5,557,514	5,597,764	1,200,287	1,325,577
Uncollectible revenues	44,799	10,585	6,362	127	.....	.....	33,291	8,908
Hire of equipment	Dr. 3,868,058	Cr. 2,148,271	Cr. 1,058,387	Cr. 1,172,125	Cr. 3,413,076	Cr. 2,378,170	Cr. 2,505,929	Cr. 1,755,059
Joint facilities rents	1,172,772	2,118,641	Dr. 345,746	Dr. 1,369,975	Cr. 127,826	Cr. 144,853	Cr. 611,294	Cr. 729,001
Operating income	41,051,732	27,202,005	Dr. 10,699,757	Dr. 18,164,459	36,395,853	34,401,078	9,265,851	6,828,313
Operating Statistics								
Average miles of road operated	38,813	38,587	17,225	17,110	13,877.9	13,783.5	3,612	3,612
Tons carried (revenue freight)	102,192	96,847	22,246	21,337	32,032	28,515	23,675	21,687
Tons carried one mile (revenue freight)	30,245,334	26,397,438	10,091,109	8,890,853	12,882,911	10,719,346	4,561,145	4,052,564
Tons carried (all freight)	119,098	114,933	27,702	27,977	38,856	35,492	27,337	25,027
Tons carried one mile (all freight)	33,414,405	29,776,866	11,470,240	10,415,399	14,282,775	12,208,478	4,865,983	4,336,796
Revenue passengers carried	43,175	45,678	11,331	11,930	14,985	15,865	10,998	11,609
Revenue passengers carried one mile	2,798,104	2,937,333	689,191	714,114	1,276,770	1,379,401	500,718	509,330
*Freight train miles	60,903	57,153	20,932	21,560	23,965	20,417	10,117	9,632
*Passenger train miles	45,003	45,776	12,726	13,209	19,573	19,744	7,721	7,946
Total train miles (revenue and non-revenue)	109,329	105,760	35,919	36,601	44,471	40,850	17,846	17,613
Freight car miles—loaded	1,313,951	1,144,592	424,765	389,322	526,137	443,376	218,412	181,375
Freight car miles—empty	628,693	589,216	219,919	211,306	239,011	200,101	100,736	104,540
Passenger train car miles	314,542	319,858	92,539	93,043	139,826	144,383	45,937	47,060
Total amount of payroll	\$225,864,428	\$241,319,991	\$79,983,845	\$87,787,416	\$84,321,814	\$87,004,993	\$42,915,246	\$45,865,171
Number of employees	155,887	156,786	57,815	58,870	57,864	56,755	28,869	29,127
Averages per mile of road operated								
Operating revenue	\$11,274.94	\$11,788.75	\$6,885.95	\$7,324.22	\$13,567.01	\$14,231.33	\$21,511.63	\$21,278.52
Operating expenses	\$10,052.29	\$10,794.18	\$7,466.32	\$8,283.68	\$10,799.12	\$11,512.44	\$19,467.83	\$19,706.34
Tons moved one mile (revenue freight)	779,258	684,102	585,841	519,629	928,304	777,694	\$1,262,776	1,121,972
Tons moved one mile (all freight)	860,908	771,681	665,906	608,732	1,029,174	885,731	1,347,172	1,200,664
*Averages per freight train mile								
Freight revenue	\$5.15	\$5.53	\$4.29	\$4.34	\$5.41	\$6.34	\$5.59	\$5.63
Tons of freight (revenue freight)	496.6	461.9	482.1	412.4	537.6	525.0	450.8	420.7
Tons of freight (all freight)	548.6	521.0	547.9	483.1	596.0	597.9	481.0	450.2
Loaded freight cars	21.6	20.0	20.3	18.1	22.0	21.7	21.6	18.8
Empty freight cars	10.3	10.3	10.5	9.8	10.0	9.8	10.0	10.9
*Averages per passenger train mile								
Passenger train revenue	\$2.36	\$2.59	\$2.00	\$2.12	\$2.50	\$2.87	\$2.45	\$2.58
Passengers carried	62.2	64.2	54.2	54.1	65.2	69.8	64.8	64.1
Passenger cars	7.0	7.0	7.3	7.0	7.1	7.3	5.9	5.9
Average operating expenses per train mile	\$3.57	\$3.94	\$3.58	\$3.87	\$3.37	\$3.88	\$3.94	\$4.04
Average length of haul (revenue freight) miles	296.0	272.6	450.0	416.7	402.2	375.9	192.7	186.9
Average passenger journey miles	64.8	64.3	60.8	59.9	85.2	86.9	45.5	43.9
Average tons per loaded freight car	25.4	26.0	27.0	26.8	27.1	27.5	22.3	23.9
Average freight receipt per revenue ton mile	1.037c	1.197c	.889c	1.053c	1.006c	1.207c	1.240c	1.338c
Average passenger receipt per passenger per mile	2.812c	3.030c	2.600c	2.829c	2.779c	3.017c	2.864c	3.045c
Ratio of pay roll to operating revenues	51.6%	53.3%	67.4%	70.1%	44.8%	44.4%	55.2%	59.7%
Ratio of pay roll to operating expenses	57.9%	62.2%	61.9%	61.9%	54.8%	54.8%	61.0%	64.4%
Ratio of operating expenses to revenues	89.16%	91.95%	108.42%	113.10%	79.60%	80.90%	90.49%	92.61%

*Contains a proportion of mixed train miles.

Railway Operating Revenues, Expenses and Other Statistics for January.

The following comparative table for Jan., 1923 and 1922, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are not in all cases the same as reported in 1922.

For the first time, the column headed "Canadian National" gives the figures for the combined steam railways in

Canada, under the Canadian National Ry. Co.'s directors' management, including the former Canadian Northern System, the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Provincial Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair Rivers.

The items under side headings 1 to 6, inclusive, include rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, excess baggage, parlor cars, etc.

	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
Operating Revenues						
Freight	\$24,608,322.43	\$20,527,665.40	\$11,959,986.20	\$10,121,259.59	\$9,290,858.63	\$7,807,750.58
Passenger	5,372,624.59	4,978,652.83	2,341,598.91	2,136,947.96	2,159,283.43	2,065,318.88
Mail	619,176.19	650,749.51	266,236.79	294,093.41	310,638.65	312,157.79
Express	983,166.64	1,007,699.00	439,967.80	461,545.47	443,270.26	471,450.78
Other freight train	7,017.02	Dr. 1,837.23	2,500.00	Dr. 7,535.00	4,472.02	5,529.59
Other passenger train	427,163.02	431,817.07	169,740.13	189,119.08	243,283.46	225,582.18
Water line	49,870.42	47,986.06		.40	49,870.42	47,985.66
All other	1,131,678.73	1,002,793.71	416,828.21	369,287.21	574,011.63	508,750.20
Total railway operating revenues	33,199,019.04	28,645,626.35	15,596,858.04	13,564,718.12	13,075,688.50	11,444,525.66
Operating Expenses						
Maintenance of way and structures	\$4,863,408.42	\$4,523,399.14	\$2,764,247.67	\$2,568,790.36	\$1,507,653.07	\$1,369,256.85
Maintenance of equipment	7,608,725.01	7,041,782.86	3,609,525.97	3,729,357.03	3,244,709.75	2,619,399.40
Traffic	1,071,196.05	1,022,182.63	353,497.80	364,345.92	653,833.49	589,379.91
Transportation	17,431,745.61	15,618,570.70	9,007,666.20	8,140,605.77	6,608,306.38	5,897,144.07
Miscellaneous operation	392,403.73	406,125.78	162,157.85	169,816.49	191,389.17	199,919.08
General	1,020,283.93	956,644.98	545,336.76	506,785.35	335,825.89	307,415.65
Transportation for investment	Cr. 40,723.21	Cr. 61,652.94	Cr. 40,163.47	Cr. 61,184.65		
Total railway operating expenses	32,347,039.54	29,507,053.15	16,402,268.78	15,418,516.27	12,541,717.75	10,982,514.96
Operating income						
Net operating revenue	\$851,979.50	Dr.\$861,526.80	Dr.\$805,410.74	Dr. \$1,853,798.15	\$533,970.75	\$462,010.70
Railway tax accruals	570,276.31	443,970.69	221,975.34	123,753.71	274,982.90	246,306.62
Uncollectible revenues	8,527.70	3,564.96	8,291.66	3,523.60		
Hire of equipment	Cr. 513,833.32	Cr. 595,571.14	Cr. 309,598.44	Cr. 566,084.45	Cr. 477,347.43	Cr. 243,670.90
Joint facilities rents	Dr. 142,009.48	Dr. 37,420.43	Cr. 5,738.56	Cr. 57,241.16	Dr. 13,227.53	Cr. 47,679.63
Operating income	644,999.33	Dr. 750,911.74	Dr. 720,340.74	Dr. 1,357,749.85	723,107.75	507,054.61
Operating statistics						
Average miles of road operated	38,823	38,805	20,799.2	20,765.2	13,919.9	13,877.2
Tons carried (revenue freight)	8,986,658	6,777,307	3,876,953	2,900,934	2,622,605	1,989,956
Tons carried one mile (revenue freight)	2,587,896.356	1,901,152,773	1,311,365,134	988,808,076	1,004,327,560	716,243,068
Tons carried (all freight)	10,694,110	7,841,389	4,669,072	3,480,619	3,447,261	2,419,545
Tons carried one mile (all freight)	2,917,068,289	2,093,039,296	1,485,701,875	1,096,378,317	1,152,431,735	798,563,088
Revenue passengers carried	3,349,427	3,209,544	1,784,970	1,684,644	1,118,020	1,083,702
Revenue passengers carried one mile	184,778,120	173,445,893	85,196,014	80,322,493	73,542,073	69,783,449
*Freight train miles	5,432,737	4,375,193	2,769,527	2,316,519	2,107,188	1,573,445
*Passenger train miles	3,702,393	3,574,294	1,755,955	1,657,639	1,510,685	1,534,458
Total train miles (revenue and non-revenue)	9,369,465	8,111,178	4,675,542	4,078,456	3,680,775	3,149,166
Freight car miles—loaded	108,008,740	82,925,681	54,444,979	42,186,120	40,758,892	30,437,757
Freight car miles—empty	50,509,471	36,730,415	27,123,180	18,222,112	17,997,639	12,584,180
Passenger train car miles	24,506,334	23,340,531	11,295,385	10,466,711	10,313,049	10,078,084
Total amount of payroll	\$18,828,200.73	\$17,204,402.31	\$10,376,021.60	\$9,591,465.71	\$6,829,442.66	\$6,150,052.68
Number of employees	151,011	142,066	85,535	81,225	53,642	50,804
Averages per mile of road operated						
Operating revenue	\$855.14	\$738.19	\$749.88	\$653.24	\$939.35	\$824.70
Operating expenses	\$833.19	\$760.39	\$788.60	\$742.52	\$900.99	\$791.41
Tons moved one mile (revenue freight)	66,659	48,992	63,049	47,619	72,150	51,613
Tons moved one mile (all freight)	75,138	53,937	71,430	52,799	82,790	57,185
*Averages per freight train mile						
Freight revenue	\$4.53	\$4.69	\$4.32	\$4.37	\$4.41	\$4.97
Tons of freight (revenue freight)	476.4	434.5	473.5	426.9	476.6	455.2
Tons of freight (all freight)	536.9	478.4	536.4	473.3	546.9	504.3
Loaded freight cars	19.9	19.0	19.7	18.2	19.3	19.3
Empty freight cars	9.3	8.4	9.8	7.9	8.5	8.1

*Averages per passenger train mile

Passenger train revenue	\$2.00	\$1.98	\$1.83	\$1.86	\$2.09	\$2.00
Passengers carried	49.9	48.5	48.5	48.5	48.7	45.5
Passenger cars	6.6	6.5	6.4	6.3	6.8	6.6
Average operating expenses per train mile	\$3.45	\$3.64	\$3.51	\$3.78	\$3.40	\$3.49
Average length of haul (revenue freight) miles	287.9	280.5	338.2	340.9	383.0	359.9
Average passenger journey miles	55.2	54.0	47.7	47.7	65.8	64.9
Average tons per loaded freight car	27.0	25.2	27.3	26.0	28.3	26.1
Average freight receipt per revenue ton mile	.951c	1.080c	.912c	1.024c	.925c	1.090c
Average passenger receipt per passenger per mile	2.908c	2.870c	2.748c	2.660c	2.936c	2.960c
Ratio of pay roll to operating revenues	56.7%	60.1%	66.5%	70.7%	52.2%	53.7%
Ratio of pay roll to operating expenses	58.2%	58.3%	63.3%	62.2%	54.5%	56.0%
Ratio of operating expenses to revenues	97.43%	103.01%	105.16%	113.67%	95.91%	95.96%

*Contains a proportion of mixed train miles.

Ontario Station Gardens.—The Ontario Agriculture Department superintends and financially aids a large number of horticultural societies throughout the province. These societies spend some of their money in aiding in beautifying publicly-owned spots. The Welland organization has taken up with the G.T.R., the Niagara, St. Catharines & Toronto Ry.,

and Michigan Central Rd., the question of setting out flower beds, etc., at their stations, and it is reported that this will be done by the railways. The Mitchell Horticultural Society proposes to co-operate with the G.T.R. authorities in laying out the vacant ground at that station prior to the proposed old home week.

G.T.R. First Aid Teams.—W. D. Robb, Vice President in charge of Insurance, etc., Canadian National Rys., presented members of the G.T.R. women's first aid teams recently with silver mesh bags in appreciation of work the members had done during the past season. The no. 1 team took third place in the recent Dominion-wide competition.

Railway Operating Revenues, Expenses and Statistics.

A tabular statement of revenues, expenses and other statistics for all Canadian railways with annual operating revenue over \$500,000, and for the larger railways individually, for the calendar year 1922, is given on pg. 217 of this issue. The monthly statement for January, on pg. 218, shows C.P.R. earnings, expenses and statistics and those for the Canadian National Rys. in their entirety, made up of the lines heretofore designated as Canadian National Railways, in combination with the G.T.R. The monthly earnings for the C.P.R., the G.T.R., and the original Canadian National Rys. system (Canadian Northern Ry., Canadian Government Rys., and Grand Trunk Pacific Ry., and electric lines) for February are given on pg. 220. A study of the tables will give a complete idea of just what progress Canadian railways are making in their uphill fight, and will furnish detailed knowledge of the conditions facing the roads, their earning ability, and their operating status, both as a whole and as individual properties.

An examination of the table of the 1922 operations should be made in full recognition of the fact that the year marked a certain amount of progress by the railways in the reduction of unit revenues and expenses, both of which (the expenses to a greater degree than the revenues, unfortunately) were affected in some degree by the wave of inflation which reached its culmination in 1920, when Canadian roads set a record for gross revenues, due to a combination of heavy traffic and high rates, but, due to heavy expenses, the net earnings were woefully deficient. In 1921, some progress was made in getting expenses down to a more reasonable level, as deflation proceeded, and some improvement over 1920 was secured in operating results. In 1922, the improvement was carried a little further, and, while considerable deflation took place in both unit revenues and expenses, the net result was a more favorable earnings record than in 1921. While in Jan. and Feb. 1922 operating deficits resulted for the roads as a whole, March introduced a period of net earnings which continued to the end of the year. On July 6, freight rates were reduced by about 25%, on grain and grain products, in accordance with the Crowsnest agreement, and by about 6% on various basic commodities, and further by the removal of increases on coal granted in 1920. On the other hand, certain reductions in wage rates were made during the year, and savings were effected by the elimination of overtime, and punitive rate schedules, and by rearrangement of working conditions. Materials as a whole were somewhat cheaper than in 1921, and these factors, combined with an increase in traffic density during the latter part of 1922, enabled the railways to more than counterbalance the effect of the rate reductions.

The increase in traffic density referred to was more or less general, except in coal, while the extraordinarily heavy grain traffic, wherein over 12,750,000 bush. of grain were exported via Vancouver, in addition to the movement east via the regular routes, was the means of providing a large railway revenue. The railway shopmen's strike on the U.S. lines also had the effect of diverting a good deal of traffic to Canadian carriers.

Regarding the 1922 gross revenues as

a whole in conjunction with the traffic which produced them, it will be seen that freight earnings for the year were slightly less than for 1921, despite the fact that the number of tons of revenue freight carried increased by over 5,000,000, and that the ton mileage handled increased by almost 15%. The decrease in freight earnings was 0.73%, and the explanation is to be found, of course, in the rate reductions which were enforced, as indicated by the fact of the average receipt per revenue ton mile being but 1.037c. in 1922, compared with 1.197c. in 1921. To the casual observer this reduction in the unit freight revenue would not appear to be of major importance, but figured in terms of percentage it is found to be indeed so, and when the difference of sixteen-hundredths of a cent is applied to the vast number of ton miles handled, the results produced on total freight earnings are of surprising magnitude. The reduction in gross earnings from passenger service, 11.5%, was large, and was due not only to the reduction of the average rate per revenue passenger mile from 3.030c. to 2.812c., but also to the falling off in passenger traffic, this being evident in both the number of passengers carried and in revenue passenger mileage. The 1922 passenger traffic did not reflect improving economic conditions to the same degree as did freight traffic, but, with a continuation of business and economic betterment, there is reason to hope that the improvement in passenger traffic will be greater in 1923. All other items of gross revenue decreased in 1922, compared with 1921, with the exception of mail service, so that the total gross revenue for the roads as a whole decreased 3.4%.

The most gratifying thing about operating expenses is that for the roads as a whole they showed a larger decrease for 1922, compared with 1921, than did gross earnings. The reduction in operating expenses was 6.3%, reductions being accomplished in every item except traffic expense. Particularly noticeable is the fact that, despite the large increase in freight traffic mentioned, transportation expenses were reduced by 8.4%, the reduction amounting to \$17,465,529. The result of the larger reduction in expenses than in revenues was that the operating ratio showed some improvement over 1921, while a satisfactory increase in net operating income was produced.

Examination of the operating statistics shows that in 1922 the railways took full advantage of the opportunity presented by increasing traffic density to increase their operating efficiency, this fact being made abundantly clear on noting that the 12.2% increase in ton mileage was handled with an increase in freight train mileage of but 6%, and that the total traffic was handled with an increase in total train mileage of but slightly over 3%. The remarkable decrease in transportation expense referred to above (all the more remarkable because train and locomotive employees' wages were not reduced in 1922) was in no small measure due to the success met with in the effort to move the maximum ton mileage with the minimum train mileage, and that success, in turn, was due primarily to better train loading, the increase in the revenue train load for all roads being 34.7 tons over 1921, and 27.6 tons as applied to all freight. This betterment in train loading was not due to improve-

ment in car loading, but was brought about in spite of a falling off in average car loading from 26 to 25.4 tons, and is explained by the fact that the average freight train contained 1.6 more loaded cars in 1922 than in 1921. The payroll for the railways collectively was reduced \$15,455,563, or 6.4%, with less than 1% decrease in the average number of employees.

Regarding the year's operations as concerns the individual roads, the financial results secured have been discussed in preceding numbers of Canadian Railway and Marine World, but some of the operating figures which gave rise to them are of sufficient interest for further reference. On the Canadian National Rys. (the original system) where the operating deficit for 1922 was \$9,996,981, compared with \$16,416,256 in 1921, substantial increases in both the number of tons of revenue freight carried, and the number of ton miles handled, were recorded, and some falling off in passenger traffic was experienced. The fact of there being a decrease in freight train mileage, notwithstanding the increase in freight traffic is notable, while passenger train mileage for the year was cut down below that of 1921, in even greater proportion than passenger traffic decreased. The explanation of the better relationship as between freight train mileage and ton mileage, is to be found in the remarkable improvement made in train loading, this arising from both better car loading and the inclusion of more cars per average train.

On the C.P.R., the favorable results of which road's operations were fully discussed in our April issue, the large increase in revenue freight handled, and in freight ton mileage, was barely sufficient to make the 1922 freight earnings equal those of 1921, due to the application of rate reductions. The falling-off in C.P.R. passenger business was particularly noticeable. The increase in freight train miles operated was not disproportionate to the increase in freight traffic handled. While there was some falling off in the average car loading, the increase in the number of cars per train increased the number of tons of revenue freight per average trainload.

On the G.T.R., where the year's operations were marked by larger gross revenues, and smaller total expenses, than in 1921, the increase in freight traffic was more than sufficient to wipe out the loss of revenue occasioned by rate reductions, although, in this connection, it must be borne in mind that the most severe rate reductions, those on grain and grain products, did not affect the G.T.R. to nearly the same extent as they did the transcontinental carriers. As on the other systems, passenger traffic fell off considerably. The increase in the G.T.R. freight train mileage was not so large proportionately as the increase in freight traffic handled, and the falling off in passenger traffic was accompanied by some decrease in passenger train mileage. Despite a material decrease in the number of tons of freight per car, the increase in the number of loaded freight cars per average freight train was sufficient to increase in large measure the average train load.

An examination of results for Jan. 1923, shows that the railways as a whole got off to a much better start in 1923 than in 1922, Jan. 1923 having net earnings of \$851,979, compared with an oper-

ating deficit of \$861,527 in Jan. 1922. The recovery made in freight traffic within the year is shown both by the figures covering freight handled and freight ton mileage, and by the figures for freight revenue, which exhibit a most substantial increase, despite the reduction of the average receipt per revenue ton mile from 1.080c. in Jan. 1922 to 0.951c. in Jan. 1923. Passenger traffic also shows an increase, which is reflected in the passenger earnings. It is noticeable that the average receipt per revenue passenger mile was higher in Jan. 1923 than in Jan. 1922.

As would logically be expected with the increased traffic movement, practically all departments of operating expense for the railways collectively showed some increase over Jan. 1922, but so long as the increase in total expenses is not greater than that in total revenues, the mere fact of expenses having increased does not constitute an undesirable symptom, but must be regarded as desirable in so far as it is the result of more business, which is the chief need of the industry. In relation to the additional business handled, the increase in operating expenses was most reasonable, the relationship serving to adequately express the efficient operation displayed in Jan. 1923 as indicated by the smaller proportional increase in freight train miles than in ton miles. The opportunity for efficient operation presented by increased traffic density was taken full advantage of.

For the first time, the results of all Government-owned roads are consolidated in one statement, and, as pointed out in a preceding issue, where the original Canadian National Rys. and G.T.R. financial results for January were reviewed separately, the deficit experienced by the combined system in Jan. 1923 was much smaller than in Jan. 1922. The National system as a whole experienced substantial increases in both freight and passenger traffic, and, on the basis of better car and train loading, operating expenses were held down well. On the C.P.R. also, both freight and passenger traffic showed good increases, resulting in the improvement in net returns shown in the table, and commented on in a preceding number.

On looking at the returns secured by the individual railways in February, it is to be seen that the C.P.R., with gross earnings of \$11,159,865, showed a decrease from Feb. 1922 of \$143,828, while operating expenses, \$10,664,371, were \$15,166 greater than in Feb. 1922, resulting in net earnings for the month, \$495,494, being \$158,994 less than in Feb. 1922. The figures for the Canadian National Rys. (exclusive of the G.T.R.) and for the G.T.R., show that in Feb. 1923 these roads also did not secure as favorable results as in Feb. 1922. The reversal of form from January applied alike to all three systems and was most marked.

While February is not commonly regarded as a month liable to be characterized by heavy traffic, and while it would be in keeping with the usual trend of events if traffic fell off during that month, it may nevertheless be noted that the Railway Association of Canada reported heavy car shortages as of both February 1 and March 1, which indicates that, despite the fact that there are a lot of Canadian cars on U.S. lines, traffic on Canadian railways in February must have been good. That being the case, and railway earnings being so much more unfavorable than in January, the

question naturally arises as to the adequacy of the rates on which the railways are doing business, and as to where they would find themselves if they were trying to make ends meet on traffic of the same volume they had in Feb. 1922. An examination of the January table shows that the railways had to handle a vastly greater amount of traffic in Jan. 1923 than they did in Jan. 1922, to earn the increased gross revenues which they got, and a natural conclusion is that any falling off in traffic, which never brings with it an opportunity to reduce operating expenses in proportion to the enforced revenue reduction, would leave the railways in bad shape, so far as net earning ability is concerned. It may be taken for granted that every effort is being made to keep operating expenses down to the minimum, and with conditions as shown it must be evident to all that the railways, faced with a commodity market marked by rising prices rather than falling, and with a wage scale most unlikely to be marked by decreases, are in no position to meet with rate reductions the demands, requests and suggestions for which appear to be always with us.

Railway Earnings.

Canadian National Railways.

Following are total operating revenues, total operating expenses, and net operating revenues or deficits, for the Canadian Northern Ry. System (steam and electric lines), Grand Trunk Pacific Ry., and Canadian Government Rys., the last including the Intercolonial Ry., Prince Edward Island Ry., and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government:—

	Revenue.	Expenses.	Deficit.	Increase or Decrease.
Jan.	\$ 9,652,600	\$10,808,306	\$1,555,706	\$1,076,307
Feb.	7,764,196	10,724,382	2,960,186	*575,596
	\$17,416,796	\$21,532,688	\$4,115,892	\$ 500,711
Inc'se	\$ 1,383,037	\$ 882,325		
Dec'se			\$ 500,711	
	*Increase.			

Grand Trunk Railway.

Following are total operating revenues, total operating expenses, and net operating earnings, or deficits, of the G.T.R. system, for 1923 and 1922:—

	Revenue.	Expenses.	Net.	Increase or Decrease.
Jan.	\$8,623,348	\$7,937,775	\$ 685,573	\$ 89,768
Feb.	7,942,776	7,582,837	359,939	*836,517
	\$16,566,124	\$15,520,612	\$1,045,512	*\$746,749
Inc'se	\$ 1,568,160	\$ 2,314,909		
Dec'se			\$ 746,749	
	*Decrease.			

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross.	Expenses.	Net.	Increase or Decrease.
Jan.	\$13,148,914	\$12,428,888	\$ 720,026	\$ 236,549
Feb.	11,159,865	10,664,371	495,494	*158,994
	\$24,308,779	\$23,093,259	\$1,215,520	\$77,555
Inc'se	\$ 1,667,111	\$ 1,589,556	\$ 77,555	
	*Decrease.			

Lifting of Rails on Canadian National Railways.—The House of Commons adopted a motion recently, by D. M. Kennedy, Edmonton West, Alta., for a copy of all papers, letters, telegrams, orders in council, and all other documents, relating to the lifting of the steel on portions of the Grand Trunk Pacific and the Canadian Northern Rys., between Edmonton and the western boundary of Alberta.

The Bad Order Car Situation.

The Railway Association of Canada's report of the bad order car situation as at April 1, shows that, out of a total of 184,998 freight cars on Canadian lines, there were 12,663 in bad order, or 6.8%. The 7% standard set by the American Railway Association would allow Canadian lines to have 12,950 cars in bad order, without having more than a normal amount of their equipment awaiting repairs; that would be 287 more cars than were actually in bad order. A shortage of 3,614 cars was reported. On March 1 the bad order percentage was 5.9, with a shortage of 4,810 cars. An analysis of the bad order car situation and freight car surplus and shortage was given in Canadian Railway and Marine World for April, pg. 170, which shows that while the number of bad orders increased somewhat during the month, the situation is still comparatively favorable, although the decrease in the shortage of cars must be considerably greater than during the month before a normal condition is attained.

The American Railway Association's Car Service Division reports that on March 15 there were on U.S. class 1 roads, 2,282,626 freight cars of all kinds, of which 212,553, or 9.3%, were in bad order, compared with 9.5% on March 1. Out of 1,049,242 box cars, 88,605, or 8.4%; out of 59,462 refrigerator cars, 6,747, or 11.3%; out of 957,135 gondola cars, 97,787, or 10.2%; out of 80,246 stock cars, 7,915, or 9.9%, and out of 94,403 flat cars, 9,474, or 10%, were in bad order. At a meeting of American Railway Association member roads on April 5, a programme approved by the Association of Railway Executives, designed to give the railways a concerted policy to enable them to meet the growing transportation needs of the U.S., was adopted. It provides that by Oct. 1, 1923, when the peak traffic movement ordinarily begins, cars awaiting repairs shall be reduced to 5% of the total number in the country. From the figure above shown, 9.3%, it is evident a lot of improvement has been effected from a year ago, when the bad order percentage was running about 14. To get the percentage down from 9.3 to 5, approximately 98,152 cars would have to be put into operating condition, which makes it clear that there will have to be a lot of activity on the U.S. railways' rip tracks if the goal set in the railway efficiency programme is to be attained.

Railways and Canals Department's Salaries.—The estimates for the year ending March 31, 1924, submitted to the House of Commons recently, provide for the following salaries for the principal officials of the Railways and Canals Department:—Deputy Minister, \$10,000, an increase from \$6,000; Chief Engineer, \$8,000; Solicitor and Counsel, \$5,000; Comptroller, \$4,800; Secretary, \$4,200; Right-of-Way Agent, \$4,800; Assistant Chief Engineer, \$5,400; Assistant Deputy Minister, \$4,800; Assistant Comptroller, \$3,960; General Assistant Engineer, \$4,800; Senior Electrical Engineer, \$4,800; Senior Hydraulic Engineer, \$4,800; Senior Office Engineer, \$3,840; Bridge and Structural Engineer, \$3,420.

C. H. Heels, Car Distributor, Canadian National Rys., Lindsay, Ont., writes:—"I have been a subscriber to Canadian Railway and Marine World for about 10 years, and consider it a valuable book of information, especially to those interested in railway matters."

Bonuses to Canadian National and Grand Trunk Railway Officials.

The acting Minister of Railways, Mr. Graham, stated in the House of Commons, on March 28, in answer to W. J. Ward, Dauphin, Man., that D. B. Hanna, former President, Canadian National Rys., received on his retirement \$35,000, in addition to his salary to date of retirement, and that A. J. Mitchell, former Vice President Canadian Northern Ry. Co. and Vice President of Finance and Accounts, similarly received \$20,000, in recognition of past services and by authority of the Canadian Northern Ry. Co. directors, given Sept. 14, 1922. In answer to the question:—"Did any other retiring official or director of the Canadian National Rys. receive any such gratuity or bonus on retirement?" Mr. Graham said:—"Yes.

"S. L. Shannon, Comptroller and Treasurer, Canadian National Rys., salary for 6 months, \$3,000, preliminary to superannuation.

"W. H. Biggar, K.C., Vice President and General Counsel, Grand Trunk Ry., died July 7, 1922, and on July 10, the Grand Trunk Canadian board voted Mr. Biggar's estate his salary to Dec. 31, 1922, at the rate of \$20,000 a year.

"Preliminary to superannuation, the following gratuities were voted by the Grand Trunk Canadian board on the dates mentioned: Aug. 25, 1922, Frank Scott, Vice President and Treasurer, salary for 4 months, \$6,000; Sept. 11, 1922, R. S. Logan, Vice President, salary for 3 months, \$3,500; Sept. 11, 1922, A. B. Atwater, Assistant to President, Western Lines, salary for 3 months, \$1,000.

"In addition to the above, H. G. Kelley, President of the Grand Trunk and of the Grand Trunk Pacific, was voted a gratuity of \$40,000 on Grand Trunk account, and \$10,000 on Grand Trunk Pacific account; R. S. Logan, Vice President, \$12,000, and Frank Scott, Vice President and Treasurer, \$25,000, by the English board of directors, under circumstances set out in following extract from minutes of a meeting of the directors of the G.T.R. Co. of Canada, held in London, Eng., Dec. 12, 1919, Sir Alfred W. Smithers, Chairman, in the chair:—"The Chairman explained the position in which many of the chief officers, who had been in the service of the company for a very long period, might be placed when the change of administration of the G.T.R. took effect in consequence of the agreement made with the Canadian Government for acquiring the G.T. system, and then submitted letter from the Vice President and Treasurer to the President, dated Nov. 8, with reference to the satisfactory working of the company's fire insurance fund, which at June 30, 1919, showed a surplus of \$223,957 over the amount of \$1,000,000 which is considered to be ample to cover all liabilities of fund. On the recommendation of the Chairman, it was decided, after consideration, to vote one year's salary as a gratuity to each of the following officers:—H. G. Kelley, President, \$50,000; J. E. Dalrymple, Vice President, \$16,500; W. D. Robb, Vice President, \$16,500; R. S. Logan, Vice President, \$12,000; J. M. Rosevear, Comptroller, \$12,000; D. E. Galloway, Assistant to President, \$9,000; W. P. Hinton, Vice President and General Manager, \$15,000; H. H. Hansard, Solicitor, G. T. Pacific Ry., \$7,200; S. P. Porter, Executive Agent, G.T.P.R., \$4,200; and \$5,000 each to G. T. Bell, Passenger Traffic Manager, and H. C. Martin,

Freight Traffic Manager. It was also decided to grant Frank Scott, Vice President and Treasurer, looking to his successful working of the fire insurance over a number of years, \$25,000; and to H. H. Norman, Secretary, and H. Deer, Assistant Secretary, \$12,500 and \$10,500, respectively; the whole of the above gratuities to be debited to the fire insurance fund."

"Further, the English board of directors, on Feb. 19, 1920, the date of the ratification of the acquisition agreement by the shareholders, voted themselves, as compensation for loss of office, a gratuity of five years' directors' fees, under the circumstances set out in extract from the board minutes of the date in question, copy of which is also attached:—"Extract from minutes of a special general meeting of the company, held in London, Eng., Feb. 19, 1920, Sir Alfred W. Smithers, M.P., Chairman, in the chair: It was moved by A. B. Boshier, seconded by E. Roberts, and unanimously resolved, that the board of directors be granted, as compensation for loss of office, an amount equal to five years' remuneration, to be paid to them out of the contribution to be made by the holders of the debenture and guaranteed stocks, and to be divided as the board may determine." Note: The total remuneration paid to all of the directors per year was \$6,900, or \$33,580, and for five years was equal to \$34,500, or \$167,800. There were nine directors on the board at that date."

Former G.T.R. Officials' Voluntary Offer to Refund.

Sir Henry Thornton, who went from Montreal to Ottawa on April 7, in connection with the matter, issued the following statement:—"The ex-officers of the old G.T.R. who received gratuities from that company, now in the service of the Canadian National Rys., have offered in a letter received by me to return to the Canadian National Rys. the gratuities in question. In justice to these officers, it is but fair to say that at the time they received their several gratuities they were unaware of the details of the transaction and were informed by the then President of the company that the amounts were a donation from the G.T.R. shareholders, acting through their directors, as a reward for long and faithful services. The receipts which were presented to them for signature bore the endorsement, 'Special gift from shareholders,' and tended to corroborate the statement made by the then President of the company. The voluntary action of the officers in question, as outlined in their letter to me, has the complete commendation of the administration of the Canadian National Rys. and should excite the entire approval of the public."

The letter referred to above, which was signed by W. D. Robb and J. E. Dalrymple, Vice Presidents; D. E. Galloway, Chief Assistant to President; G. T. Bell, Executive Assistant to Traffic Vice President; H. C. Martin, General Freight Traffic Manager; J. M. Rosevear, General Comptroller, and H. H. Hansard, Solicitor, was as follows:—"The undersigned officers of the old G.T.R. Co., now in the service of the Canadian National Rys., having read with concern the accounts in the public press of the gratuities voluntarily given them prior to the date of the acquisition of that

company by the Government, under resolution of the board of directors of that company, have determined, with a view to performing their full duty as patriotic citizens of the Dominion, and to preserve that confidence and respect on the part of the public without which no railway officer can efficiently perform his duties, to voluntarily offer the Canadian National Ry. Co. a return of the gratuities given in each case, a reasonable time to be allowed each officer to complete his payment. In taking this action, we wish to make it clear, as a matter of justice, that we admit no wrongdoing on our part, as, at the time, we were informed the gratuities were given by the retiring board of the G.T.R. Co., in recognition of loyal and faithful services covering a period of many years."

Government Announces a Royal Commission.

Following a meeting of the Dominion Cabinet at Ottawa on April 7, the following official statement was issued:—"At a meeting of the cabinet ministers this afternoon the question of gratuities voted to the G.T.R. board of directors in London in Dec., 1919, and also gratuities voted to certain officials of the company in London and Canada, was discussed. In view of the fact that these payments were made just prior to the coming into operation of the agreement between the G.T.R. Co. and the Government, by which that railway system came under the control of the joint committee of management, it is thought, in the public interest, that a full investigation of its circumstances should take place. These payments were made in Dec., 1919, and under the agreement which became operative in March, 1920, it was stipulated that the G.T.R. Co. could not dispose of any of its assets without the approval of the Government. It is stated that, although this agreement was not an accomplished fact until March, its terms had practically been decided upon prior to the date on which these resolutions were passed by the directors. It also appears that the gratuities to the officials were paid out of the fire insurance fund, which amount would have, in its entirety, reverted to the present Canadian National System had the moneys not been so paid. In justice to all concerned, it is thought advisable to appoint a royal commission, with power to investigate all the circumstances surrounding and connected with the granting of these gratuities. The action of the officials at present in the service of the Canadian National System in returning voluntarily the amounts which had been paid them, and which they had been given to understand was a gift from the shareholders, is appreciated, and the decision arrived at to appoint a royal commission is in no way intended as a reflection upon those officials."

On April 20, it was announced at Ottawa that F. T. Congdon, K.C., formerly Commissioner of Yukon Territory, had been appointed a Commissioner to enquire into the whole matter.

The Question in Parliament.

On April 9, the leader of the Opposition, Mr. Meighen, referred to the Government's statement as to the appointment of a royal commission, and the acting Minister of Railways, Mr. Graham, replied in part as follows:—"When the fact became known that cer-

tain grants were made by the London board of directors to their own members, as well as to officials of the G.T.R., it caused considerable uneasiness throughout the country as to just how far these grants went, what authority there was for making them, and if other grants were made the details of which have not yet become known. The suggestion of a royal commission, is no reflection on any person, but the conditions surrounding the making of these grants ought to be made quite clear to the public, who now own the property out of which, at least, a proportion of these grants came, as the assets of the G.T.R. Co. were less when they came into the possession of the Dominion than they would have been had these grants not been made. Without casting a reflection on any person, but merely with a desire to get at the real situation, so that the Canadian National Ry. may be started on its career from now on without any cloud or suspicion hanging over it in regard to any of these transactions, the Government thought it advisable to ask some independent body or person to act as a royal commission, to get the facts as briefly and succinctly as could be done, so that they might be given to the public.

"A letter was written, if I remember correctly, in Oct., 1919, by a legal representative of the Government of that date in reference to a proposed agreement for taking over the G.T.R. That agreement, although its provisions, I believe, were outlined in this letter, was not executed and did not become operative till March, 1920. There was one clause in the agreement, if I am correctly informed, which stated that after the execution of the agreement the G.T.R. could not dispose of any of its assets without the consent of the Government. In Dec., 1919, midway between the letter of October and the bringing into operation of the agreement, the board of directors met and passed a resolution giving gratuities to certain officers. I do not think the resolution was made public at that time, but only a few days ago, as far as I know. The money was taken out of the fund set aside for fire insurance purposes. True, that fire insurance fund belonged to the G.T.R. Co., but it never was set aside for the purpose of giving gratuities, and the public would like to have cleared up the details surrounding the decision, in regard, not so much to the giving of the gratuities, as to taking them out of the fire insurance fund, which had been set apart for other purposes; because to the extent that these gratuities were taken out of the fire insurance fund, that fund was reduced when the G.T.R. system came to the Dominion of Canada.

"Then a resolution was passed by the directors, giving themselves a gratuity of five years' salary on account of the disappearance of the G.T.R., and, consequently, the disappearance of the board of directors. I may say, in justice to the board of directors, first, that I believe that, under the Railway Act of Great Britain, gratuities of that kind are given to directors under similar conditions, and that, while the company may not have been chartered under that act, yet they were living in the shadow of it, and this resolution would be passed under conditions similar to those existing in Great Britain. But in addition to that, it is said in the resolution that these funds payable to the directors came out of another fund, contributed by the holders of the guaranteed securities, debentures and stock of the G.T.R. The holders of

these securities are the men who have value, or to put the matter plainly, who do not lose by the transference of the G.T.R. to the Dominion or to the Canadian National Rys. Just why a resolution of directors ought to be necessary to dispose of privately contributed funds is a question that ought to be cleared up. I want to be fair to every person, and this might be the situation. As I understand the matter, the holders of these securities contributed certain funds for the purpose of protecting their interests or the interests of the shareholders before the board of arbitration, and this fund may have been so contributed that the board of directors had the power to use it even for the purpose of giving themselves the 5-year gratuities. Everything that has taken place may be perfectly explainable; but there are surrounding the payments of these gratuities to officers in Canada, conditions which, to my mind, make it essential, in order that the people of this country who now own these properties may have the utmost confidence in them, that this should be cleared up.

"One thing which has come to my attention is this. These funds were paid out of the fire insurance fund; but when the officials signed the receipts for their gratuities, they found that the receipts stated distinctly that the contributions were gifts from the shareholders to them for long and continued service. There are, as regards the vouchers which were originally presented, details which, I think, require a good deal of investigation, and it would be in the interest of the public that some independent body—the Government suggests a royal commission—should be named to make this investigation and to give to the people, who own this property, a clean slate as to what has occurred, so that we shall all know through what vicissitudes our property has come before it has reached us. I think this is fair to the officials, fair to the British board, as well as fair to the various Canadian boards. Up to the present, the personnel of the commission has been a secondary matter. Our sole purpose is to clear the air of whatever clouds may surround the transference of the G.T.R. to the Dominion, and we believe it is in the public interest that this should be done. The Government had first thought of a Parliamentary committee; but they are unanimously of opinion that owing to the lateness of the session and the peculiar conditions surrounding this transfer, the interests of the public would be better and more speedily served by having a royal commission.

"As regards Mr. Hanna, it is well known that it is the custom of large railway corporations to give gratuities or superannuations to old and tried employees. The situation in Mr. Hanna's case was delicate, and Mr. Hanna coincided and fell in line with what was done, as explained to him by the late Minister of Railways. Let me say this on behalf of Mr. Hanna. He was not retired because he is not an able man. The Government thought, and I am free to confess that as the days and weeks and months have gone on that the judgment was sound, that it would be next to impossible, for reasons that I need not explain, to amalgamate these two great systems with the head of either one at the head of the amalgamated system. I can assure the House that the difficulties that have arisen day by day in welding together these two systems with the official staff of each, have convinced

me that it would have been practically impossible to have done this with the head of either one of the separate systems at the head of the amalgamated system. Mr. Hanna, understanding the situation, sent in his resignation, and, from that day to this, has acted in connection with the Canadian National Rys., as a man who is interested in the success of that system. There was no superannuation in the old Canadian Northern. Had Mr. Hanna and Mr. Mitchell retired without some consideration, they would therefore have had no benefit of any superannuation. For the benefit, however, of the railway men, something of that kind will be established before very long. It will be remembered that the late Minister of Railways, in speaking in this House last year, informed the members of Parliament and the country that when any of these old and tried officials were retired, they would have the benefit of superannuation. I imagine he had in mind at that time, not exactly superannuation, but that they would be treated generously. There is nothing secret about the gratuities handed to Mr. Hanna and Mr. Mitchell. This was done publicly, wide open. The late board of directors did not act in any underhand way in connection with this matter. When they decided to do this, I knew they were going to do it, and I informed the Government. So the circumstances are altogether different, and I am prepared to say that the gratuities given to Mr. Hanna and Mr. Mitchell, under all the circumstances, were not more than those to which they were entitled. The country from a practical standpoint is the gainer instead of the loser by the generous treatment accorded these two officials, as any hon. gentleman would admit had he been in the Railway Department or been associated with the railway amalgamation during the last six months.

"As regards the question asked why the matter of the other gratuities was kept hidden, I do not know that there has been any effort to conceal it. The facts are in the minutes of the old G.T.R. Co., although as a matter of fact they did not come to the notice of the Department until a few weeks ago. They are, however, recorded in the minutes in London, and it may be that the arbitrators took cognizance of these gratuities and other expenditures when making the award. That being the case, it is all the more necessary that we should have an independent commissioner or body of commissioners to place all the facts before us so that the air may be cleared and we may start the new year knowing just where we are at."

Station Location Plans.—The Board of Railway Commissioners has directed that in future, whenever it is the intention of a railway company to build a station, and an application is to be made to the Board of its approval, a copy of the application and plan be served on the municipal authority of the district in which the station is to be erected; or if there is no municipal authority, then on the government or other authority having control over the district.

C.P.R. False Creek Bridge.—The further supplementary estimates for the year ended March 31, 1923, submitted in the House of Commons recently, provide \$8,934.08 to pay balance due the C.P.R. for the removal of the span of the bridge over False Creek, B.C., at different times since 1918, to permit of ship movements.

Canadian Pacific Railway Construction, Betterments, Etc.

Betterments, Branch Lines, etc.—The directors annual report for 1922 to the shareholders, issued recently, contains the following:—"In anticipation of your confirmation, your directors authorized capital appropriations, in addition to those approved at the last annual meeting, aggregating for the year 1922, \$1,512,680. Your approval is asked to expenditures on capital account during this year, as and when the conditions warrant such expenditures, of \$7,630,100. Of this amount the principal items are: Replacement and enlargement of structures in permanent form, \$803,700; additional stations, round houses, freight sheds and shops, and extensions to existing buildings, \$318,400; tie plates, rail anchors, ballasting, ditching and miscellaneous roadway betterments, \$1,250,400; replacement of rail in main and branch line tracks with heavier section; \$169,500; additional terminal and side track accommodation, \$502,500; extension work on Chateau Frontenac Hotel, Quebec,

reported to have had an interview with Grant Hall, Vice President C.P.R., at Montreal recently, in regard to the erection of an improved station. In May, 1922, Mr. Hall, speaking at a dinner in Three Rivers, stated that the C.P.R. had been ready at any time within the previous two years to build a station, provided that St. Maurice St. be closed. Some arrangement in this direction is apparently being made, as Mr. Hall is reported to have promised that the matter would receive prompt consideration.

Windsor St. Station.—An important addition to this Montreal station has been built. As shown in the accompanying illustration, the addition fronts on Osborne St. It is 176 ft. long, with an average width of 75 ft. For the present it will be three stories high. The ground floor is being used for express purposes, and the two upper floors for offices for the express, steamship and other departments, taking care of the overflow from the main and downtown office buildings.

mining area. The terminus of the line will be at the Quinze River, from which point it is expected that a connection will be given to the Rouyn area by steamboat via Lake des Quinze, Lake Expanse, Ottawa River and Kenojewis River. This steamboat service will be operated from Gillis Bay, instead of from the outlet of Quinze Lake, and will be independent of the railway. Some details of this service are given in the Marine Department further on in this issue, under "Province of Quebec."

The C.P.R. has announced that the stations on this extension will be named after Oblate priests, who were active in missionary work there in the early days. The stations from Kipawa to the Des Quinze River will be:—Gendron, Dozois, Tabaret, Beaudry, Fabre, Latulippe, Lorrainville, Laverlochere and Angliers. Latulippe is named after the first bishop of the district, and all the others after Oblate fathers.

Port McNicoll Bridge.—The bridge on the Georgian Bay & Seaboard Ry., just outside Port McNicoll, Ont., is, a press report states, to be rebuilt somewhat nearer to Victoria Harbor than the present one. The work, it is stated, will involve some changes in the line, including the construction of double track overhead bridges at the level crossings.

North Bay Locomotive House.—A press report states that 10 pits are to be added to the locomotive house at North Bay, Ont.

Fort William No. 5 Shed.—Work is reported to have been in progress for some time on the construction of the new no. 5 shed at Fort William, Ont., to replace the one destroyed by fire Dec. 5, 1922. The work was expected to be sufficiently advanced to permit of the shed's use on navigation opening.

Western Branch Lines Construction.—We were officially advised that D. C. Coleman, Vice President, Western Lines, announced in Calgary, Alta., recently that the branch lines construction will include the following:—

Lanigan northerly branch, now in operation to Naicam, Sask., 60 miles, to be extended to Melfort.

Cutknife-Whitford Lake line to be extended to the crossing of the Battle River.

The first two sections of the Mildren, Sask.,-Empress, Alta., line, 59 miles in all; the first two sections of the Leader, Sask., southerly line, 50 miles in all, and the first section of the Wymark-Archive, Sask., line, 25 miles, to be completed.

It is intended to build southerly from Drumheller, Alta., to Bull Pound, 39 miles. This line, which will be built by the C.P.R., will be operated as a joint section in connection with the Canadian National Rys.

Work is proceeding on the first two sections of the Consul-Assiniboia, Sask., line.

There will be no new line construction in Manitoba this year.

It is expected that a further announcement as to new construction work will be made early in May.

We are officially advised that contracts for grading on the first two branches mentioned above have been given as follows:—Naicam to Melfort, 32 miles, Stewart and Cameron, Winnipeg; Cutknife to Battle River, 40 miles, W. A. Dutton, Winnipeg.



Windsor Street Station, Canadian Pacific Railway, Montreal.
The new addition is shown at the lower right.

including new equipment, \$2,800,000; bungalow camps in Ontario, \$90,000; additional lining, Connaught Tunnel, \$695,000; mechanical department, machinery at various points, \$78,700; improvements in connection with telegraph service, \$39,100. The balance of the amount is required for miscellaneous works to improve facilities and effect economies over the whole system.

"Your directors are of the view that reasonable extensions of your branch line mileage in Alberta and Saskatchewan, in addition to the lines which you have already authorized, are desirable, and your authority will be asked for proceeding with the construction of the following lines and for the issue and sale of a sufficient amount of 4% consolidated debenture stock to meet the expenditure, viz.: Kipp to Bow River, 22 miles; Archive-Wymark Branch, mile 25 to 50, 25 miles; Tuffnell-Prince Albert Branch, 50 miles."

Three Rivers Station.—The Mayor and other Three Rivers, Que., public men are

There is a canopy roof on the Osborne St. front, extending around the end, to protect express wagons being loaded. The plans for the extension were prepared in the Chief Engineer's office, and the contract was let to W. S. Downing Cook, Montreal.

Ontario St. Subway, Montreal.—Tenders were reported to be under the consideration of the Montreal City Council's executive committee, for the rebuilding of the subway under the C.P.R. tracks at Ontario St. The existing subway is too small for the increasing highway traffic, and the Board of Railway Commissioners directed its being rebuilt on account of heavier railway traffic moving over it. The estimated cost of the reconstruction is \$225,000.

Interprovincial & James Bay Ry.—We are officially advised that there is no foundation for the press reports that the C.P.R. was making a survey for a branch from some point on the extension of the Interprovincial & James Bay Ry. to the Quinze Falls, into the Rouyn

Saskatchewan District Buildings.—Tenders were received recently for the erection of a no. 4 station building and platform at Congress; no. 4 sections at Caron and Rush Lake, three no. 2 single and two no. 2 double tool houses, to be built at either of the points named above and to be loaded by the contractor on cars for removal to the stations where required.

Saskatchewan Branch Lines.—The Saskatchewan Legislature passed a resolution recently, asking the C.P.R. to lay track on the branch lines in the province upon which grading has been done, north of the Saskatchewan River, and to start as much new construction this summer as financial conditions will warrant.

Hardisty Locomotive House.—Tenders were received recently for a 3-stall extension to the locomotive house at Hardisty, Sask.

Swift Current Subdivision Bridges.—Tenders were received recently for the construction of concrete abutments for a 40 ft. double track bridge at mile 21.4, and for an 8 ft. concrete rail top culvert at mile 105.7, Swift Current Subdivision, Saskatchewan District.

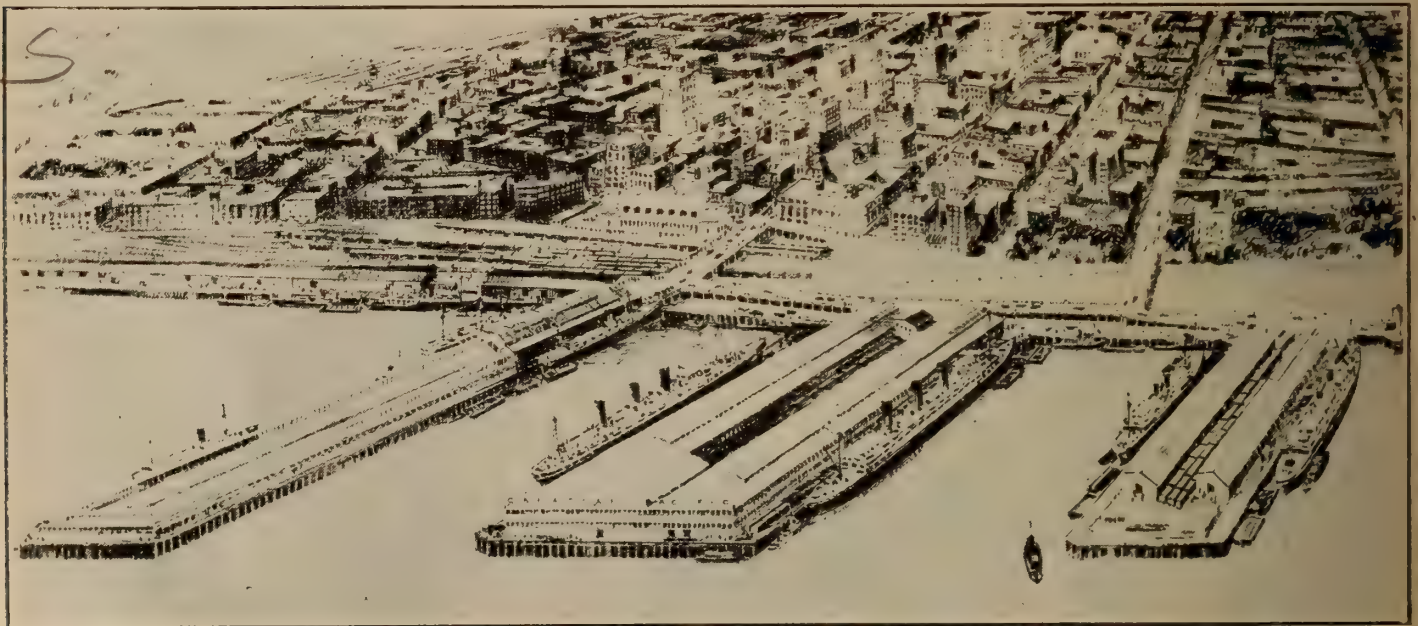
been advised that the Government would do what it could to meet the situation, the deputation went to Montreal to urge upon the C.P.R. management the necessity of proceeding with its projected line through the area. This line is projected to start from the Swift Current-Empress line, and to run westerly about midway between the main line and the branch, to near the Saskatchewan-Alberta boundary, thence northerly to a junction with the Empress branch.

Acme-Empress Extension.—The Board of Railway Commissioners has authorized the opening for traffic of the Acme-Empress line from mile 74.29 to 77.88. This gives the C.P.R. a direct connection with Drumheller coal fields.

Loop Tunnel Relining.—We are officially advised that Nickson Construction Co., Vancouver, B.C., has been given a contract to reline, with standard wooden lining, the tunnel at mile 4.9, Fernie Subdivision. This tunnel is 810 ft. long. The new lining will be placed inside the old, and will be of 10 x 12 in. material, drifted together with $\frac{5}{8}$ in. round iron, with plate dowels of $\frac{1}{4}$ by 5 in. flat iron at each bevel joint. About 500,000 ft.

Vancouver Pier.—The new Pier B.C. at Vancouver, B.C., now under construction, an illustration of which is given herewith, will be 850 ft. long and 331 ft. wide. On it will be erected two double deck sheds, connected at their outer ends to form a U. Each shed will be about 750 x 100 ft., with 4 railway tracks between the sheds, and 2 between each shed and the ship's side. The area within which the pier is being built was dredged and filled in 1921-22.

Canadian and Foreign Eastern Ports.—The suggestion that the British preferential tariff on goods coming into Canada should apply only when they enter through a Canadian seaport, was revived in the House of Commons recently by Hon. J. B. M. Baxter, Conservative, St. John, N.B., who voiced many maritime provinces complaints in connection with Canadian National Ry. matters, the chief one being that maritime port development was being unduly impeded because of the great quantity of Canadian traffic going through U.S. eastern ports. He offered numerous objections to the proposed completion of a Canadian National



Canadian Pacific Railway Piers at Vancouver, B.C.

The new Pier B.C., for the building of which a contract has been let, is shown in the center, between the other two piers.

Consul-Assiniboia Branch.—Construction was started in 1920 on a branch line from Consul, Sask., on the Weyburn-Lethbridge line, southerly and easterly to Assiniboia, and grading on 30 miles was reported completed in 1921, when a contract for grading a further 30-mile section was given. In 1920, track was laid on 1.5 miles out of Consul, when work was suspended. A press report states that track laying has been re-started, and that the rails had been laid April 9 as far as Climax, which is to be the terminus of the branch for the present.

Swift Current—Empress Area.—A deputation of settlers in southwestern Saskatchewan between the main line and the branch from Swift Current to Empress waited upon the Minister of the Interior at Ottawa recently, asking for an extension of time in connection with payments on their pre-empted lands. They stated that they have to haul their grain up to 40 miles to the nearest shipping point on the C.P.R. After having

b.m. fir will be required. The track in the tunnel will be lowered slightly to keep a sufficient height after the relining. Work was expected to be started April 16, and to be completed in 8 or 10 weeks. C. L. Bates is engineer in charge for the contractors, with headquarters at Michel, B.C.

Leancoil Grade Revision.—We are officially advised that a contract has been let to W. A. Dutton, Winnipeg, for grade revision work near Leancoil, Mountain Subdivision, British Columbia District, to reduce the westbound gradient from 1.4% to 0.4%, with a maximum curvature of 10 degrees. The revision will start a few miles east of Leancoil, and end immediately west of that point.

Vancouver Car Repair Shops.—The shops at the foot of Duke St., Vancouver, were burnt April 11, together with 15 cars, the loss being stated in a press report as about \$250,000. F. W. Peters, General Superintendent, British Columbia District, is reported to have stated that they will be rebuilt at once.

Rys. subsidiary line in New England. The Minister of Finance, Mr. Fielding, stated that he wished as much as anyone to see the maritime provinces and ports prosper, but the Dominion owns lines running through U.S. territory to the Atlantic seaboard, over which some traffic must be operated.

Canadian National Rys.' Salaries and Wages.—D. F. Kellner, Edmonton East, Alta., asked in the House of Commons recently: "When wages of Canadian National Rys.' employees were reduced in July 1922, was a proportionate reduction made in the salaries of all officials?" The acting Minister of Railways, Mr. Graham, replied: "The employees' wages were increased from time to time in accordance with the McAdoo and Chicago awards and supplements thereto, but salaries of officers were not increased proportionately, nor have they ever been paid at rates comparable with those enjoyed by officers of competing lines or in other branches of industry; therefore, no reductions were made."

Freight and Passenger Traffic Notes.

The Canadian National Rys. has removed the downtown ticket office in Los Angeles, Cal., to the Hotel Alexandria, 503 South Spring St., from 325 Van Nuys Blvd.

The Pacific Great Eastern Ry. is being asked by West Vancouver, B.C., Council to live up to its agreement with respect to the service of trains on the short line from North Vancouver to Whytecliff.

The C.P.R. dispatched a freight train of 52 cars, with automobiles, from Oshawa, Ont., recently for New York City. The automobiles are being exported to South America, Spain, South Africa and Australia.

The C.P.R., during the present grain exporting season to April 13, hauled 8,233 cars of grain to Vancouver, B.C., against 2,874 cars for the same period of 1921-22. The quantity of grain handled was 12,184,840 bush., against 4,069,384.

The Canadian National Rys. moved 108,139 cars of grain from the prairie provinces during the present season to April 12, against 97,954 cars for the corresponding period of 1921-22. The quantity of grain carried was 142,644,000 bush., against 131,345,000.

A. E. Warren, General Manager, Western Region, Canadian National Rys., is reported to have advised the Yorkton, Sask., Board of Trade on April 10, that a daily train service was under consideration for the Regina-Swan River line, which has only a three-times-a-week service.

The Canadian Passenger Association meeting at Montreal, April 4, arranged for fares, on the basis of fare and a third, for conventions, agricultural exhibitions and tourists for the season. The granting of return tickets at single fares for pilgrimages to Ste. Anne de Beaupre, will not be considered this year.

The Canadian Retail Coal Association decided, April 13, to memorialize the Dominion Government to establish such freight rates as would make Alberta coal available for the Ontario market. The consensus of opinion of the dealers present was that it is not feasible to bring Alberta coal to Ontario under existing rates.

The Mexican Government is reported to have entered into an arrangement with the Munson Steamship Co., New York, under which through bills of lading will be issued for the transfer of freight to all Mexican railways. This service, it is stated, will reduce the water distance between Montreal and Vancouver by about 2,000 miles, and will relieve traffic from the heavy Panama Canal traffic dues. The new service is intended to encourage traffic between Atlantic and Pacific ports.

The Canadian National Rys. gives a train service on the Hudson Bay Ry. from Pas to Pitquetenay, Man., mile 214, on the second and fourth Wednesdays of each month, leaving Pas at 7 a.m., arriving at Pitquetenay at 8 a.m. on the following day, and returning at 8 a.m. on the second and fourth Fridays, reaching Pas at noon on the following day. An additional train was put in operation recently, leaving Pas at 6 a.m. on the first, third, and if there is one, the fifth Wednesday of the month, to mile 82, returning the same day so as to reach Pas about 5 p.m.

The C.P.R. will on June 15 start a gasoline bus service between Peterbor-

ough and McCracken's Landing, Ont., for summer tourist traffic between the railway and Stony Lake district. One bus will be operated, to accommodate passengers on trains 35 and 601 westbound, and 36 and 602 eastbound, and will make two round trips daily. Lakefield is the terminus of the Port Hope and Lakefield Subdivision, Belleville Division, Canadian National Rys., 9.24 miles north of Peterborough. McCracken's Landing, some 10 miles northeast of Lakefield by road, is without railway connection.

The Canadian Pacific Ry. and the Canadian National Rys. arranged recently, in co-operation with the Manitoba Department of Agriculture, for the operation of better farming trains over their lines. The railways each provide a train of 14 cars, which operate over the lines of each company in the province, starting out from Winnipeg, April 30, and completing the tour May 31. The Department of Agriculture provides the live stock and other exhibits, also the lecturers. Stops are to be made twice a day at scheduled points, where lectures and demonstrations will be given.

By schedules filed to become effective during May and June, 1922, the C.P.R. and the Maine Central Rd. proposed to increase carload rates on newsprint paper and certain kindred articles, via the Ohio River gateways from various producing points on their lines to Nashville, Tenn. Upon protest by the Nashville Traffic Bureau and various paper manufacturing companies, the schedules were suspended and the Interstate Commerce Commission ordered a hearing, but as the schedules were withdrawn voluntarily, the hearing was not gone ahead with. By other schedules filed to become effective Jan. 15 and 24, 1923, the same carriers again proposed to increase the rates, and the G.T.R. and Canadian National Rys. proposed corresponding increases. These various schedules were likewise protested, and were suspended by the Interstate Commerce Commission until May 15. A hearing was held before Commissioners Meyer, Eastman and Potter, and in a decision dated March 29, it was found that the rates proposed would be unduly prejudicial to Nashville, unduly preferential to other points, and otherwise unlawful. An order was therefore issued requiring cancellation of the schedules on or before May 14.

The C.P.R. will put on two new daily trains between Toronto and Montreal, both ways, on May 13. It will be operated as no. 41 westbound and 42 eastbound, between the union station, Toronto, and Windsor station, Montreal. Equipment will include compartment car, buffet observation compartment car, standard sleepers and first class car. At present, the C.P.R. has five trains between Toronto and Montreal, as follows: nos. 19 and 20; 35 and 36; 21 and 22; 23 and 24; and 41 and 42. The present 41 and 42, handling the theatrical business largely, operate Saturday, only, no. 42 leaving Toronto 12.30 Sunday morning for Montreal. When the new nos. 41 and 42 go into operation on May 13, the present nos. 41 and 42 will be discontinued. Nos. 19 and 20, 35 and 36, and 21 and 22 are daily trains, all of which use the union station at Toronto. Nos. 23 and 24 are daily except Saturday, and use North Toronto station. Beginning May 13, train no. 23 will leave Montreal

9.30 p.m. instead of 10.30 p.m., and will arrive at North Toronto at 7 a.m. instead of 8 a.m. No. 24 will retain the present schedule, as will all other Montreal-Toronto trains except as stated above. Beginning May 13, train no. 22 will carry sleeping cars with Ottawa passengers, to be set off at Smiths Falls, and picked up by no. 34, Toronto to Ottawa. It has not been decided whether the new nos. 41 and 42 will be permanent, or will be taken off at the end of the summer, and the present 41 and 42 restored. Train 34, Toronto-Ottawa, will, on and after May 13, leave Toronto at 10.30 p.m. instead of 11.15 p.m., and arrive at Ottawa at 7.15 a.m. instead of 7.55 a.m., and train 33, Ottawa-Toronto, will leave Ottawa at 10.15 p.m. instead of 11 p.m., and arrive at Toronto at 7 a.m. instead of 7.45 a.m.

Canadian Railway and Marine World for April, stated that the C.P.R. would cut one hour from the 1922 running time of the Trans-Canada train, which resumes operation May 20, the Montreal and Toronto westbound leaving times to be the same as formerly, with the arriving time at Vancouver one hour earlier, and the eastbound Vancouver leaving time one hour later than formerly, with the Montreal and Toronto arriving times the same as formerly. It was also stated that an additional 20 minutes might be taken off the running time of the eastbound train terminating at Toronto, and the C.P.R.'s new time-table shows that this has been done. During the 1923 season, westbound train 7, originating at Montreal, will gain 5 mins. between Montreal and Ottawa, and 5 mins. between Ottawa and Chalk River, and no. 9, originating at Toronto, will gain 10 mins. between Toronto and MacTier. The consolidated train, no. 7, will leave Sudbury with 10 mins. gained, and the remaining 50 mins. will be picked up as follows: Cartier-Chapleau, 5; Chapleau-White River, 5; Kenora-Winnipeg, 10; Winnipeg-Brandon, 5; Broadview-Moose Jaw, 5; Moose Jaw-Swift Current, 5; Medicine Hat-Calgary, 10; Calgary-Field, 5. Eastbound train 8 will gain the hour as follows: Calgary-Medicine Hat, 15 mins.; Medicine Hat-Swift Current, 5; Swift Current-Moose Jaw, 10; Moose Jaw-Broadview, 5; Broadview-Brandon, 5; Brandon-Winnipeg, 5; Winnipeg-Kenora, 15. The train terminating at Montreal will use the same running time between Sudbury and Montreal as in 1922. The section operating from Sudbury to Toronto as no. 10 will leave Sudbury 5 mins. earlier than in 1922, and will pick up 10 mins. between Sudbury and MacTier and 5 mins. between MacTier and Toronto, thus gaining 20 mins. in addition to the hour saved on the transcontinental trip by both sections of the train.

Canadian National Rys. Bank Accounts.—Acting Minister of Railways and Canals G. P. Graham, stated in the House of Commons recently, in answer to questions by J. H. Harris, East York, Ont., that the Canadian National Express Co., and the Canadian National Telegraph Co.'s bank accounts had been transferred from the Canadian Bank of Commerce to the Royal Bank of Canada, on Dec. 1 and Dec. 30, 1922, respectively. Notification had not been given, up to Feb. 12, of the intended transfer of other accounts.

Mainly About Railway People Throughout Canada.

John Matheson Bannerman, who has been appointed Superintendent of Investigation, Western Region, Canadian National Rys., Winnipeg, was born at Poplar Point, Man., July 16, 1870, and entered railway service May 20, 1901, since when he has been, to Feb. 19, 1902, timekeeper, Canadian Northern Ry., Winnipeg; Feb. 20, 1902, to May 31, 1904, constable, same road, Winnipeg; June 1, 1904, to June 30, 1911, baggage agent, same road, Winnipeg; July 1, 1911, to Jan. 4, 1913, station master, same road, Winnipeg; Jan. 5, 1913, to Aug. 31, 1916, Assistant Chief Special Agent, same road, Winnipeg; Sept. 1, 1916, to March 15, 1923, Chief Special Agent, same road, and latterly Canadian National Rys. west of Port Arthur, Ont., Winnipeg. He is a member of the Chief Constables' Association of Canada and is the Manitoba representative on its executive committee.

Aubrey Cecil Barker, who has been appointed Superintendent of Transportation, Atlantic Region, Canadian National Rys., Moncton, N.B., was born at Lacadie, Que., Aug. 5, 1878, and entered railway service Oct. 1, 1895, since when he has been, to April 1900, agent and operator at various points, Eastern Division, C.P.R.; May 1900 to Oct. 1913, dispatcher and Chief Dispatcher consecutively, Lake Superior Division, C.P.R., Chapleau, Ont.; Oct. 1913 to Oct. 1916, Inspector of Stations, Trains and Train Dispatching, Canadian Government Rys., Moncton, N.B.; Oct. 1916 to Sept. 1917, Supervisor of Telegraph and Time Service, and from Sept. 1917 to Dec. 1, 1920, also Assistant to General Superintendent, Maritime District, Canadian National Rys., Moncton; Dec. 1, 1920, to Feb. 28, 1923, Superintendent, Moncton Division, Maritime District, Canadian National Rys., Moncton.

William Earl Barnes, who has been appointed Superintendent of Motive Power, Maritime District, Atlantic Region, Canadian National Rys., Moncton, N.B., was born at Shediac, N.B., July 24, 1879, and entered railway service April 20, 1899, since when he has been, to Jan. 1902, apprentice; Jan. 1902 to Jan. 1906, draftsman; Jan. to Dec. 1906, machinist; Dec. 1, 1906, to Oct. 1907, draftsman; Oct. 1907 to Jan. 1909, fitter; Jan. 1909 to April 1910, draftsman; April 1910 to Jan. 1911, locomotive house inspector; Jan. 1911 to Sept. 1912, acting master mechanic, Intercolonial Ry., Moncton; Sept. 1912 to Aug. 1917, Master Mechanic, Canadian Government Rys., Moncton; Aug. 1917 to Dec. 1918, General Master Mechanic, lines east of Mont Joli, Maritime District, Canadian Government Rys., Moncton; Dec. 1918 to March 1923, Master Mechanic, Canadian National Rys., Moncton.

Edwin Roy Battley, who has been appointed Superintendent Motive Power, Montreal District, Central Region, Canadian National Rys., Montreal, was born at Stratford, Ont., Oct. 21, 1886, and entered G.T.R. service, Dec. 1, 1902, since when he has been, to Dec. 1, 1907, machinist apprentice, Stratford, Ont.; Dec. 1, 1907, to Jan. 1909, machinist, Stratford; Jan. 1909 to Mar. 12, 1910, Shop Inspector, Stratford, Mar. 12, 1910, to July 1, 1914, Locomotive Foreman, Fort Erie, Ont.; July 1, 1914, to Sept. 1, 1917, General Foreman, Deering, Me.; Sept. 1, 1917, to Sept. 1, 1918, Master Mechanic, East-

ern Lines, Montreal; Sept. 1, 1918, to Feb. 28, 1923, Superintendent of Motive Power, Eastern Lines, G.T.R., Montreal.

Leonidas Charles Boisjoly, who has been appointed Superintendent of Investigation, Quebec District, Central Region, Canadian National Rys., Montreal, was born at St. Gabriel de Brandon, Que., Feb. 28, 1864, and entered railway service in 1892, since when he has been, to 1902, freight clerk and various other positions, New York, New Haven & Hartford Ry., Woonsocket, R.I.; 1902 to 1919, constable, special agent, inspector of police, Algoma District, C.P.R.; 1919 to March 1923, District Special Agent, and Superintendent of Investigation, Quebec District, Canadian National Rys., Montreal.

Adam Brown, formerly Postmaster, Hamilton, Ont., and also formerly Vice President, Great North Western Telegraph Co., celebrated his 97th birthday April 3. He is father of Sir George McLaren Brown, European General Manager, C.P.R., London, Eng.

T. Cooper, who has been appointed Assistant Superintendent, Investigation Department, Northern Ontario, Southwestern Ontario and Montreal Districts, Central Region, Canadian National Rys., Toronto, was born in London, Eng., March 7, 1887, and entered railway service in Jan. 1911, since when he has been, consecutively, to 1913, assistant agent, Sellwood, Ont., freight clerk, car accountant, telegraph operator, ticket agent, cashier, and relieving agent, Canadian Northern Ontario Ry., and in Investigation Department, Canadian Northern Ry.; 1913 to 1918, Special Agent, C.N.R.; 1918 to March 16, 1923, Chief Special Agent, Canadian Northern Ry., latterly Canadian National Rys., Toronto.

Thomas Harold Cooper, who has been appointed Assistant to Vice President, Finance, Canadian National Rys., Montreal, was born in Lancashire, England, Sept. 19, 1887, and entered railway service in 1904, since when he has been, to 1912, successively, clerk, stenographer, engineer's assistant in Chief Engineer's office, Lancashire & Yorkshire Ry., Manchester, England; June 1912 to Aug. 31, 1915, clerk, Auditor of Disbursements' office, G.T.R., Montreal; Sept. 1, 1915, to June 30, 1918, bookkeeper, same office; July 1, 1918, to July 1, 1919, chief bookkeeper, same office, and assistant to General Auditor; July 1, 1919, to Feb. 28, 1923, Assistant to Comptroller, Montreal.

Edmund Crawford, who has been appointed Superintendent Car Service, Western Region, Canadian National Rys., Winnipeg, was born at Fernhill, Ont., March 30, 1884, and entered railway service Oct. 7, 1901, since when he has been, to Dec. 20, 1905, clerk, Pere Marquette Rd., Detroit, Mich.; April 1 to Sept. 1, 1906, billing clerk, Pennsylvania Rd., Washington, D.C.; Dec. 1, 1907, to April 30, 1912, chief yard clerk, G.T.R., London, Ont.; June 15 to Sept. 30, 1912, chief clerk to General Foreman, G.T.R., Toronto; May 15, 1913, to July 30, 1915, in Car Service and Freight Departments, C.P.R., Vancouver, B.C.; Sept. 2, 1915, to May 1, 1916, Travelling Freight Agent, Canadian Northern Ry., Toronto; May 1 to Dec. 1, 1916, chief clerk to Superintendent of Transportation, Canadian Northern Ry., Toronto; Dec. 1, 1916, to Oct. 21, 1918, Superintendent of Car Service, Eastern Lines,

Canadian Northern Ry., Toronto; Oct. 21, 1918, to March 1923, Superintendent of Car Service, Western Lines, Canadian National Rys., Winnipeg.

R. Creelman, who has been appointed Passenger Traffic Manager, Western Region, Canadian National Rys., Winnipeg, entered railway service Sept., 1891, since when he has been, to 1893, messenger, City Freight Agent's office, G.T.R., Toronto; 1893 to 1897, ticket clerk, G.T.R. city office, Toronto; 1897 to 1900, chief clerk, District Passenger Agent's office, G.T.R., Toronto; Jan. 1, 1900, to Aug. 1901, in General Passenger Agent's office, C.P.R., Winnipeg; Aug. 1901 to Sept. 1, 1903, in Passenger Traffic Department, Canadian Northern Ry., Winnipeg; Sept. 1, 1903, to July 1, 1906, City Ticket Agent, Northern Pacific Ry., Winnipeg; July 1, 1906, to July 1, 1909, Travelling Passenger Agent, Canadian Northern Ry., St. Paul, Minn.; July 1 to Oct. 1909, Commercial Agent, Canadian Northern Ry., St. Paul, Minn.; Oct. 1909 to Mar. 1, 1911, Assistant General Passenger Agent, Canadian Northern Ry., Winnipeg; Mar. 1, 1911, to Dec. 31, 1918, General Passenger Agent, Western Lines, Canadian Northern Ry., Winnipeg; Jan. 1, 1919, to Aug. 24, 1920, Assistant Passenger Traffic Manager, Western Lines, Canadian National Rys., Winnipeg; Aug. 24, 1920, to March 9, 1923, Assistant Passenger Traffic Manager, Western Lines, Canadian National Rys., Winnipeg.

Wilfrid Lawson Crighton, who has been appointed Assistant Manager, Advertising Bureau, Canadian National Rys., Montreal, was born at Derby, Eng., Nov. 9, 1871, and entered railway service in May 1891, since when he has been, to May 1896, advertising clerk, C.P.R., Toronto; May 1896 to June 1901, in advertising department, C.P.R., Montreal; June 1901 to Feb. 1919, Advertising Agent, Canadian Government Rys., Moncton, N.B.; Feb. 1919 to March 9, 1923, General Advertising Agent, Canadian National Rys., Toronto.

Arthur Crumpton, who has been appointed Valuation Engineer, Central Region, Canadian National Rys., Toronto, was born there Jan. 1, 1869, and entered G.T.R. service Jan. 25, 1889, since when he has been, to 1892, rodman and draftsman, Maintenance of Way, field and office work, bridge renewals, and branch line construction, Northern and Northwestern Division, Toronto, Allandale and Hamilton, Ont.; 1893 to 1895, Assistant Engineer, Great Western Division, Hamilton, Ont.; 1896 to 1901, Assistant Engineer, field and office work in connection with the permanent renewal of 300 bridges between the Atlantic Ocean and the Detroit River; 1902 to 1906, Assistant Engineer, Montreal; 1907 to 1915, on location surveys for new lines in Indiana, Michigan, Ontario, Quebec, Massachusetts and New York State; 1916 to Oct. 1918, Assistant Valuation Engineer, lines in Maine, New Hampshire, Vermont, New York, Indiana and Illinois; Oct. 1918 to Feb. 28, 1923, Valuation Engineer, G.T.R., Montreal.

Charles P. Disney, who has been appointed Assistant Bridge Engineer, Central Region, Canadian National Rys., Toronto, was born at Montreal, June 11, 1877, and from 1902 to 1905 was bridge draftsman, Dominion Bridge Co., Montreal; 1905 to 1906, steel checker, Locomotive & Machine Co. (afterwards

Montreal Locomotive Works), Montreal; 1906 to 1907, taking a course at Institute of Technology, Boston, Mass.; 1907 to 1914, designing and estimating, Bridge Engineer's office, National Transcontinental Ry., Ottawa; Oct. 1914 to Sept. 1915, in bridge department, Intercolonial Ry., Moncton, N.B.; 1915 to 1919, on military service, being for 18 months a sapper with the Canadian Engineers, and then 3 years consecutively, Lieutenant and Captain in the Royal Engineers, his service in France being continuous for four years; Jan. 1920 to Feb. 28, 1923, Bridge Engineer, Eastern Lines, Canadian Northern Ry., Toronto.

Edward Cassidy Elliott, who has been appointed General Passenger Agent, lines, Kingston, Harrowsmith, Kearney, Callender, LaReine and east, Central Region, Canadian National Rys., Toronto, was born at Montreal, Oct. 12, 1877, and entered G.T.R. service June 15, 1894, since when he has been, to Feb. 1, 1898, junior clerk; Feb. 1, 1898, to June 1, 1902, clerk; June 1, 1902, to June 1, 1907, freight clerk; June 1, 1907, to June 1, 1913, excursion clerk; June 1, 1913, to Jan. 1, 1916, chief clerk to General Passenger Agent; Jan. 1, 1916, to Feb. 1, 1920, chief clerk to Passenger Traffic Manager; Feb. 1, 1920, to March 9, 1923, District Passenger Agent, G.T.R., all at Montreal.

George Fisher, who has been appointed Superintendent of Car Equipment, Central Region, Canadian National Rys., Toronto, was born at Sheffield, Eng., Feb. 19, 1867, and entered G.T.R. service Sept. 20, 1888, since when he has been, to March 10, 1891, car repairer, Brantford, Ont.; March 10, 1891, to Sept. 15, 1899, car repairer, Fort Erie, Ont.; Sept. 15, 1899, to March 4, 1904, night foreman, Fort Erie, Ont.; March 4, 1904, to July 1, 1919, Car Foreman, St. Thomas, Ont.; July 1, 1919, to July 16, 1920, General Travelling Car Inspector, Montreal; July 16, 1920, to March 1, 1923, Master Car Builder, London, Ont.

W. P. Fitzsimmons, who has been appointed Commissioner of Industries, Atlantic and Central Regions, Canadian National Rys., Montreal, was born at Detroit, Mich., Oct. 27, 1868, and entered railway service as messenger in Assistant General Freight Agent's office, G.T.R., at Detroit, April 15, 1884, since when he has been consecutively to Feb. 10, 1896, in various positions general freight department, same road, at Detroit; Feb. 1896 to Jan. 1897, Travelling Freight Agent, same road; Jan. 1897 to Nov. 1898, secretary to General Freight Agent, same road, Montreal; Nov. 1898 to May 1900, chief clerk General Freight Agent's office, same road, Montreal; May 1900 to April 1902, Division Freight Agent, same road, Detroit, Mich., and Manager, Grand Trunk Despatch Fast Freight Line; May 1902 to Sept. 1907, Manager, Lackawanna-Grand Trunk Line, Buffalo, N.Y.; Sept. 1907 to Apr. 1909, Manager, Bureau of Transportation and Manufacturers, Detroit, Mich., Board of Commerce; April 1909 to March 9, 1923, Commissioner of Industries, G.T.R., Montreal.

Otis Grant, who has been appointed Superintendent of Leaside Shops, Central Region, Leaside, Ont., was born at McAdam Jct., N.B., July 13, 1869. He first entered railway service in May, 1884, since when he has been, to Oct. 1889, messenger boy, New Brunswick Ry. (now C.P.R.); Oct. 1889 to May 1895, machinist's helper, C.P.R., McAdam Jct., N.B.; May 1895 to May 1904, machinist,

C.P.R., McAdam Jct.; June 1904 to Oct. 1904, leading hand machinist, C.P.R., McAdam Jct.; Nov. 1904 to Feb. 1906, Asst. Foreman, C.P.R., McAdam Jct.; Feb. 1906 to Jan. 1907, Shop Foreman, C.P.R., McAdam Jct.; Jan. 1907 to Aug. 1908, Locomotive Foreman, C.P.R., McAdam Jct.; Feb. 1909 to May 1909, machinist, Canadian Northern Ontario Ry., Parry Sound; May 1909 to Sept. 1913, Machine Shop Foreman, C.N.O.R., Parry Sound; Oct. 1913 to June 1915, Shop Foreman, C.N.O.R., Parry Sound; July 1915 to Nov. 1919, Locomotive Foreman, C.N.O.R., Parry Sound; Nov. 1919 to Feb. 29, 1923, Superintendent of Shops, Canadian National Rys., Leaside, Ont.

Gilbert M. Hair, who has been appointed Solicitor, Western Region, Canadian National Rys., Winnipeg, was born at Ceres, Fifeshire, Scotland, March 13, 1878, and studied law at Edinburgh. He came to Canada in Oct. 1901, engaged in loan and trust company work, and entered railway service in Nov. 1912, since when he has been, to Sept. 1918, assistant in Legal Department, Grand Trunk Pacific Ry., Winnipeg; Sept. 1, 1918, to Oct. 1, 1920, Assistant Solicitor, G.T.P.R., Winnipeg; Oct. 1, 1920, to Feb. 23, 1923, Assistant Solicitor, Canadian National Rys., Winnipeg. He was called to the Alberta Bar July 29, 1913.

Robert Wetmore Hannington, who has been appointed Assistant Regional Counsel, Western Region, Canadian National Rys., Vancouver, B.C., was born at Dorchester, N.B., May 22, 1868, graduated from the New Brunswick University with the degree of B.A., in June 1888, and was called to the New Brunswick bar in Oct. 1892, after which he practiced at St. John, N.B., from 1892 to 1897. In Jan. 1897 he removed to Nelson, B.C., where he engaged in private practice; removed to Vancouver, Sept. 1, 1908, and practiced in partnership as Russell, Russell & Hannington, and from Jan. 1, 1912, as Harris, Bull, Hannington & Mason. On Nov. 1, 1915, he was appointed City Solicitor, Victoria, B.C., and on Sept. 1, 1919, General Attorney, Canadian National Rys., Vancouver, B.C. which position he held to Feb. 15, 1923, the date of his present appointment.

Arthur John Hills, who has been appointed Assistant to Vice President of Operation and Construction, Canadian National Rys., Montreal, was born at Toronto Feb. 15, 1879, and entered Canadian Northern Ry. service in Apr. 1899, since when he has been, to June, 1901, stores and material agent, Construction Department, in Manitoba; June 1901 to Dec. 1903, clerk, General Superintendent's office, Winnipeg; Dec. 1903 to June 1908, in Third Vice President's office, Toronto; June 1908 to July 1914, Superintendent, C.N. Ontario Ry., Toronto; July 1914 to Aug. 1916, General Superintendent, Ontario Lines, Toronto; Aug. 1916 to Feb. 10, 1917, in Third Vice President's office, Toronto; Feb. 10, 1917, to Nov. 1918, Assistant to the Executive, Canadian Northern Ry., Toronto; Nov. 1918 to Feb. 28, 1923, Assistant to President, Canadian National Rys., Toronto.

W. P. Hinton, ex-Vice President and General Manager, Grand Trunk Pacific Ry., is reported to be interested in a project to establish a tar sand extraction and refinery plant, near McMurray, Alta.

Gilbert L. Hodge, who has been appointed Chief Special Agent, Central Vermont Ry., St. Albans, Vt., was born at Lowell, Mass., Nov. 3, 1879, and entered Central Vermont Ry. service July 5, 1903, since when he has been, to 1905,

trainman, St. Albans; 1905 to 1911, conductor, St. Albans; from 1911 to 1915 he was inspector for the Springfield Audit Co., Springfield, Mass., and from 1915 to March, 1923, Division Special Agent, Central Vermont Ry., St. Albans.

Charles Ketchum Howard, who has been appointed General Tourist Agent, Canadian National Rys., Montreal, was born at St. Andrews, N.B., Aug. 28, 1877, and entered railway service April 1893, since when he has been, to 1900, operator and agent at various points, Atlantic Division, C.P.R.; 1900 to 1901, agent, C.P.R., Brownville Jct., Me.; 1901 to 1906, agent, C.P.R., McAdam Jct., N.B.; 1906 to 1910, agent, C.P.R., Fredericton, N.B.; 1910 to 1911, Superintendent, Aroostook Valley Rd., Presque Isle, Me.; 1911 to 1912, Travelling Freight Agent, C.P.R., St. John, N.B.; 1912 to 1915, Right of Way Agent, St. John and Quebec Ry., Fredericton, N.B.; 1915 to March 1916, agent, Canadian Government Railways, Woodstock, N.B.; March 1916 to Sept. 1, 1917, Commercial Agent, Canadian Government Railways, Boston, Mass.; Sept. 1, 1917, to July 1, 1920, General Agent, Traffic Department, Canadian Government Rys., latterly Canadian National Rys., Boston, Mass.; July 1, 1920, to March 1, 1923, General Tourist Agent, Canadian National Rys., Toronto.

T. C. Hudson, who has been appointed Assistant General Superintendent Motive Power, Central Region, Canadian National Rys., Toronto, was born at Brockville, Ont., Feb. 20, 1873, and entered railway service May 1, 1886, since when he has been, to Jan. 1887, messenger C.P.R., Carleton Jct., Ont.; Jan. 1887 to Jan. 1892, machinist apprentice, C.P.R., Carleton Jct., Ont.; Jan. 1892 to June 1901, general machinist, C.P.R., Chapleau, Ont., and other points; June 1901 to May 1903, chargeman, C.P.R., Smiths Falls, Ont.; May 1903 to Jan. 1906, Foreman General Repairs, C.P.R., Carleton Jct., Ont.; Jan. to Dec. 1906, Locomotive Foreman, C.P.R., Ottawa; Jan. to July, 1907, Shop Foreman, Canadian Northern Ry., Parry Sound, Ont.; July 1907 to May 1908, Master Mechanic, Canadian Northern Quebec Ry., Shawinigan Jct., Que.; May 1908 to Aug. 1915, Master Mechanic, C.N.Q.R., and Quebec & Lake St. John Ry., Quebec, Que.; Aug. 1915 to Dec. 1918, Master Mechanic, lines east of Ottawa, Canadian Northern Ry., Joliette, Que.; Dec. 1918 to May 1919, General Master Mechanic, Quebec District, Canadian National Rys., Joliette, Que.; May 1919 to Feb. 28, 1923, General Master Mechanic, Canadian National Rys., Montreal.

T. M. Hyman, who has been appointed Superintendent Montreal Car Shops, Central Region, Canadian National Rys., Montreal, was born near Bristol, Eng., June 12, 1885, and after serving an apprenticeship in car construction in England, came to Canada and entered G.T.R. service at Point St. Charles shops, Montreal, and in 1914 was Car Inspector. On the outbreak of war in 1914 he enlisted for active service and went overseas with the Second Brigade of the first contingent, and served throughout the war, receiving the Distinguished Conduct Medal; 1919 to June 1920, Assistant General Foreman, Car Department, Point St. Charles Shops, G.T.R., Montreal; June 1920 to Feb. 1921, Master Car Builder, G.T.R., London, Ont.; Feb. 1921 to Feb. 28, 1923, Master Car Builder, Point St. Charles shops, G.T.R., Montreal.

George C. Jones, who has been appointed Assistant General Manager, Cen-

tral Region, Canadian National Rys., was born at Clyde, N.Y., Sept. 24, 1869, and entered railway service in June, 1874, since when he has been, to 1878, messenger, yard clerk and operator, consecutively, Erie Rd.; 1878 to 1887, dispatcher, Cleveland, Cincinnati, Chicago & St. Louis Ry., Erie Rd., and Chicago, Burlington & Quincy Rd., respectively, except for a short service with the Western Union Telegraph Co.; 1887 to 1896, dispatcher, chief dispatcher, and district operator, Wabash Rd.; July 1896 to Mar. 1898, Superintendent, G.T.R., London, Ont.; Mar. 1898 to May 1899, Superintendent, G.T.R. and Wabash Rd., St. Thomas, Ont.; May 1899 to Dec. 31, 1904, Superintendent, Middle Division, G.T.R., Toronto; Jan. 1, 1905, to Sept. 1, 1917, General Manager, and Vice President and General Manager consecutively, Central Vermont Ry., St. Albans, Vt.; Sept. 1, 1917, to Oct. 31, 1922, Assistant to President, G.T.R., Toronto; Oct. 31, 1922, to Feb. 28, 1923, attached to Vice President and General Manager's office, G.T.R., Montreal.

George Frederick Knight, who has been appointed Superintendent of St. Malo Shops, Central Region, Canadian National Rys., St. Malo, Que., was born at Charlottetown, P.E.I., Apr. 3, 1879, and entered railway service Nov. 1896, since when he has been, to Nov. 1901, apprentice and machinist, Intercolonial Ry., Moncton, N.B.; Dec. 1901 to Sept. 1904, machinist, Albion Iron Works, Vancouver, B.C.; Apr. 1905 to 1908, draftsman, Intercolonial Ry., Moncton, N.B.; 1908 to 1909, engineer in charge of office staff equipping new I.R.C. shops, at Moncton, N.B., Riviere du Loup, Que., Halifax, N.S., and Charlottetown, P.E.I.; 1910 to 1911, draftsman, Mechanical Department, I.R.C., Moncton, N.B.; 1911, Mechanical Engineer, Chief Engineer's office, I.R.C., Moncton, N.B.; 1912 to 1914, Efficiency Engineer, Power Plant, Canadian Government Rys., Moncton, N.B.; 1915 to 1918, Assistant Engineer, under Signal and Electrical Engineer, C.G.R., Moncton, N.B.; Sept. 1918 to May 1919, engineer in charge of equipping St. Malo shops, C.G.R.; May 1919 to Feb. 28, 1923, Superintendent of Shops, Canadian National Rys., St. Malo, Que.

R. W. Long, who has been appointed General Freight Agent, Central Region, Canadian National Rys., Montreal, was born at Appin, Ont., Mar. 20, 1873, and entered G.T.R. service in March 1889, since when he has been, to Oct. 1896, operator and clerk in Commercial Agent's and Local Freight Agent's offices, Buffalo, N.Y.; Sept. 1901 to May 1904, Commercial Agent, Buffalo, N.Y.; June 1904 to July 1907, Division Freight Agent, Stratford, Ont.; July 1907 to June 1919, Division Freight Agent, Hamilton, Ont.; June 1919 to March 9, 1923, Division Freight Agent, Toronto.

George Peter MacLaren, who has been appointed Engineer Maintenance of Way, Central Region, Canadian National Rys., Toronto, was born at London, Ont., Apr. 4, 1878, and was, from Jan. to Dec. 1897, rodman, draftsman and instrument man on sewage disposal work, under City Engineer, London, Ont.; Jan. to Nov. 1898, Resident Engineer between St. Thomas and Walkerville, Ont., Lake Erie & Detroit River Ry.; Jan. to Dec. 1899, draftsman, Algoma Central & Hudson Bay Ry.; 1900 to 1902, transit man on location, Canadian Northern Ry.; 1902 to 1904, Resident Engineer on construc-

tion, same road; 1904 to 1911, Division Engineer on construction, in Nova Scotia, Quebec and Ontario, same road; 1911 to 1915, District Engineer, North Bay District, same road; 1915 to 1916, Division Engineer, Toronto Division, same road. In 1916 he enlisted for military service and went overseas as Chief Engineer of the 10th Battalion, Canadian Railway Troops, and on his return to civil life in July 1919, he was appointed Engineer, Ontario District, Canadian National Rys., Toronto, which position he held until Jan. 15, 1921; Jan. 15, 1921, to Feb. 23, 1923, Engineer Maintenance of Way, Eastern Lines, Canadian Northern Ry., Toronto.

R. F. MacLeod, who has been appointed Assistant to General Passenger Traffic Manager, Canadian National Rys., Montreal, entered railway service Jan. 1, 1903, since when he has been, to April 1905, clerk, in General Superintendent's office, and in General Passenger Department, Intercolonial Ry., Moncton, N.B.; April 1905 to April 1912, rate clerk, General Passenger Department, same road, Moncton; April 1912 to Dec. 1, 1915, excursion clerk, same department, Moncton; Dec. 1, 1915, to May 1, 1917, Assistant to General Passenger Agent, Canadian Government Rys., Moncton; May 1, 1917, to Jan. 1, 1919, Assistant General Passenger Agent, C.G.R., Moncton; Jan. 1, 1919, to March 12, 1923, Assistant to Passenger Traffic Manager, Canadian National Rys., Montreal.

G. E. McCoy, who has been appointed Superintendent of Power Equipment, Atlantic Region, Canadian National Rys., Moncton, N.B., was born there Jan. 8, 1886, and entered railway service Oct. 16, 1900, since when he has been, to 1915, apprentice and draftsman, Intercolonial Ry., Moncton; 1915 to 1916, chief draftsman, Canadian Government Rys., Moncton; 1916 to Feb. 1919, Assistant Master Car Builder, Canadian Government Rys., Moncton; Feb. 1919 to Feb. 29, 1923, Master Car Builder, Canadian Government Rys., Moncton.

W. G. Manders, who has been appointed Freight Traffic Manager, Western Region, Canadian National Rys., Winnipeg, was born at Owen Sound, Ont., July 24, 1876, and entered railway service in Apr. 1897, since when he has been, to Feb. 1901, clerk and stenographer, Local Freight Office, C.P.R., Owen Sound, Ont.; Feb. to July 1901, chief clerk, Local Freight Office, C.P.R., Fernie, B.C.; July 1901 to Dec. 31, 1903, clerk, General Freight Office, Canadian Northern Ry., Winnipeg; Jan. 1, 1904, to Jan. 1, 1907, chief clerk in charge of loss and damage and overcharge freight claims, General Freight Office, C.N.R., Winnipeg; Jan. 1, 1907, to May 1, 1909, chief clerk, Freight Traffic Department, C.N.R., Winnipeg; May 1, 1909, to Feb. 29, 1916, Assistant General Freight Agent, C.N.R., Winnipeg; Feb. 29, 1916, to Dec. 1918, General Freight Agent, Western Lines, Canadian Northern Ry., Winnipeg; Dec. 1918 to Feb. 1923, Assistant Freight Traffic Manager, Western Lines, Canadian Northern Ry., latterly Canadian National Rys., Winnipeg.

Charles R. Moore, who has been appointed General Superintendent of Transportation, Central Region, Canadian National Rys., Toronto, was born at Hamilton, Ont., Oct. 12, 1867, and entered G.T.R. service in 1883, since when he has been, successively, junior clerk, Mechanical Accountant's office, Hamilton, Ont., and in Motive Power, Car, Maintenance of Way and Transportation

Departments, Montreal, and at various terminals on the system. In 1911, being then chief clerk to Superintendent, Toronto, he was appointed chief clerk to Vice President H. G. Kelley, and in May 1916, Assistant to Vice President, Construction, Operation and Maintenance (H. G. Kelley), and has been, from Sept. 1917 to May 1920, Assistant to Vice President in charge of Motive Power, Car Equipment and Machinery (W. D. Robb), Montreal, and from May 1920 to Feb. 28, 1923, General Superintendent of Car Service, G.T.R., Montreal.

Jules Edouard Morazain, who has been appointed General Superintendent, Quebec District, Central Region, Canadian National Rys., Quebec, Que., was born at Wheatland, Que., July 31, 1875, and entered railway service May 3, 1890, since when he has been, to May 21, 1890, freight clerk, C.P.R., Drummondville, Que.; Aug. 1, 1890, to Jan. 8, 1891, night operator, C.P.R., Foster, Que.; Jan. 9, 1891, to Aug. 12, 1891, day operator, C.P.R., Richford, Vt.; Aug. 12, 1891, to Aug. 15, 1892, at college at Sherbrooke, Que.; Aug. 15 to Sept. 26, 1892, night operator, C.P.R., Sutton, Que.; Sept. 26, 1892, to Feb. 9, 1894, night and day operator, C.P.R., Highlands, Que.; Feb. 9 to July 15, 1894, day operator, C.P.R., Richford, Vt.; July 15 to Oct. 12, 1894, relieving agent and operator at various points, C.P.R.; Oct. 12, 1894, to May 27, 1895, day operator, C.P.R., Highlands, Que.; May 27, 1895, to Sept. 24, 1901, agent, C.P.R., Highlands, Que.; Sept. 24, 1901, to Nov. 15, 1908, agent, C.P.R., Mile End, Que.; Nov. 15, 1908, to Feb. 1, 1913, General Agent, Operating Department, C.P.R., Quebec, Que.; Feb. 1 to Dec. 3, 1913, Assistant Superintendent, District 3, Eastern Division, C.P.R., Quebec, Que.; Dec. 3, 1913, to Feb. 7, 1914, Assistant Superintendent, District 2, Eastern Division, C.P.R., Montreal; Feb. 7 to Oct. 21, 1914, Assistant Superintendent, District 3, Eastern Division, C.P.R., Montreal; Oct. 22, 1914, to Feb. 10, 1915, acting Superintendent District 1, Eastern Division, C.P.R., Farnham, Que.; Feb. 11, 1915, to Apr. 1, 1916, Assistant Superintendent, District 3, Eastern Division, C.P.R., Montreal; Apr. 1 to Nov. 1916, Superintendent, District 1, Transcontinental Division, Canadian Government Rys., Quebec, Que.; Nov. 1916 to Dec. 1918, Superintendent, District 1, Intercolonial Division, Canadian Government Rys., Levis, Que.; Dec. 1918 to Feb. 29, 1923, General Superintendent, Quebec District, Canadian National Rys., Quebec, Que.

Charles F. Needham, who has been appointed Assistant to General Manager, Central Region, Canadian National Rys., Toronto, was born at London, Ont., Dec. 9, 1877, and entered G.T.R. service July 2, 1898, since when he has been, with the exception of short periods in the road and transportation department and the motive power department, successively as follows: clerk, head time keeper, accountant, chief clerk, and special assistant, to 1905, at Toronto, and to May 17, 1920, at Montreal; May 17, 1920, to Feb. 28, 1923, Assistant to General Superintendent of Motive Power and Car Departments, G.T.R., Montreal.

Reginald Egerton Perry, who has been appointed Manager, Tariff Bureau, Central Region, Canadian National Rys., Toronto, was born at Drayton, Ont., July 5, 1876, and entered railway service Oct. 2, 1891, since when he has been, to Feb. 28, 1898, clerk, General Freight Department, C.P.R., Toronto; Mar. 1, 1898, to June 30, 1907, clerk, General

Freight Department, Intercolonial Ry., Montreal; July 1, 1907, to July 31, 1909, Chief of Tariff Bureau, I.R.C., Montreal; Aug. 1, 1909, to Feb. 1, 1914, Assistant General Freight Agent, I.R.C., Montreal; Feb. 2, 1914, to Jan. 9, 1919, Assistant General Freight Agent, Intercolonial and Prince Edward Island Rys. (Canadian Government Railways), Moncton, N.B.; Jan. 9, 1919, to March 9, 1923, Assistant General Freight Agent, Eastern Lines, Canadian National Rys., Montreal.

Alfred Edward Plant who has been appointed acting Comptroller, Atlantic Region, Canadian National Rys., Moncton, N. B., was born Apr. 8, 1878, and entered G. T. R. service Jan. 1, 1908, since when he has been, to July 1, 1912, clerk, July 1, 1912, to Aug. 1, 1914, bookkeeper; Aug. 1, 1914, to July 1, 1918, chief clerk, all at Montreal; July 1, 1918 to March 1, 1920, General Auditor and Freight Claims Agent, G.T.R. lines in New England, United States Railroad Administration, Portland, Me.; March 1, 1920, to Feb. 19, 1923, Local Auditor, G.T.R., Portland, Me.

Walter Pratt, who has been appointed General Manager, Sleeping, Dining and Parlor Cars and Railway Restaurants, Canadian National Rys., Montreal, was born at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870, and entered railway service Oct. 1, 1883, since when he has been, to June, 1887, clerk, Audit Department, C.P.R., Winnipeg; July, 1887, to May, 1889, in Purchasing Department, and cashier, Treasury Department, C.P.R., Winnipeg; June 1889 to Oct. 1891, in Engineering Department, C.P.R., Winnipeg; Nov. 1891 to Feb. 1892, chief clerk, Purchasing Department, C.P.R., Winnipeg; Mar. 1892 to Dec. 1894, accountant, Dining Car Department, C.P.R., Winnipeg; Jan. 1895 to Dec. 1896, Sleeping and Dining Car Agent, C.P.R., Winnipeg; Jan. 1897 to May 1902, Superintendent, Sleeping and Dining Cars and Hotels, C.P.R., Winnipeg; June 1902 to Feb. 1910, Superintendent, Sleeping, Dining and Parlor Cars and News Department, Canadian Northern Ry., Winnipeg; Mar. 1910 to Jan. 1911, Superintendent, Sleeping, Dining and Parlor Cars, Hotels and News Department, same road, Winnipeg; Feb. 1911 to Dec. 1918, General Superintendent, same department, C.N.R. System, Winnipeg; Dec. 1918 to Feb. 28, 1923, Manager, Sleeping, Dining and Parlor Cars, Hotels and News Service, Canadian National Rys., Toronto.

Charles James Quantic, who has been appointed Superintendent of Motive Power and Car Equipment, Canadian National Rys., Vancouver, B.C., was born at Erin, Ont., July 18, 1882, and entered railway service Sept. 23, 1900, since when he has been, to Sept. 1901, wiper and hostler, Canadian Northern Ry., Dauphin, Man.; Sept. 1901 to Aug. 1904, locomotive fireman, same road, Dauphin and Winnipeg; Aug. 1904 to March 1906, locomotive man, same road, Dauphin and Winnipeg; March 1906 to April 1911, locomotive man, same road, Toronto; April 1911 to Nov. 1915, Superintendent of Construction, same road, in British Columbia; Nov. 1915 to March 1, 1923, Master Mechanic, Canadian National Rys., Vancouver, B.C.

E. D. Sewall, Vice President, Chicago, Milwaukee & St. Paul Ry., died at Chicago, Ill., March 30, of pneumonia.

Henry Walter Sharpe, who has been appointed Superintendent of Motive Power, Quebec District, Central Region, Canadian National Rys., Quebec, Que.,

was born at Campbellton, N.B., Dec. 6, 1869, and entered railway service in Sept. 1883, since when he has been, to Aug. 1884, messenger, Intercolonial Ry., Campbellton, N.B.; Aug. 1884 to Nov. 1886, helper apprentice, I.R.C., Campbellton, N.B.; Nov. 1886 to Feb. 18, 1890, fireman, I.R.C., Campbellton, N.B.; Feb. 18, 1890, to Nov. 21, 1912, locomotive man, Campbellton, N.B.; Nov. 21, 1912, to Oct. 1, 1913, acting Master Mechanic, I.R.C., Riviere du Loup, Que.; Oct. 1, 1913, to Jan. 1, 1917, Master Mechanic, Canadian Government Rys., Riviere du Loup, Que.; Jan. 1, 1917, to Dec. 23, 1918, Master Mechanic, C.G.R., Levis, Que.; Dec. 23, 1918, to March 1, 1923, District Master Mechanic, Canadian National Rys., Quebec, Que.

George Edward Smart, who has been appointed Chief of Car Equipment, Canadian National Rys., Montreal, was born at Edinburgh, Scotland, Dec. 23, 1873, and entered railway service in 1892, since when he has been, to 1897, in various positions in car shops, G.T.R., Montreal; 1897 to 1904, Car Inspector, G.T.R., Montreal; 1904 to 1906, General Inspector of Heating and Lighting, Eastern Lines, C.P.R., Montreal; 1906 to 1909, General Car Inspector, Eastern Lines, C.P.R., Montreal; 1909 to Sept. 30, 1913, Division Car Foreman, in charge of passenger and freight car work, Eastern Lines, C.P.R., Montreal; Oct. 1, 1913, to Feb. 1918, Master Car Builder, Canadian Government Rys., Moncton, N.B.; Feb. to Dec., 1918, Superintendent of Car Department, Canadian Government Rys., Moncton, N.B.; Jan. 1919 to Feb. 19, 1923, Mechanical Assistant, Car Department, to Vice President, Operation and Maintenance, Canadian National Rys., Toronto.

Charles H. Tillett, who has been appointed Signal Engineer, Central Region, Canadian National Rys., Toronto, was born at Peru, Ind., Dec. 8, 1884, and entered railway service in Aug. 1907, since when he has been, to Nov. 1907, signal repair man, Pennsylvania Rd., Fort Wayne, Ind.; April 1908 to Feb. 1910, signal repair man, Great Northern Ry., Seattle, Wash.; Feb. 1910 to July 1913, Signal Inspector, Chicago & Eastern Illinois Rd., Chicago, Ill.; July to Oct. 1913, Signal Inspector, G.T.R., Montreal; Oct. 1913 to June 1918, Supervisor of Signals, G.T.R., Montreal; June to Dec. 1918, Electrical Engineer, Signal Department, G.T.R., Montreal; Dec. 1918 to Nov. 1919, acting Signal Engineer, G.T.R., Montreal; Nov. 1919 to Feb. 28, 1923, Signal Engineer, G.T.R., Montreal.

Walter S. Thompson, who has been appointed Director of Publicity, Canadian National Rys., Montreal, was born at Newcastle-upon-Tyne, England, Oct. 22, 1886, and educated at Rutherford College there. He began newspaper work on the St. James Gazette, London, Eng., and served subsequently on the Evening Standard, Daily Express and Observer, in London, and from 1909 to 1911 was on newspaper work in Australia and New Zealand. In 1912 he was city editor of the Daily Witness and Daily Telegraph, Montreal; 1913 to 1914, city editor, Montreal Herald; March 29, 1914, to Sept. 1922, editor, Press Bureau, G.T.R., Montreal; Sept. 1922 to March 14, 1923, Publicity Agent, G.T.R., Montreal.

S. G. Tiffin, who has been appointed Assistant General Freight Agent, Central Region, Canadian National Rys., Toronto, was born at Hamilton, Ont., and entered railway service Apr. 1, 1886, since when he has been, to May 1888,

clerk, Local Freight Office, G.T.R., Stratford, Ont.; May 1888 to July 1890, secretary to Superintendent, G.T.R., Stratford, Ont.; July 1890 to May 1891, secretary to General Manager, Chicago and Grand Trunk Rd., and Detroit, Grand Haven & Milwaukee Ry., Detroit, Mich.; May 1891 to Oct. 1892, chief clerk to General Agent, same roads, Saginaw, Mich.; Oct. 1892 to Nov. 1893, Travelling Freight Agent, Commercial Express Fast Freight Line, Rockford, Ill.; Nov. 1893 to Feb. 1898, Travelling Freight Agent, Wisconsin Central Ry., Milwaukee, Wis.; Feb. to Nov. 1898, Wisconsin Agent, North Shore Despatch Fast Freight Line, Milwaukee, Wis.; Jan. 1899 to Nov. 1900, Wisconsin Agent, Reading Despatch Fast Freight Line, Milwaukee, Wis.; Nov. 1900 to May 1910, Travelling Freight Agent, Intercolonial Ry., Toronto; May 1910 to Aug. 1913, General Agent, Intercolonial Ry., Toronto; Aug. 1913 to Feb. 1914, Division Freight Agent, Canadian Government Rys., St. John, N.B.; Feb. 1914 to June 1915, Division Freight Agent, C.G.R., Montreal; June 1915 to Jan. 1919, Assistant General Freight Agent, C.G.R., Montreal; Jan. 1919 to March 9, 1923, Assistant General Freight Agent, Eastern Lines, Canadian National Rys., Montreal.

William Melbourne Tisdale, who has been appointed Superintendent of Investigation, Northern Ontario, Southwestern Ontario and Montreal Districts, Central Region, Canadian National Rys., Toronto, was born at Otterville, Ont., Sept. 7, 1872, and from Aug. 1889 to Feb. 1895 was in newspaper work in Canada and the U.S.; Feb. 1896 to May 1, 1905, in Sheriff's office, and High Constable, Oxford County, Woodstock, Ont.; May 1, 1905, to May 31, 1913, Special Agent, G.T.R., Hamilton, Ont.; June 1, 1913, to Nov. 8, 1919, Chief Special Agent, G.T.R., Montreal; Nov. 8, 1919, to Nov. 30, 1921, Special Agent, Canadian National Rys., Montreal; Dec. 1, 1921, to March 15, 1923, Special Agent, headquarters staff, Canadian National Rys., Toronto.

F. J. Watson, who has been appointed Freight Traffic Manager, Central Region, Canadian National Rys., Montreal, was born there, Jan. 12, 1866, and entered railway service Mar. 1, 1884, since when he has been, to 1885, secretary to Assistant General Freight Agent, Northern & Northwestern Ry.; 1885 to 1888, secretary to General Freight Agent, same road; 1889 to 1891, waybill inspector, G.T.R.; 1891 to May 1, 1892, Travelling Freight Agent, Western Division, G.T.R.; May 1, 1892, to July 1, 1896, Travelling Freight Agent, Eastern Division, G.T.R., Montreal; July 1, 1896, to Aug. 1, 1897, chief clerk, Freight Department, Southern Division, G.T.R., Hamilton, Ont.; Aug. 1 to Dec. 6, 1897, Division Freight Agent, G.T.R., Stratford, Ont.; Dec. 6, 1897, to Oct. 1911, Division Freight Agent, G.T.R., Montreal; Oct. 1911 to May 1919, Assistant General Freight Agent, G.T.R., Montreal; May 1919 to March 1, 1923, General Freight Agent, G.T.R., Montreal.

William Edwin Weegar, who has been appointed Superintendent, Barrie Division, Southwestern District, Central Region, Canadian National Rys., Allandale, Ont., was born in Stormount County, Ont., Dec. 17, 1870, and entered G.T.R. service Nov. 17, 1888, since when he has been, to 1899, freight brakeman, District 5, Montreal Division; 1899 to 1913, freight and passenger conductor, same district; 1913 to 1918, Trainmaster, Eastern Lines; 1918, to Apr. 16, 1921,

Trainmaster, District 30, Ottawa Division; Apr. 16, 1921, to Oct. 1, 1922, Trainmaster, Districts 30, 31 and 32, Ottawa Division; Oct. 1, 1922, to Jan. 8, 1923, Trainmaster, District 30, Ottawa Division, Ottawa, Ont.; Jan. 8 to Feb. 28, 1923, acting Superintendent, Barrie Division, Ontario Lines, Allandale, Ont.

A. T. Weldon, who has been appointed Traffic Manager, Atlantic Region, Canadian National Rys., Moncton, N.B., was born at Dorchester, N.B., Mar. 6, 1876, and entered transportation service in 1890, since when he has been, to Apr. 1900, in different capacities in the freight Department, Intercolonial Ry.; Dec. 1901 to Aug. 1904, in Division Freight Agent's office, I.R.C., Halifax, N.S.; Aug. 1904 to May 1, 1907, Secretary, Halifax Board of Trade; May 1 to Nov. 18, 1907, General Sales Agent, Port Hood-Richmond Ry. Coal Co., Halifax, N.S.; Nov. 18, 1907, to 1909, Division Freight Agent, I.R.C., Halifax, N.S.; 1909 to Oct. 1, 1914, General Freight and Passenger Agent, Black Diamond Steamship Co., Montreal; Oct. 1, 1914, to June 9, 1917, Assistant General Freight Agent, Canadian Government Rys., Moncton, N.B.; June 9, 1917, to Dec. 31, 1918, General Freight Agent, Canadian Government Rys., Moncton, N.B.; Jan. 1 to Aug. 1, 1919, Assistant Freight Traffic Manager, Canadian National Rys.; Aug. 1, 1919, to March 9, 1923, Assistant Freight Traffic Manager, Eastern Lines, Canadian National Rys., Montreal.

David Oliver Wood, who has been appointed Traffic Manager, Foreign Freight Department, Canadian National Rys., Montreal, was born at Kleinburg, Ont., Mar. 16, 1864, and entered transportation service in May 1883, since when he has been, to 1902, billing clerk, District Freight Agent's office, and Assistant Foreign Freight Agent, G.T.R., Toronto; 1902 to 1905, Western Freight Agent, Donaldson & Thomson Steamship Lines, Toronto; 1905 to 1917, General Freight Agent, Allan Line Steamships, Toronto; 1917 to Feb. 1919, Assistant Export and Import Freight Agent, C.P.R., Toronto; April 1919 to Aug. 1, 1920, Traffic Manager, Export and Import Freight Department, Canadian National Rys., Toronto; Aug. 1, 1920, to March 9, 1923, General Foreign Freight Agent, Canadian National-Grand Trunk Rys.

H. E. Whittenberger, who has been appointed Manager, Michigan District, Central Region, Canadian National Rys., Detroit, Mich., was born at Peru, Ind., Nov. 9, 1869, and entered transportation service in 1885, since when he has been, to Feb. 1897, in various positions, Wabash Rd.; Feb. 1897 to May 1902, Trainmaster, Middle Division, G.T.R.; May 1902 to Sept. 1904, Superintendent, Denver & Rio Grande Ry.; Sept. 1904 to Jan. 1906, Superintendent, Cincinnati, Hamilton & Dayton Rd., Indianapolis, Ind.; Jan. 1906 to Sept. 30, 1907, Superintendent, Kansas City & Southern Rd.; Sept. 30, 1907, to Oct. 17, 1912, Superintendent, Eastern Division, G.T.R., Montreal; Oct. 17, 1912, to Jan. 14, 1913, Superintendent, Middle Division, G.T.R., Toronto; Jan. 14, 1913, to May 1, 1918, General Superintendent, Ontario Lines, G.T.R., Toronto; May 1, 1918, to May 1, 1919, General Manager, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit; May 1, 1919, to March 1, 1920, Federal Manager, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit; March 1, 1920, to Feb. 28, 1923, General Manager, G.T.R., Detroit.

Other Mainly About Railway People is given on an earlier page of this issue.

Birthdays of Transportation Men in May.

Many happy returns of the day to:—

Jas. Bain, Superintendent, Bridgewater Division, Maritime District, Atlantic Region, Canadian National Rys., Bridgewater, N.S., born at Pictou, N.S., May 24, 1860.

B. T. Chappell, General Superintendent, Saskatchewan District, Western Region, Canadian National Rys., Saskatoon, Sask., born at Charlottetown, P.E.I., May 1, 1878.

A. J. Crandall, Night Locomotive Foreman, C.P.R., Smiths Falls, Ont., born at Waterloo, Que., May 24, 1877.

N. R. DesBrisay, Assistant General Passenger Agent, C.P.R., Winnipeg, born at Minneapolis, Minn., May 18, 1888.

A. E. Duff, ex-District Passenger Agent, G.T.R., Toronto, now of Winnipeg, born at Sherbrooke, Que., May 1, 1872.

G. C. Dunn, Assistant to Chief Engineer, Central Region, Canadian National Rys., Toronto, born at Quebec, May 13, 1862.

C. S. Gzowski, Chief Engineer, Construction Department, Canadian National Rys., Montreal, born at Toronto, May 1, 1876.

W. S. Hall, Superintendent, Portage Division, Manitoba District, C.P.R., Winnipeg, born at Montreal, May 23, 1884.

G. H. Hedge, Works Manager, Canadian National Rys., Winnipeg, born at Neath, Wales, May 26, 1865.

G. A. Hoag, Superintendent of Transportation, Northern Ontario District, Central Region, Canadian National Rys., Toronto, born at Walters Falls, Ont., May 31, 1866.

W. T. Huggan, ex-District Passenger Agent, Island Division, Canadian National Rys., Charlottetown, P.E.I., born at Halifax, N.S., May 24, 1851.

J. Irwin, Superintendent, Edmonton Division, Alberta District, Western Region, Canadian National Rys., Edmonton, Alta., born at Clinton, Ont., May 28, 1866.

H. E. Kane, ex-Port Agent, Canadian Government Merchant Marine, St. John, N.B., born there, May 20, 1895.

S. McIlwain, Division Engineer, Ottawa Division, Northern Ontario District, Central Region, Canadian National Rys., Ottawa, Ont., born at Goderich, Ont., May 24, 1885.

J. N. Murphy, Roadmaster, C.P.R., Bull River, B.C., born at Mooretown, Ont., May 10, 1879.

Sir Augustus M. Nanton, President, Winnipeg Electric Ry., and director, C.P.R., Winnipeg, born at Toronto, May 7, 1860.

A. C. Shaw, Passenger Department, C.P.R., Montreal, born at Detroit, Mich., May 12, 1865.

W. H. Snell, General Passenger Agent, C.P.R., Vancouver, B.C., born at Palmyra, Neb., May 23, 1872.

W. Stapleton, District Passenger Agent, Canadian National Rys., Saskatoon, Sask., born at Bristol, Eng., May 20, 1884.

R. B. Teakle, General Manager, Canadian Government Merchant Marine, Montreal, born at Quebec, Que., May 19, 1877.

E. E. Tedford, General Superintendent, Canadian Government Merchant Marine, Montreal, born at Yarmouth, N.S., May 21, 1870.

J. M. Walker, District Agent, Canadian National Rys., Glasgow, Scotland, born there, May 14, 1880.

J. H. Walsh, General Manager, Quebec

Central Ry., Sherbrooke, Que., born at Quebec, May 12, 1860.

H. K. Wicksteed, B.A.Sc., C.E., ex-Chief Engineer of Location, Canadian National Rys., Toronto, born at Quebec, May 25, 1855.

A. O. Wolff, Resident Engineer, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Copenhagen, Denmark, May 14, 1887.

J. M. Woodman, General Superintendent, New Brunswick District, C.P.R., St. John, N.B., born at St. Marys, Ont., May 15, 1866.

C. H. Worby, Superintendent, Sleeping, Dining and Parlor Cars, Canadian National Rys., Winnipeg, born at London, Ont., May 18, 1883.

Freight Car Location on Canadian Railways.

The Railway Association of Canada has issued a report on location of freight cars on Canadian railways, on April 1, based on returns from the following lines: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Grand Trunk; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo; Wabash, in Canada; Central Vermont, in Canada; Michigan Central, in Canada; Pere Marquette, in Canada, as follows: Number of cars owned, 219,975; home cars on Canadian foreign lines, 20,992; home cars on U.S. lines, 65,569; home cars on home lines, 133,414; Canadian-owned foreign cars on home lines, 19,025; U.S.-owned foreign cars on home lines, 32,559; total cars on lines, 184,998; percent on lines to total owned, 84.1; deficiency on lines to total owned, 34,977; home cars in bad order, 12,181; foreign cars in bad order, 482; total cars in bad order, 12,663; percent in bad order, 6.8; privately-owned U.S. cars on lines, 2,300; privately-owned Canadian cars on lines, 956.

Maritime Provinces Freight Rates.—The Nova Scotia House of Assembly passed a resolution recently moved by J. W. Macdonald, Pictou County, for the appointment of a freight rate expert, in co-operation with Prince Edward Island and New Brunswick, to watch the maritime provinces' interests in regard to freight rates. Mr. Macdonald explained that he made the motion in order to secure concerted action by the three maritime provinces to place the demand for lower freight rates before the Board of Railway Commissioners.

Checking of Track Scales.—The Railway Association of Canada has issued the following circular:—"As railways are called upon, from time to time, to check the physical conditions of privately-owned track scales, it is recommended to member lines that when such inspection is made a uniform charge of \$20 per scale be made, plus actual expenses of inspector, with a minimum of \$10 a day for such expenses."

A. Wilcox, General Superintendent, Manitoba District, Western Region, Canadian National Rys., writes:—"I find Canadian Railway and Marine World a very valuable and up-to-date publication."

Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General Order 375. March 17.—Approving Exchange and Toll Line Form Agreement (650), and Service Station Agreement Form (651) to be entered into between Bell Telephone Co. and any other company, municipality, or corporation having authority to build or operate a telephone system or line; also rescinding general order 114, Nov. 12, 1913.

General order 376. March 27.—Amending general order 275, March 17, re general forms of contract to be entered into between Bell Telephone Co. and any other company, municipality, etc., having authority to construct or operate a telephone system or line, by striking out the word "Company" after the words "Canadian Independent Telephone" in 4th line of the recital, and substituting the word "Association."

General order 377. April 6.—Approving proposed supplement 20 to Canadian Freight Classification 16.

33,408. Feb. 28.—Approving agreement between Bell Telephone Co. and North Wellington Telephone Co., Wellington and Dufferin Counties, Ont.

33,409. Mar. 3.—Authorizing Canadian National Rys. to close station at Hydro, Ont.

33,410. Mar. 3.—Authorizing G.T.R. to install automatic crossing signals at Pages, Ont., where it crosses C.P.R. Teeswater Branch.

33,411. March 6.—Authorizing Michigan Central Rd. to build spur for Hagersville Crushed Stone Co., Hagersville, Ont.

33,412. March 5.—Authorizing Canadian National Rys. to rebuild bridge over Mattawan River, at mile 51.1 Kashabowie Subdivision, Ont.

33,413. March 6.—Suspending as from March 2, Supplement 12 to Canadian National (Grand Trunk) Tariff C.R.C. no. E-4411, with leave to company to make formal application to Board to cancel milling in transit arrangement on peas.

33,414. March 6.—Approving location of Canadian National Rys. freight and passenger shelter at Sevik, Man.

33,415. March 6.—Authorizing Canadian National Rys. to build across highway between Secs. 26 and 27, at milepost 65, Athabasca, Alta.

33,416. Feb. 17.—Dismissing C.P.R. application for exemption from requirement as to approval of Governor in Council in connection with agreement of June 1, 1921, between Grand Trunk Pacific, Canadian Northern, Edmonton, Dunvegan & British Columbia, and Canadian Pacific Rys.

33,417. March 6.—Authorizing Canadian National Rys. to build spur for J. S. Miller, Winnipeg.

33,418. March 6.—Ordering Canadian National Rys., where cars are stored on most easterly of two tracks crossing Orillia St., Washago, Ont., to keep same 350 ft. from street line.

33,419. March 3.—Declaring that for the present, the Pere Marquette Rd. crossing at Iona, Ont., is protected to Board's satisfaction.

33,420. March 8.—Authorizing C.P.R. to put on an attachment prepared by Buda Foundry & Mfg. Co. to jack-knife gates at crossing of Talbot Ave., Winnipeg.

33,421. March 8.—Authorizing Canadian National Rys. to build spur for Sheffield Collieries, Ltd., near Wayne, Alta.

33,422. March 6.—Ordering Canadian National Rys. to build farm crossing on Emile Raquepas' property, Cadastral, Lot 555, Laprairie Parish, Que.

33,423. March 7.—Ordering C.P.R. to keep its cars back 20 ft. from street line at Coldstream Road, Vernon, B.C., when standing on Vernon Fruit Union tracks.

33,424. March 6.—Authorizing use of bridge carrying Westminster Road, between Lots 18 and 19, Con. 1, London Tp., Ont., over Canadian National Rys.

33,425. March 8.—Authorizing Canadian National Rys. to build spur for Massey-Harris Co., Brantford, Ont.

33,426. March 8.—Authorizing Canadian National Rys. to divert public road between Lots 30 and 31, Rama Tp., Ont., near Longford station, and carry it under G.T.R. by existing underpass.

33,427, 33,428. March 6, 9.—Authorizing Canadian National Rys. to rebuild bridges over Shebdowan River, mile 55.2, Kashabowie Subdivision, and between Lots 28 and 29, Range 3, Pickering Tp., Ont., across its tracks, at milepost 314.78.

33,429, 33,430. March 9.—Authorizing Saskatchewan Highways Department to make highway crossings at grade over Canadian National Rys. at north end of Antar station grounds, Sask.; and over C.P.R. near Leipzig, Sask.

33,431. March 9.—Approving Canadian National Rys. plan for installation of automatic electric bell and wigwag signal at crossing of 11th Ave., Saskatoon, Sask.

33,432. March 12.—Approving C.P.R. revised location, mile 14 to 17, Mountain Subdivision, near Leachhoil, B.C.

33,433. March 8.—Authorizing Dufferin rural municipality, Man., to make highway across Canadian National Rys. at Rose Isle, Man.

33,434. March 12.—Declaring that for the present the Midland Ry. of Manitoba crossing at Main St., Morden, Man., is protected to Board's satisfaction.

33,435. March 12.—Approving changes and alterations in location of Canadian National Rys. through Sec. 11, Tp. 11, Range 6, east principal meridian, Man.

33,436. March 16.—Approving C.P.R. plan of proposed relining of tunnel 4.9, Fernie Subdivision, B.C.

33,437. March 15.—Declaring that for the present, Canadian National Rys. crossing at Kingsbury Ave., New Toronto, is protected to Board's satisfaction.

33,438. March 15.—Declaring that for the present C.P.R. crossing at Needham St., Lindsay, Ont., is protected to Board's satisfaction.

33,439. March 16.—Authorizing Saskatchewan Highways Department to make highway across Canadian National Rys. in n.e. ¼ Sec. 21, Tp. 54, Range 7, west 3rd meridian, Sask.

33,440. March 15.—Declaring that for the present the Canadian National Rys. crossing near Sudbury Jct., Ont., is protected to Board's satisfaction.

33,441. March 15.—Authorizing London & Port Stanley Ry. to enter Charles Wilson's lands in Yarmouth Tp., Ont., to remove trees obstructing view of crossing of Gravel Road, near St. Thomas, Ont.

33,442. March 16.—Approving C.P.R. clearances at freight shed 5, Fort William, Ont.

33,443. March 16.—Declaring that for the present, C.P.R. crossing at Innerkip, Ont., is protected to Board's satisfaction.

33,444 to 33,447. March 17.—Authorizing C.P.R. to rebuild bridges 60.1, over Calumet River; 64.3, over Riviere au Chene; 67.2, over Salmon Creek, and 68.8, over Kingey Brook, Lachute Subdivision, Que.

33,448. March 19.—Approving Canadian National Rys. layout of interlocking plant for protection of lift bridge at Bear's Pass, Ont.

33,449. March 17.—Authorizing Lake Erie & Northern Ry. to build spur for Johnson Bros., Brantford, Ont.

33,450. March 17.—Ordering Canadian National Rys. to install wigwag signal with an extra flashing red signal light at crossing of McGill St., Hawkesbury, Ont.

33,451. March 21.—Authorizing Kettle Valley Ry. to open for traffic, portion of its Penticton South Branch from mile 10.18 to 26.8, B.C.

33,452. March 20.—Declaring that for the present, Milan's crossing by Maine Central Rd. in Dudswell Tp., Que., is protected to Board's satisfaction.

33,453. March 20.—Dismissing application of farmers of St. Andrews East Parish, Que., for order directing Canadian National Rys. to move station for loading milk farther east; provided free access to the platform be provided by C.N.R.

33,454, 33,455. March 21.—Authorizing Esquimalt & Nanaimo Ry. to build its Courtenay to Campbell River and Duncan Bay extension across highways at mile 46.2 and 47.2, Comox District, B.C.

33,456, 33,457. March 21.—Authorizing C.P.R. to replace pile abutments at bridges 97.91 and 101.87, Mountain Subdivision, crossing Illicillewaet River, B.C.

33,458. March 21.—Authorizing Esquimalt & Nanaimo Ry. to build its Courtenay to Campbell River and Duncan Bay Extension across highway at mile 49.62, Comox District, Vancouver Island, B.C.

33,459. March 20.—Approving Canadian National Rys. layout of interlocking plant for protection of lift bridge 226A, Rainy Lake, Ont.

33,460. March 21.—Declaring that for the present, Canadian National Rys. crossing at St. Hilaire, Que., is protected to Board's satisfaction.

33,461.—March 19.—Authorizing C.P.R. to use bridge 3.4, Elora Subdivision, Ontario District.

33,462 to 33,465. March 21.—Authorizing Esquimalt & Nanaimo Ry. to build its Courtenay to Campbell River and Duncan Bay Extension across highways at mile 51.76, 48.1, 51.0 and 73.54, Comox District, Vancouver Island, B.C.

33,466. March 21.—Approving Canadian National Rys. plan showing automatic block signal layout from West Jct. switch to Union Jct., near Bissell, Alta.

33,467. March 21.—Authorizing G.T.R. and Peterborough Radial Ry. to operate over crossing at Lock St., Peterborough, Ont., when signals are clear.

33,468. March 22.—Ordering Canadian Northern Ontario Ry. to file with Board by May 1, detail plans of proposed interlocking plant near Harrowsmith, Ont.

33,469. March 23.—Authorizing Canadian National Rys. to discontinue service of trains 29 and 30 between Kingston and Belleville, Ont.

33,470. March 23.—Authorizing C.P.R. to replace existing crib abutments at bridge 6.1, Sussex St. Subdivision, Ottawa, with concrete abutments.

33,471. March 23.—Dismissing complaint of P. Burns & Co., Prince Albert, Sask., against Canadian National Express Co., with respect to claims for goods lost or damaged at flag stations.

33,472. March 22.—Approving agreement between Bell Telephone Co., J. R. Reid and Mrs. I. S. Bell, Durham County, Ont.

33,473. March 23.—Approving plan showing proposed installation of interlocking signal protection at crossing of Maine Central Rd. and C.P.R. at Cookshire, Que.

33,474. March 26.—Ordering Canadian National Rys. to appoint caretaker at Beaufield station, Sask.

33,475. March 27.—Authorizing C.P.R. to open for traffic, portion of its Langdon North Branch from mile 75.5 to 79.191.

33,476. March 28.—Suspending for 1923, or until further order, the provisions of general order 362 (clause 8 re fireguards), except during August, September and October, in so far as they apply to portions of Canadian National Rys. western lines operating through non-forested territory in the prairie provinces; provided that such suspension shall not be construed as permitting the use of lignite coal as fuel on locomotives, steam shovels, ditching machines and pile drivers.

33,477. March 26.—Authorizing Interprovincial & James Bay Ry. to divert road allowance in Lot 4 and 5, Laverlochere Tp., Que.

33,478. March 26.—Declaring that for the present, Canadian National Rys. crossing at Renton, Ont., is protected to Board's satisfaction.

33,479, 33,480. March 27.—Approving Bell Telephone Co. agreements with Lotbiniere and Nicolet Telephone Co., Lotbiniere and Nicolet Counties, Que., and Norfolk County Telephone Co., Norfolk, Oxford and Brant Counties, Ont.

33,481. March 27.—Ordering Canadian National Rys. to erect fourth-class station at Runnymede, Sask., by Oct. 1.

33,482. March 27.—Approving agreement between Bell Telephone Co. and G. E. Wheeler, operating a telephone system in Terrebonne County, Que.

33,483. March 27.—Authorizing Canadian National Rys. and C.P.R. to operate through interlocking plant at junction cut, near Hamilton, Ont.

33,484. March 26.—Authorizing issue of free transportation to Sir George Fuller, Premier of New South Wales, and his secretary.

33,485. March 28.—Approving agreement between Bell Telephone Co. and East Grey Telephone Co., Grey County, Ont.

33,486, 33,487. March 28.—Approving supplement 1, Dec. 27, 1921, and supplement 2, March 6, 1923, to Bell Telephone Co.'s agreement with Schomberg Telephone Co., Simcoe and York counties, Ont., and supplement 1, Feb. 28, 1921, supplement 2, March 8, 1921, and supplement 3, March 20, 1923, to Bell Telephone Co. agreement with South Leeds & Pittsburgh Rural Telephone Co., Leeds and Frontenac counties, Ont.

33,488. March 28.—Ordering that 25% of cost of installing gates at crossing by Canadian National Rys. of Beauport Road, Limouliou, Que., be paid out of railway grade crossing fund.

33,489. March 28.—Authorizing Town of Victoriaville, Que., to remove crossing over Canadian National Rys., between Market and Mill Sts., at Octave St.

33,490. March 28.—Authorizing Canadian National Rys. to build spur for Dewey-Gardner Lumber Co., Moose Jaw, Sask.

33,491. March 27.—Approving Canadian National Rys. plan showing automatic block signal protection at crossing between St. Albert and Evansburg siding, B.C.

33,492. March 31.—Rescinding order 17,215, Aug. 8, 1912, authorizing G.T.R. to build spur for Canada Iron Corporation, north of Longford station, Ont.

33,493. March 31.—Declaring that for the present, C.P.R. crossing at Lake Shore Jct., Windsor, Ont., mile 109.7, Windsor Subdivision, is protected to Board's satisfaction.

33,494. March 28.—Authorizing Kettle Valley Ry., Penticton to International Boundary Line, to cross a number of highways between mile 10.28 and 39.33.

33,495. March 31.—Declaring that for the present, Michigan Central Rd. crossing of King St., Hagersville, Ont., is protected to Board's satisfaction.

33,496. March 27.—Approving revised location of Esquimalt & Nanaimo Ry. Courtenay to Campbell River and Duncan Bay Extension from present terminus at Courtenay to near Duncan Bay, mile 45 to 76.7.

33,497. March 31.—Approving Supplement 1, March 28, 1921, and Supplement 2, March 5, 1923, to connecting agreement between Bell Telephone Co. and Conn Telephone Co., Wellington, Grey and Dufferin Counties, Ont.

33,498. Apr. 3.—Authorizing Hamilton Radial Electric Ry. to build spur for Appleford Counter Check Book Co., Hamilton, Ont.

33,499. Apr. 4.—Approving Canadian National Rys. location from connection with British Columbia Electric Ry. at Queensboro, to a connection with same railway at Steveston, B.C., mile 3.74A to 15.39.

35,500. March 31.—Declaring that for the present, Canadian National Rys. crossing of Main

St., Caledonia, Ont., is protected to Board's satisfaction.

33,501. Apr. 3.—Directing that, until further order, a speed limitation of six miles an hour be put into effect at crossing of Aymer Road by Hull Electric Co.'s railway, Hull, Que., between Rock Out and C.P.R. station at Hull West, Que.

33,502. March 31.—Authorizing C.P.R. to close highway crossing at mile 41.01, in the St. Jean Baptiste de Belisle Municipality, Que.

33,503. Apr. 7.—Authorizing Canadian National Rys. to build a spur connection for Quaker Oats Co., Peterborough, Ont.

33,504. April 6.—Authorizing C.P.R. to rebuild bridge 86.3, St. Agathe Subdivision, Que.

33,505. April 9.—Authorizing Michigan Central Rd. to build 7 additional tracks across Park Ave., Yarmouth Tp., Ont.

33,506 to 33,509. April 11.—Approving Bell Telephone Co.'s agreements with Falls Line Telephone Co., Durham County, Ont.; Gatineau Valley Telephone Co., Ottawa County, Que.; North Cavan Telephone Co., Durham County, Ont., and Ontario Lands, Forests and Mines Department, operating from Kearney to several points in Algonquin Provincial Park.

33,510. April 11.—Approving section 7 of American Railway Express Co.'s bylaw, March 31, authorizing the Vice President, Traffic Department, to issue tariffs of tolls.

33,511 to 33,513. April 11.—Approving Bell Telephone Co.'s agreements with Northcote Farmers' Telephone Co., Renfrew County, Ont.; Plummer, Aberdeen and Galbraith Rural Telephone Association, Algoma District, Ont., and Cavan Rural Telephone Co., Durham County, Ont.

33,514. April 7.—Approving Pere Marquette Ry. plan showing installation of track circuit locking, removal of detector bars, and rearrangement of levers, for changes in signal operation.

33,515. April 6.—Authorizing C.P.R. to divert and close road allowance, within right of way limits, and to carry diversion across right of way, at grade, at mile 52.4, Colonsay Subdivision, Sask.

33,516. April 11.—Approving agreement between Bell Telephone Co. and Warwick Telephone Co., Drummond and Arthabaska Counties, Que.

33,517. April 9.—Authorizing C.P.R. to replace timber trestle and wooden box culvert at bridge 28.63, Mountain Subdivision, B.C., by a 20 ft. I-beam on concrete abutments.

33,518, 33,519. April 11.—Approving Bell Telephone Co. agreements with Bowman Telephone System, Bruce and Grey Counties, Ont., and A. C. Beatty, Durham and Northumberland Counties, Ont.

33,520. April 9.—Authorizing C.P.R. to replace pile trestle at bridge 21.4, Swift Current Subdivision, by standard double track 40 ft. half deck plate girder span on concrete abutments.

33,521. April 11.—Approving agreement between Bell Telephone Co. and Millbrook Rural Telephone Co., Durham and Northumberland Counties, Ont.

33,522. April 11.—Ordering Canadian National Rys. to erect 4th class standard station building at Browning, Sask., by Aug. 31.

33,523 to 33,526. April 11.—Approving Bell Telephone Co. agreements with The People's Mutual Telephone Co., Prince Edward County, Ont.; Marysburg Telephone Co., Prince Edward County, Ont.; Megantic People's Telephone Co., Megantic County, Que.; and Dunnville Consolidated Telephone Co., Haldimand, Lincoln, Welland and Brant Counties, Ont.

33,527. April 11.—Authorizing C.P.R. to build spur for J. H. McKnight Construction Co., across Union St., Toronto.

33,528. April 12.—Declaring that for the present, the C.P.R. crossing of Plympton Town Line, Ont., is protected to Board's satisfaction.

33,529. April 12.—Approving agreement between Bell Telephone Co. and Came Telephone Line, Rouville County, Que.

33,530 to 33,535. April 13.—Declaring that for the present the Canadian National Rys. crossings of Hale St., London, Ont.; first public crossing east of Mallorytown, Ont.; just west of station platform at St. Hubert, Que.; at Elgin St., St. Marys, Ont.; east of Rockfield, Que., and just east of Parkhill Station, Ont., are protected to Board's satisfaction.

33,536. April 14.—Approving clearances for C.P.R. standard coaling plant, 280 tons capacity.

Radio Experiments on Moving Trains.—The C.P.R. is reported to have completed a successful long distance test of radiotelegraphy on a moving train recently. The test was made on the transcontinental express, and covered the run from Winnipeg to Vancouver. It is reported to have been very successful, although there were times when the train's vibration made it somewhat difficult to hear.

C.P.R. Scholarships.—A press report states the C.P.R. has decided to offer some scholarships at the University of Montreal, and that R. Paradis, K.C., and E. Montpetit, Secretary of the University, are arranging the details.

Telegraph and Cable Matters.

The Western Union Telegraph Co. has re-established its cable station at Canso, N.S.

Canadian National Telegraphs have reopened their office at Point St. Peter, Que., and closed offices at Agate, Hydro and Pass Lake, Ont.

John Kerr, heretofore Inspector, Canadian National Telegraphs, Truro, N.S., has been appointed Inspector at Fredericton, N.B., vice T. A. Costello, appointed Inspector at Truro.

J. V. Duncan, traffic chief, Canadian Pacific Telegraph, Winnipeg, died at Denver, Col., April 7, aged 51, after a long illness, due to diabetes. He had been in C.P.R. service for over 30 years, at different points on the western lines.

The American Publishers' Committee on Cable and Radio Communications has applied to the Dominion Government for a license for a wireless telegraph station near St. Margarets Bay, N.S., for dealing entirely with press matter, which will be relayed to New York, Chicago, etc.

The Western Union Telegraph Co.'s report for 1922 shows a net income of \$13,158,180, compared with \$9,633,808 for 1921. The gross operating revenue was \$105,447,748, an increase of \$1,292,635 over 1921. The report states that there was a decline in ocean cable revenues, owing to the condition of foreign commerce, and the effect of wireless competition at low rates.

Canadian National Telegraphs and Canadian Pacific Telegraphs, April 20, announced reduced cable rates to European countries, as follows: Austria 30c, Belgium 23c, France 22c, Germany 25c, Great Britain and Ireland 20c, Greece 35c, Hungary 33c, Italy 33c, Switzerland 27c, with corresponding reductions to other countries reached by means of Atlantic cables. To those countries where the half rate for deferred service is in force, the new deferred rate will be half the new ordinary rate, but where the deferred rate is less than half the ordinary rate, it will not be increased. The rate for week-end letters is 5c a word, with a minimum of 20 words, to points in Great Britain. This is 1c a word lower than the rate on cable letters. To points in Africa, Asia and Australasia, on messages routed through London, there is a reduction of 5c a word, with a corresponding reduction on deferred messages.

Among the Express Companies.

T. J. Hackett has been appointed agent Dominion Ex. Co., Chapleau, Ont., vice J. Harris, resigned.

F. McCaffrey has been appointed acting agent, Dominion Ex. Co., Sturgeon Falls, Ont., vice J. N. Bauer, deceased.

The Canadian National Rys. Express Department has opened offices at Duncan, Que., and Ardley, Alta., and has closed its office at Rosborough, N.B.

Fred Stevens, who has been over 40 years in Dominion Ex. Co.'s service, left Winnipeg recently for Victoria, B.C., on leave of absence for two months, on account of illness.

It was stated in Canadian Railway and Marine World for March that the notice which was given the Dominion Express Co., by the Railways Department, that the arrangements it had for operation over the Canadian National Rys. lines south of the St. Lawrence

River, formerly the Intercolonial & Prince Edward Island Rys., would be terminated on March 31, had been extended for at least another month. We were officially advised, April 28, that the company would cease operation over these lines on May 31, after which express business on them would be handled exclusively by the Canadian National Rys. Express Department.

Taxation of Express Companies.

The Citizens' Research Institute of Canada has issued a report on the provincial taxation of public utility corporations, in which the following refers to express companies:—

Prince Edward Island: \$500 for each company operating in the province and having head office outside the province.

Nova Scotia: \$1,250 a mile for each 100 miles or fraction thereof over which company operates in N.S.

New Brunswick: \$100 for each city in which company does business; \$50 for each such town of 3,000 population or more; \$25 for each such town 2,000-3,000; \$10 for each place in which there is an agent, if population 200 or over.

Quebec: On every company foreign to the province 5/10 of 1% on gross earnings within the province, with minimum of \$800. An additional tax of \$50 for each place of business in Montreal or Quebec, and \$20 for each place of business elsewhere. On every company foreign to Canada, carrying on other than an express business exclusively, an additional tax of ½ of 1% on the gross earnings of such other business, with a minimum of \$400.

Ontario: \$800 for each 100 miles of railway or fraction thereof over which company operates.

Manitoba: \$45 for each incorporated town in which company has an office; \$160 for each such city, other than Winnipeg. In Winnipeg—\$750 for chief office and \$100 for each of the second and third offices.

Saskatchewan: \$150 for each city in which it transacts business; \$50 for each such town, and \$10 for each such other place over 200 population.

Alberta: \$500 in Edmonton and Calgary; \$200 in all incorporated cities over 5,000 population, other than the two mentioned, in which the company has an office; \$100 in each such city under 5,000 population, and such town over 1,500 population; \$50 in each such town under 1,500 population, and \$10 in each such other place with population over 100.

British Columbia: 2% upon gross income.

E. W. Beatty and Shawbridge Boys' Home.—The Montreal Rotary Club is taking a practical interest in the Boys' Home at Shawbridge, Que., of which E. W. Beatty, K.C., President C.P.R., is President. At a recent meeting of the club in Montreal, Mr. Beatty described the home's work, and said that looking after the underprivileged city boys is not a work that could be initiated by Parliament, or made effective by legislation; it is one requiring the personal interest and the friendly contact of the man who can compel the boys' respect and regard.

British Farmer Girls to Tour Canada.—Four girl members of the Daily Mail's Young Farmers' Clubs have been invited by Sir Henry Thornton, President Canadian National Rys., to make a tour through Canada, and to take a course in one of the agricultural colleges of the prairie provinces. The tour will last from May to October.

Electric Railway Department

Report on Toronto Transportation Commission's Operations.

H. H. Couzens, General Manager, presented the following report to the Toronto Transportation Commission on April 17:—

Financial Statement.—I beg to submit the accounts showing the result of the first 16 months of the Commission's operations from Sept. 1, 1921, to Dec. 31, 1922. These accounts have been audited by S. C. Scott, City Auditor, whose certificate is appended. In considering these accounts, it must be borne in mind, that the figures are of necessity in some particulars approximate only, due to the following:—1. Provision has been made for the amount of the award as issued by the majority of the arbitration board which was formed to determine the price to be paid by the city for the Toronto Ry. Co.'s property. There is also included interest on the amount of the award as from Sept. 1, 1921. The city has lodged an appeal, the final outcome of which has not been determined. 2. The figures included in the cost of electrical energy are tentative, as the accounts are subject to review, based on the cost of power supplied by the Hydro-Electric Power Commission of Ontario, through the Toronto Niagara Power Co. and the Toronto Hydro-Electric System. 3. The figures are not yet available covering the operation of the city section of the Toronto & York Radials, Metropolitan Division, from the date on which the clean-up deal became effective, to the time when the T. T. C. commenced to operate from Farnham Ave. to the north city limits on Yonge St. 4. The provision for depreciation cannot be finally determined, pending the settlement of the appeal in connection with the arbitrators' award referred to above. After the amount of the award is finally settled, it must be divided into subtotals, covering the various groups of assets, which have different years of useful life. 5. There are other items yet to be adjusted, which are correlated and cannot yet be finally determined. In the interest of sound finance, adequate provision has been made in the accounts to cover all reasonable contingencies in respect of the foregoing.

From the Revenue Account it will be seen that the gross revenue for the 16 months of operation amounts to \$15,723,482.22, or slightly less than \$1,000,000 a month. The expenses of operation, including the cost of electrical energy, total \$10,968,614.88, leaving net income of \$4,754,867.34. Interest on and redemption of debt, together with depreciation, absorb \$3,493,610.27; reserve for unredeemed tickets, workmen's compensation and public liability, \$575,000.00; reserve for contingencies, \$437,569.89; and organization expenses, \$139,218.19, leaving a surplus of \$109,468.99 for the period.

Dealing with these deductions from net income:—Interest on and redemption of debt are statutory obligations, covered by the bylaws under which the funds are raised to finance the enterprise. The statute under which the Commission operates provides for a depreciation fund. The provision in the accounts is based on providing what is necessary to replace the assets at the end of their useful lifetime, less the amount set aside for the redemption of

the debenture debt. In other words, provision is made so that at the end of the useful lifetime of the assets, the debt on the same will be extinguished. The reserve for unredeemed tickets, as is implied in the designation, provides funds to cover the Commission's liability for tickets sold and not yet used. The reserve for workmen's compensation and public liability fund is adequate to cover outstanding claims. It is essential that an adequate fund be provided to cover all possible contingencies under this heading, and provision has been made with this object in view. The reserve for contingencies is necessary to cover various contingent items at present unsettled, and in order to ensure that proper provision is made for all possible



H. H. Couzens,
General Manager, Toronto Transportation
Commission.

charges which may arise. Organization expenses cover the expenses of organization and investigation, which are written off out of current revenue, in the interest of sound finance, rather than capitalizing the same.

The balance sheet is self explanatory, and needs no special comment.

General.—This is not intended to be a comprehensive report, covering the work of the Commission since its inception, but it may be of some interest to the city council, and the general public, to briefly supplement the financial statement in a few particulars.

Passengers Carried and Fares.—During the period under review, the passengers carried by the system totalled 249,015,476, and the average rate of fare, based on the tickets sold and cash fares, equalled 6.165c. As was to be expected, traffic was adversely affected until the autumn of 1922 by the rehabilitation

work under way, and the consequent disorganization of the service.

Since then there has been a marked increase in the number of revenue passengers carried, as will be seen from the following figures for the 4 months ended Dec. 31, 1921, and 1922:—

1921	1922	Increase (1922 over 1921)
61,870,213	65,447,506	3,577,293

It may also be stated that this improvement has been maintained to date.

Analysis of Cost.—An analysis of the component items of the cost, expressed as fractions of the average fare, are as follows:—

Maintenance of track-work, including overhead and buildings .....	.290c per passenger =	4.62%
Maintenance of equipment .....	.628c per passenger =	10.01%
Cost of power .....	.602c per passenger =	9.61%
Conducting transportation, i.e., the expenses of operating the cars—excluding maintenance	2.499c per passenger =	39.85%
General and miscellaneous expenses ..	.386c per passenger =	6.15%
Interest on, and redemption of capital, and depreciation	1.403c per passenger =	22.38%
Reserves .....	.406c per passenger =	6.49%
Organization expenses .....	.056c per passenger =	.89%

Total: 6.270c per passenger = 100%

The difference between the total cost as above, 6.27c., and the average fare paid per revenue passenger, 6.165c., represents the sundry revenue from sources other than passenger receipts.

Service.—From time to time there has been some criticism of the service given. The fact is overlooked, however, that owing to the condition of the property when transferred to the Commission, it requires considerable time before the service can be brought up to the state that the Commission aims at. Before the work of rehabilitation was commenced, it was estimated that at least three years would be required in order to rehabilitate the property and bring the service to standard. To date, little more than one-half of this period has gone, and the progress has been such that, provided no unforeseen circumstances arise, it is now hoped that the work will be substantially completed this year. It can be fairly claimed, however, that considerable improvements have already been made. This can best be illustrated by stating that the accommodation now given by the Commission is 40% more than the total accommodations given by the combined systems of the civic lines and the Toronto Ry. Co., though the total passengers carried do not yet exceed the total carried by the old systems. The tracks have, in the main, been rehabilitated and extensions made, new rolling stock purchased and the service consequently speeded up, all of which directly and materially contribute to the comfort and convenience of passengers.

The principal work done to the end of 1922 includes the following:—

Trackwork.—Extensions, 40 miles; total rehabilitation, 49 miles; repaired and welded, 31 miles. The standard type of track construction is by no means the lowest in first cost, but it is confidently believed to be the best and cheapest in the long run. That the work

was well done and with great expedition is so generally admitted that further comment seems superfluous. I would, however, like to take this opportunity of again emphasizing the special interest of the late Fred. R. Miller in connection with the execution of this branch of the work. At considerable personal sacrifice, he loaned to the Commission, members of his staff, who were specialists in concrete work, to organize and supervise a special department for carrying out this work. He personally displayed the greatest possible interest in this branch of the work and followed it out in all its details, devoting a very great deal of time and energy to it.

New Rolling Stock.—The following were delivered as at the end of 1922:—Cars, 262; buses, gasoline, 8 double deck, 3 single deck; trolley buses, 4 single deck. The cars purchased are of the latest type, embodying all the improvements to date. These are an excellent example of the Commission's policy of buying wherever possible in Canada, for this type and size of car had never been previously constructed in Canada. It was designed by the staff, in conjunction with the makers, and was purchased at prices which compared favorably with those quoted by foreign manufacturers. The gasoline and trolley bus services were inaugurated, partly as an experiment, in order to see what the result would be under our climatic conditions, and in order to give service in districts which could not be properly served by street cars at present. The results have justified expectations, and, while not in our opinion the most economical and suitable for mass transportation purposes, buses will, we are confident, fill a useful place in the general plan of transportation.

Car House and Yards.—There have been constructed one complete car house and yard at Eglinton, two large extensions of car houses and yards, one at St. Clair and the other at Danforth, and one yard extension at Russell. These new car houses are built of reinforced concrete, with brick facing, present a neat appearance, and are to all intents and purposes fireproof. They are equipped with sprinklers, for the security of the rolling stock. The design is the most economical for the purpose, permitting of very low insurance and maintenance costs. Buildings are only provided for from 20 to 25% of the total capacity of the cars on the site. There yet remains to be done the Roncesvalles car house and yards, without which the new cars cannot be operated on the King and Queen routes.

Work to be Completed.—The repair shops and stores are in hand at Hillcrest, the contract for which was placed early this year. Trackwork yet to be rehabilitated totals approximately nine miles. Additional new cars will be required, which are included in this year's programme. This excludes the Toronto Suburban Ry. within the city.

Toronto Railway Property.—Pending the conclusion of the hearing of the appeal against the decision of the majority of the arbitrators, it is perhaps not desirable to go into details of the award, but it may be stated that the amount of the award is very greatly in excess of the value of the assets transferred to the Commission, for incorporation in the unified system. As an illustration, of the rolling stock operated by the Toronto Ry. Co., 413 out of 830 cars have to be scrapped, due to their dilapidated condition, added to their unsuitability and

inefficiency for the work to be done. Considerable alterations also are required in the cars retained in service, some of which have already been made, and others are yet to be made. Of 137.3 miles of track previously operated by the company, 49.1 miles have been entirely renewed; 9 miles are worn out and will have to be renewed. Of the five car barns, one at Yorkville has been scrapped, due to inadequacy and unsuitable location for incorporation in the unified system; one at Roncesvalles is now being scrapped, due to inadequacy, defective building and layout; one at Russell requires to be reconstructed, the buildings in connection with which are moving due to defective foundations (the yard has already been extended and rearranged); one at Dundas, in bad physical condition and without space for extensions, the final outcome of which depends on grade separation and service requirements in the northwest section of the city, following the settlement of the Toronto Suburban Ry. This leaves one car house only, on Lansdowne Avenue, which is in reasonably good condition. Even in this case alterations were necessary to obtain adequate fire protection, though the savings in fire insurance premiums will be sufficient to cover the cost of such alterations in three years.

The Question of Fares.—The figures show that the results do not justify a fare reduction. The average fare on the system is 6.165c. per passenger. When considering the question of fares and comparing them with those previously in force, the following obvious facts are often overlooked:—The area served by the Commission, with one fare, is practically 35 square miles, against 17 in the case of the Toronto Ry. Co., i.e., more than double the area. Prior to the date when the service was unified there were four systems operating in the city, each with a separate fare, as follows:—Toronto Ry. Co.; Toronto & York Radials, 3 separate divisions, each charging a separate fare; Toronto Civic Rys., 4 divisions, each charging a separate fare; Toronto Suburban Ry. Thus a passenger, other than those riding in the central section of the city, required to pay more than one fare, with the inconvenience of transferring from one system to the other added. In the case of all of the foregoing, excepting the Toronto Suburban, service is now given at a single fare, over the whole of these lines, as well as over the extensions laid by the Commission. In the case of the Toronto Suburban Ry., however, service in most of the area is given to a great extent by the Commission's buses in West Toronto, and in most of the remaining area by street car lines operated by the Commission. It is therefore clear that many passengers today are carried at practically the same rate of fare as formerly, and have a service already substantially improved which will be still further improved when rehabilitation is completed and the new system operating at maximum efficiency.

A point generally overlooked in these discussions, though one of the most emphasized arguments of those advocating the universal fare, such as exists in Toronto, as against the zone fare, that is, a graded fare based on the distance travelled, is that a universal fare allows the worker to obtain the advantage of cheaper land and better living conditions in the outskirts. Following this a step further, it will be seen that in many of such cases the worker has actually benefited by the unified fare as such. With a uni-

versal fare, every extension added to the system increases the cost, without a corresponding increase in the revenue, as it means carrying the passengers a greater distance for the same fare. The extensions made were, however, necessary, in order to give the service to which car users were already entitled. The mileage of track operated by the Commission is 24.5% greater than the combined mileage of the Toronto Ry. Co. and the civic lines.

Labor costs and the price of all materials have advanced greatly since the date when the 5c fare was adopted as a standard on this continent. A well known authority gives the average wage increase in the industry at over 90%, and the material increase at over 100%, compared with pre-war days.

An analysis of fares in 607 cities on this continent shows that fares range from 5 to 10c. Of this total over 40% are higher than in Toronto at present, and over 30% are the same as in Toronto. It will therefore be seen that more than 70% of all these cities are paying as high or a higher rate than Toronto, yet in all cases they have the advantage of systems constructed in pre-war days, the majority having the benefit of the much lower cost of materials which obtain at any time in the United States, and at the same time the vast majority paying lower wages than in Toronto. In some cases, with systems constructed at low pre-war prices, and paying lower wages the 5c fare is in force. In Toronto, with a large arbitration award, a rebuilding programme which had of necessity to be carried out at times when prices are high, a system that cannot be efficiently and economically operated until rehabilitation is completed, it is obvious that a higher fare is necessary. Take a concrete example, the Montreal Tramways Co., with a long established and well organized enterprise, operated efficiently, the fare is the same as in Toronto, while the trainmen's rate of wage in Toronto is 25% higher than in Montreal, and in other grades the difference is even more marked.

It would not be fitting to let this opportunity go by without expressing the grateful thanks of the staff and myself to those who have assisted our work: To the public who, when they realised the advantage to be gained by the speeding up of the work of rehabilitation, cheerfully put up with the consequent inconvenience. To the members of the Ontario Railway and Municipal Board, having jurisdiction over much of our work, whose advice and co-operation has been a great help. To the city officials and the police, who, by their help, enabled the Commission's work to be pushed ahead, often at considerable inconvenience to their own plans and work. I would also like to express my sincere appreciation of the work of those engaged in administration and operation of the system. The staff have worked, at all hours, unceasingly, to expedite the work and give the best that was in them. The spirit of co-operation also displayed by the men has been most encouraging. The vast majority, realising that the car users are the shareholders in the enterprise, are anxious to give the best possible service, without which the best results cannot be obtained.

Revenue Account for 16 Months ended
Dec. 31, 1922.

INCOME.	
Passenger earnings	\$15,455,337.29
Sundry other sources	268,144.93
	<u>\$15,723,482.22</u>

EXPENDITURE.

Cost of electric current, including operation and maintenance of sub-stations	\$1,499,606.29
Expenses of operation, maintenance, repairs, administration and taxes, including accrued charges.....	9,469,008.59
Net income available for fixed charges	4,754,867.34
	<u>\$15,723,482.22</u>

DISPOSITION OF NET INCOME.

Interest	\$2,588,181.29
Less interest on idle funds.....	532,505.99
	<u>\$2,055,675.30</u>
Redemption of debenture debt, repayment of capital.....	425,107.97
Depreciation	1,012,827.00
Organization expenses	139,218.19
Reserve for unredeemed tickets.....	175,000.00
Reserve for workmen's compensation and public liability.....	400,000.00
Reserve for contingencies.....	437,569.89
Net Income carried to Surplus Account	109,468.99
	<u>\$4,754,867.34</u>

Balance Sheet, Dec. 31, 1922.

ASSETS.

Fixed Assets:	
Land, buildings, electrical distribution system,	

trackwork, rolling stock, buses, machinery, tools and construction equipment:—

On Toronto Transportation Commission account	\$19,935,870.51
Less mortgages	513,840.00

On civic lines account.....	\$19,422,030.51
On Toronto Railway award (which is being appealed), including sundry capital expenditures	2,409,370.67
	<u>11,815,605.55</u>

Stores	\$33,647,006.73
Accounts receivable, less reserve for estimated losses	939,692.10

Current Assets:	\$34,586,698.83
Stores	\$330,552.53
Accounts receivable, less reserve for estimated losses	1,380,438.23
Advances to agents and conductors....	175,630.00
Capital funds in hands of City Treasurer	3,123,587.15
Cash on hand and in bank.....	754,235.00
Prepaid charges	162,486.53
	<u>\$40,513,628.27</u>

LIABILITIES.

Capital Account:	
City of Toronto: Proceeds of issue of debentures	\$25,121,648.55
Debenture discount and expenses.....	939,692.10
	<u>\$26,061,340.65</u>

Less funds in hands of City Treasurer for redemption of debentures.....	982,805.68
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Net debenture debt.....	\$25,078,534.97
Current Liabilities:	
Accounts payable, due and accrued....	2,094,358.30
Redemption of debentures accrued, but not due.....	156,407.51
	<u>\$2,250,765.81</u>

Deferred Liabilities:	
Amount awarded to Toronto Ry. Co. by a majority of the arbitrators, together with interest thereon at 5%, less payments which have already been made on account (This award is being appealed by the city).....	9,186,075.19

Reserves:	
Depreciation	\$1,012,827.00
Workmen's compensation and public liability	400,000.00
Contingencies	430,507.63
Unredeemed tickets.....	175,000.00
Exchange reserve in hands of city treasurer	887,643.00
Redemption of debenture debt.....	982,805.68
	<u>\$3,888,783.31</u>

Surplus:	
Net income from operations.....	109,468.99
	<u>\$40,513,628.27</u>

Double End Safety Cars, Hydro Electric Railways, Essex District.

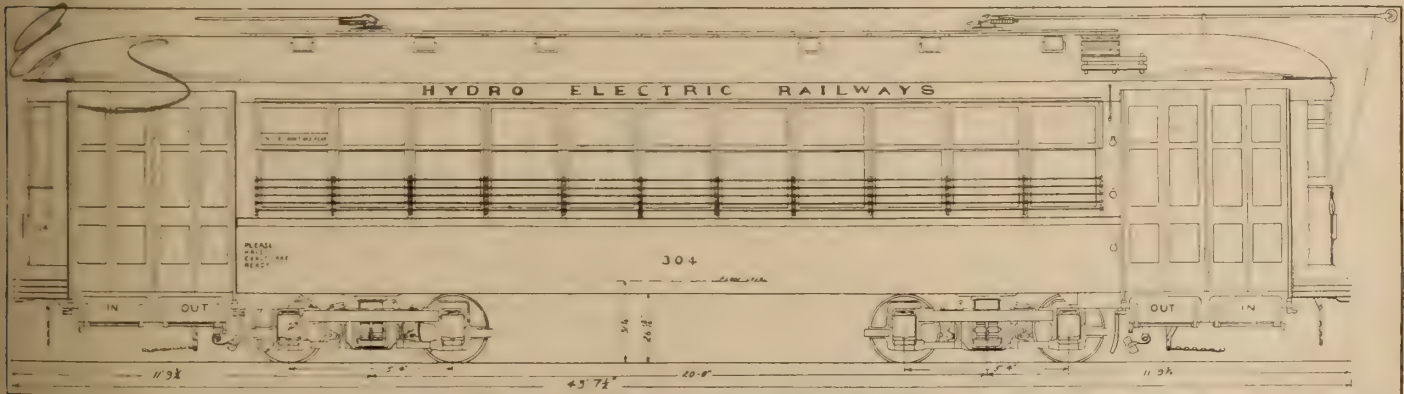
The Hydro Electric Power Commission of Ontario Railways Department has ordered for the Hydro Electric Railways, Essex District, 4 double end, double truck, one-man, two-man safety cars, of steel construction, an elevation of one of which is given herewith. They will have the following general dimensions:

Length over all.....	43 ft. 7½ in.
" " end vestibules.....	42 ft. 6 in.
" " end of car body.....	28 ft. 9 in.

plate, will have the top and bottom cover plates securely riveted to the diaphragms and malleable iron bolster center braces. The bumpers, of 5 in. 6.5 lb. channels, will be bent to shape, and will extend the full width of the car, and around the sides, so as to form protection for the corner posts, and diagonal braces, extending from the side sills and platform side sills to the bumpers, will be connected with bent angles, and gussets, to

form a floor mat. Between the 2 floor courses will be 2 layers of waterproof paper. The floor will be framed to provide trap doors over the motors. In the aisle, at each end of the car, the floor will be ramped 1 in. and on the platform it will be ramped 1 in. to both sides of the car. The top floor will be fastened in place with screws.

The vestibules and door arrangement will be a notable feature. Each vestibule



Double End, Double Truck Safety Car, Hydro Electric Railways, Essex District.

Width over all.....	8 ft. 5 in.
" " sheathing	8 ft. 3 in.
Height from top of rail to top of roof	10 ft. ¾ in.
Height from rail to top of floor in body	2 ft. 7 1/16 in.
Seat spacing	2 ft. 6 in.
Post spacing	2 ft. 6 in.
Truck centers	20 ft.
Approximate weight, car body.....	20,000 lb.
" " control equipment.....	1,200 lb.
" " air brake equipment.....	1,060 lb.
" " motors, gears and cases.....	4,000 lb.
" " trucks	10,000 lb.
" " total	36,260 lb.

The car underframing will include side sills of 3 x 3 x 5/16 in. angles, extending in one piece from body corner post to vestibule corner post, and the platform side sills, 6 in. 15.5 lb. channels, will be connected to form an extension of the side sills, the connection being proportioned so as to develop the full strength of the side and platform sills. The cross sills will be 3 in. 6 lb. channels, rolled steel, and will be connected to the side sills with angle connections and gussets. The bolsters, of built up type, with 12 x ½ in. top plate, and 12 x 5/8 in. bottom

bumpers and sills, and bolted to the crown.

The side framing will include posts, 1½ x 1½ x 3/16 in., rolled steel T section members, extending from side sill to side sill, bent to form carlines, and riveted to the side sills, side sheets, belt rail and letter board. The belt rail, of 3 x ¾ in. material, will extend in one continuous piece from the body corner post to the vestibule corner post, and the letter board, of 3/32 in. sheet steel, will have its lower edge set off to form a drip. The letter board will be spliced on the posts, the splices being soldered and filed, so as to present a smooth even surface. The vestibule corner posts will be of ash.

The roof, to be built in place on the car, will have t. and g. grooved poplar roof boards, 7/16 in. thick, covered with no. 8, 18 oz. canvas.

The floor will be laid in 2 courses, the bottom one to be of 7/16 in. t. and g. white pine, nailed and screwed to the floor supports. The top floor will be of 13/16 in. maple, grooved in the aisle to

will be fitted with 2 pair of folding doors, this new arrangement, with its wide door opening area, providing for quick loading and unloading of passengers. Each pair of doors will be hung on ball bearing shafts, and joined with ball bearing hinges, and will be arranged to operate independently, from door operating engines supplied in connection with the air brake equipment, and located in a pocket over the doors. The steps will be arranged to operate in conjunction with the doors and the door and step engines will be operated from the door selector valve, a portion of the brake valve. The steps will be of 1¼ in. ash, supported on ball bearing hinges and provided with counterbalance springs. The edge of each door will have a rubber strip, extending in a loop, 2 in. wide, and screwed securely to each side of the door. The front dash of the vestibules will be in 3 pieces, one piece extending from corner post to center post, one from center post to center post and the third from center post to corner post. The inside lining of

the vestibules will be steel plate, in 3 pieces, similar to the outside dash. The vestibule interiors will be finished in cherry, the steel wainscoting to be grained and stained to match. The doors will have 32 oz. plain glass in the upper panel; 32 oz. wired glass in the center panel, and the lower panel will be finished in cherry.

The interior of the car will be finished in birch. The headlining will be ¼ in. Agasote screwed in place, the joints to be covered with birch mouldings. The cars will be fitted with advertising racks, with curves in the moulding to take the standard 11 in. cards. The wainscoting below the seat rest will be of birch, and above the seat rest will be of ¼ in. Agasote, the whole finished to correspond with the general interior finish. Curtains throughout will be of Pantasote, and all car trimmings will be of bronze.

Seating.—Each side of the car will be fitted with 9 reversible transverse seats and 2 longitudinal seats, seating capacity being thus provided for 44 passengers. The seats will be spring upholstered and covered with rattan.

The car trucks will be of the Taylor equalized type, and will be of 5 ft. 4 in. wheelbase, and equipped with 26 in. diam. steel wheels, with 3¾ x 7 in. journals.

The electrical equipment will consist of General Electric, type K, control apparatus and four G.E. no. 264 motors, of 25 h.p. each. The air brake installation will include the complete safety car equipment with General Electric safety devices and door operating mechanism.

Other equipment will include a high voltage buzzer system, with a push button at each side post, and a buzzer at each end of car, the buttons to be 5 ft. 5 in. above floor level; car lighting system to use 36 watt lamps, to be equipped with reflectors; two marker lamps to be installed at each end of car, and an incandescent headlight to be placed at each end of car and wired in series on the lighting circuit; six Railway Utility Co. double exhaust ventilators on each side of car; four sand boxes per car for the O. W. Meissenger system of sanding; two Keystone bell ringers, with 10 in. foot gongs, and 2 Keystone foot valves on each car; a portable drawbar, made from 3 x 1 in. flat steel, with hole for 1½ in. coupling at each end of car; two H.B. life guards; 12 sanitary hand straps per car, hung on individual brackets; a Keystone type J illuminated destination sign over right hand vestibule window at each end of car; a double side window cleaner for each vestibule; window guards for the side windows, arranged to drop, to provide access for cleaning the windows; pneumatically operated snow scraper for each end of car; 6 in. metal treads on each step and at edge of platforms; economy meter; trolley rope guard at each end of car; route number sign holders over each headlight, and National staffless hand brake, with 20 in. wheel on each platform.

As the cars were designed primarily for either one or two-man operation, they will be operated as both one-man and two-man cars, it being the management's intention to use two men on them during rush hour periods, and but one man at other times. They will be operated in local service in Walkerville, Windsor and Sandwich, Ont. They are being built by the St. Louis Car Co., St. Louis, Mo., and delivery is expected early in May.

Canadian National Railways Electrification Plans for Toronto District.

Alderman Risk, chairman of the special committee appointed by Toronto City Council to negotiate for the purchase of the Toronto Suburban Ry. lines within the city, received the following letter from Sir Henry Thornton, President Canadian National Rys., on April 19:—"The investigation by a special committee, of the transportation requirements of the Toronto district, which has been under way since last January, has been completed in respect to the Toronto Suburban and Toronto Eastern Rys., to a point where, owing to the urgency of the problem connected with the Toronto Suburban Ry. lines within the city limits,

west of Yonge St., and passing through the proposed York City. This system will provide connections with the lines of the Toronto Transportation Commission at Queen St. and the Don, Bloor St. viaduct, Yonge St. and Weston Road.

"We are prepared to sell to the City of Toronto the Toronto Suburban Ry. lines within the city limits, including the line to Lambton, upon the basis of valuation already agreed upon, and with the understanding that these lines have been operated by the Toronto Suburban Ry. on behalf of the city since Sept., 1921. I desire to point out, however, that the remaining portion of the Weston line is located upon the highway, in a district which is rapidly developing, and which will, within a short time, become a part of your city. It would appear to me that, in order to obviate the necessity of the city negotiating for a further section of this line in the near future, it would be the part of wisdom for it to take the whole of this line to Woodbridge at present, inasmuch as your Transportation Commission is in a better position than we are to provide what is practically a street railway service. We are prepared to turn this line over to the city on the basis of a physical valuation to be agreed upon.

"In order that there may be no misunderstanding, I wish to reiterate that the Canadian National Rys. System does not regard itself under any moral or legal obligation to sell to the City of Toronto or to any other interests what is known as the Toronto Suburban Ry., Guelph Division, extending from Lambton to Guelph, or any other properties, excepting as mentioned above. Nor is it the intention of the Canadian National Rys. to even consider the disposal of any of its properties, excepting again as above set forth.

"I trust that the proposal embodied herein will meet with public approval, and have the support of your council. In order to expedite the work to be done by the Transportation Commission and the Canadian National Rys., I trust that negotiations along the lines above suggested may result in this matter being closed at an early date."

The Toronto City Council's special committee met on April 20 and decided unanimously to recommend to the council that Sir Henry Thornton's offer be accepted, the city to take over all the Toronto Suburban Ry.'s tracks and equipment within the city, for not more than \$190,078, and to pay the deficits incurred by the Canadian National Rys. in operating the lines since Sept. 1, 1921, approximately \$70,000; that a special meeting of council be held forthwith, to deal with the matter, and that application be made to the Ontario Government to pass such validating legislation as may be required to enable the city to complete the purchase. No action was taken in regard to the Weston-Woodbridge line, except to suggest that another special committee be appointed to deal with it.

The city council, at a special meeting on April 24, decided unanimously to buy the T.S.R. Co.'s property, etc., within the city, including its electric railway lines, its rights and franchise, and its poles, wires and equipment, for power and light distribution, at a cost not to exceed \$200,000, plus the deficits incurred by the Canadian National Rys., in operating the lines within the city since Sept. 1, 1921. The question of negotiation for the purchase of the Weston-Woodbridge line was left over for further consideration.

Canadian Electric Railway Association.

Honorary President, E. A. Robert, President, Montreal Tramways Co., and Quebec Ry., Light, Heat & Power Co.

Honorary Vice President, Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co.

Honorary Council: Thos. Ahearn, President, Ottawa Electric Ry.; Acton Burrows, Proprietor, Canadian Railway and Marine World; Geo. Kidd, General Manager, British Columbia Electric Ry.; Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., and director, Quebec Ry., Light, Heat & Power Co.

President, Major F. D. Burpee, Manager and director, Ottawa Electric Ry.

Vice President, H. H. Couzens, General Manager, Toronto Transportation Commission.

Executive Committee: The President, the Vice President, the immediate past President (G. Gordon Gale, Vice President and General Manager, Hull Electric Co.) and D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; D. W. Houston, Superintendent, Regina Municipal Ry.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; R. Mayne-Reade, Superintendent, Quebec Railway, Light & Power Co.; W. R. Robertson, General Superintendent of Railways, Hydro-Electric Power Commission of Ontario; W. L. Weston, Manager, Nova Scotia Tramways & Power Co.; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

Treasurer, W. S. Hart, Managing Director, Three Rivers Traction Co.

Auditor, Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Ry.

Secretary, D. N. Gill, Comptroller, Ottawa Electric Ry., Ottawa, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

it is felt that some announcement should be made.

"The problems affecting the situation between Toronto and Niagara Falls are more involved and will require further time for consideration. The investigation, however, is progressing satisfactorily and it is expected that announcement can be made with respect to this district within a short time.

"It is our intention to proceed with the construction of the Toronto Eastern Ry. immediately and to connect it with the Toronto Suburban Ry.'s Guelph Division by the electrification of the Belt Line Ry., thereby providing a rapid radial service from Guelph to and through Toronto and over the Toronto Eastern territory. This will provide a suburban service for that part of Scarborough Township adjacent to the city, for that part of York Township lying north of East Toronto, and that portion of York Township lying north of St. Clair Ave. and

The Toronto Railway Arbitration Appeal.

In connection with the City of Toronto's appeal against the award of the arbitrators fixing the value of the Toronto Ry. Co.'s property taken over by the city on Sept. 1, 1921, the Divisional Court, on April 6, directed the arbitrators to furnish to the court's Registrar a statement showing as far as they possessed that information the detailed valuations (according to each basis discussed in the award) placed on the various items of undisputed property set out in schedule A to the award and the properties mentioned in schedule B, which the arbitrators held the city were required to take, and the head office building, King and St. Lawrence yard, and Scarborough Beach property, giving the values of land, buildings, plant, tools, equipment, furniture, etc., separately, so far as practicable, and the values of rolling stock in groups, and further showing, as far as practicable, the amount of depreciation allowed in each item. The arbitrators were also directed to state the basis on which the engineer's remuneration, and interest during construction, were compiled, specifying the percentages, if any, applied. This direction was in no way to prejudice the rights of the parties, especially if it should be determined that there was not a right to appeal from the award.

The arbitrators filed an answer, which, it is stated, did not give the information asked for, but intimated that the information was not in their possession in the form asked for. Hume Cronyn, K.C., the chairman of the arbitration board, has since sailed for England.

Mainly About Electric Railway People.

F. A. Huntress, Vice President, in executive charge of Rio de Janeiro Tramway, Light & Power Co., in Brazil, and formerly connected with the Halifax, N.S., Electric Tramway Co., visited Toronto recently.

Charles Gordon Loop, who has been appointed Superintendent, Ways and Structures, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., was born there Feb. 9, 1885, and entered railway service in April 1901, since when he has been, to Nov. 16, 1906, section man, Pere Marquette Rd., Kingsville, Ont.; Nov. 1906 to Dec. 26, 1913, section man and extra gang foreman, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont.; Dec. 26, 1913, to Nov. 30, 1917, Roadmaster, same road, Kingsville, Ont.; Nov. 30, 1917, to April 1, 1918, Construction Foreman, Canadian Steel Corporation, Ojibway, Ont.; April 1, 1918, to March 1, 1923, Roadmaster, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont.

T. Nadeau has been appointed Car House Foreman, Sherbrooke Ry. & Power Co., Sherbrooke, Que., succeeding J. E. Guay, resigned.

A. O'Grady, Inspector, Montreal Tramways Co., died in the Royal Victoria Hospital, Montreal, April 2, from pneumonia, aged 49. He had been in the company's service, and that of its predecessor, for 26 years.

M. W. Wales, who has been appointed Engineer of Maintenance of Way and Structures, Winnipeg Electric Ry., Winnipeg, is a technical graduate in naval

architecture, marine and civil engineering. From June 1907 to Sept. 1909, he was instrument man on construction of East River tunnels and Sunnyside Yard, Pennsylvania Tunnel & Terminal Ry., New York. During 1909, he was in private practice in New York, and in June 1910, was appointed Engineer Inspector, New York City Board of Water Supply, on the construction of the Kensico dam. From April 1917 to Aug. 1918, he was engaged in naval architecture for Continental Shipbuilding Corporation, New York, and from Aug. 1918, to entering the Winnipeg Electric Ry. service, he was in Fraser, Brace Ltd. employ, on hydro electric development work at Chicoutimi, Que., and later as construction engineer on Manitoba Power Co.'s Great Falls plant, in charge of layout and construction of the transmission line, the form and concrete work, reinforcing steel, etc., for the power house and dam.

Electric Railway Employees' Wages, Working Conditions, Etc.

Brantford Municipal Ry.—As already stated in Canadian Railway and Marine World, the employees applied to the Labor Department for the appointment of a board of conciliation in regard to wages and other matters which had been the subject of negotiations since Jan. 1, when the agreement expired. The Department expressed its willingness to appoint a board, but the Brantford Municipal Ry. Commission declined to take any steps. The Minister of Labor was appealed to, and telegraphed the Commission, urging consent. The men met on April 12, and decided to cease work if the Commission held out. As a result of a conference on April 13, the Commission withdrew its opposition to the appointment of a board.

Calgary Municipal Ry.—A board of arbitration began sitting at Calgary, Alta., April 13, to fix rates of wages for the civic employees in all departments. Col. G. E. Sanders, D.S.O., chairman, stated at the outset that both parties had signed an agreement to accept the board's findings as final and binding. The city commissioners had drawn up a schedule providing for reductions in wages varying from 6 to 20%, and proposed a general revision of working conditions. The reductions proposed for municipal railway employees varied from 6 to 10%.

Ottawa Electric Ry.—We are officially advised that the employees filed a draft agreement recently, asking for a 25% increase in wages, and an 8-hour day. The proposed agreement is practically the same as that presented last year, so far as the 8-hour day and some other matters are concerned. The board of conciliation, which sat last year, pointed out in the majority report that the institution of an 8-hour day would mean an increase in operating expenses of \$120,000 a year, and that any increase in the cost of operating the line was impossible unless it was accompanied by an increase in fares. Major F. D. Burpee, Manager, in reply to the recent letter endorsing the draft agreement, pointed out that the volume of business done during the previous six months had been disappointing, and that any increase in operating costs was impossible; in fact it was unlikely that the present scale of wages could be continued after May 1. The employees, at a meeting on April 10, decided to apply to the Labor Depart-

ment for the appointment of a board of conciliation.

Toronto Transportation Commission.—The wage agreement between the Commission and its employees, continuing the wage schedule paid to March 31, 1923, until March 31, 1924, has been signed. The rates were given in Canadian Railway and Marine World for April.

Roller Bearings for Street Cars.

A St. Paul, Minn., press dispatch of March 16 stated that the Twin City Rapid Transit Co., which had been conducting experiments with roller bearings for street railway rolling stock, would equip some cars with roller bearing trucks in April. The dispatch stated that the cars would be "noiseless," due to the introduction of roller bearings, but did not state in what way the replacement of ordinary bearings by roller bearings would do away with noise. H. H. Couzens, General Manager, Toronto Transportation Commission, is reported to have stated in an interview that the noise incidental to street car operation is caused by the wheels on the rails, and by the cars' gears, and that while roller bearings might effect a small saving in power, they would not produce noiseless cars.

T. Julian McGill, Vice President Twin City Rapid Transit Co., has, in response to Canadian Railway and Marine World's enquiry, written as follows:—"For several years we have had in operation trucks with standard sleeve bearings, on our new light weight cars. These trucks are equipped with band brakes, similar to the standard automobile brakes, and rubber cushions over the spiral roller which supports the weight of the truck. Journal box covers have been one of the causes of noise on our cars, and we therefore determined to experiment with the roller bearing. We expect to gain some slight saving in power, and to benefit from several advantages in truck design. We are experimenting with the Hyatt roller bearing, and if our experiments prove successful, we contemplate buying the bearings rather than make them in our own shops. In our endeavor to produce a noiseless car, we have placed roller bearings on a car which weighs 25,000 lb., as against our present standard cars which weigh 42,000 lb. We do not expect to eliminate all track noises, but hope that the ease in starting and stopping, the entire elimination of brake shoe squealing, and the rattling of brake shoe rigging; the elimination of noise from journal box covers, and the rubber cushions supporting the truck, will make the car itself practically noiseless."

Electrical Power Distribution in St. John.—The New Brunswick Power Co., which owns the electric railway in St. John, N.B., has entered an action against the city in the New Brunswick Superior Court, to secure an injunction to prevent the city distributing electric power in the city from the New Brunswick Government's power development at Musquash Falls. The company alleges that it holds an exclusive franchise for the sale of electric power within the city. There were lengthened negotiations between the city and the company with respect to the distribution of the provincial power, during which the company offered to sell its entire undertaking to the city. The city, however, refused to consider the proposition and authorized the construction of a municipal distribution system.

Electric Railway Projects, Construction, Betterments, Etc. Toronto-Hamilton Electric Railway Project.

British Columbia Electric Ry.—Vancouver City Council's board of works has approved of plans for the routing of the company's interurban (Vancouver & Lulu Island Ry.) cars over Granville St. bridge to the corner of Davey and Seymour Sts., thus enabling the company to do away with the station at the south end of the bridge. The agreement between the city and the company came before the city council April 10, when the company objected to the proposal to limit the speed of the interurban cars going across the bridge to 10 miles an hour, and asked that they be allowed to travel at the same rate as the city cars. Some other clauses in the agreement were objected to, and its further consideration was adjourned. The B.C. Government and the Board of Railway Commissioners have to approve of the cars being operated over the bridge, before the agreement becomes operative.

The company proposes to erect an automatic substation in South Vancouver, on the south side of Bodwell Road, near Main St., at a cost of \$39,000. The work is expected to be completed during the summer. (April, pg. 181.)

Hamilton St. Ry.—We are officially advised that the Dominion Power & Transmission Co. is about to build about 2,000 ft. of double track line on King St. West, Hamilton, Ont. (April, pg. 181.)

Hydro Electric Railways—Essex District.—Ford City, Ont., Council is reported to have passed a bylaw providing for raising \$83,218, the proportion of the municipality's share of \$966,000 proposed to be expended on the renewal of tracks and other betterments on the lines in Windsor, Walkerville, Sandwich, Amherstburg and other municipalities. Details of the work proposed were given in Canadian Railway and Marine World for July, 1922, pg. 375. (April, pg. 181.)

Hydro Electric Railways—Toronto and York District.—The dispatching of trains on the Metropolitan Division has been transferred to the old store building at Bond Lake, and will be retained there until a new station and dispatching office is built at Schomberg Jct., where a new freight shed and store building are also to be erected. It is expected that the work will be completed during the summer. When the staff has been removed to Schomberg Jct., the line will be operated in three divisions, viz.: Toronto to Schomberg Jct., Schomberg Jct. to Sutton West, and Schomberg Jct. to Schomberg. (Press report.)

Kingston, Portsmouth & Cataraqui Electric Ry.—We are officially advised that the company proposes to relay about a quarter of a mile of double track in Kingston, Ont. (Oct., 1922, pg. 534.)

Kitchener & Waterloo St. Ry.—A press report states that Kitchener Light Commissioners have let contracts to the Hamilton Bridge Co. for steel work to cost \$12,775, and to Ball Bros. for the other work, to cost \$40,965, on a new car house in Kitchener, Ont. (April, pg. 181.)

London St. Ry.—A press report states that the company contemplates relaying a portion of its tracks, at an estimated cost of \$15,000. The work will, it is stated, be done on portions of Oxford, Wellington and Horton Streets, and will be started as soon as weather conditions permit. It is expected that some other track relaying will be done, but this has

not yet been announced. (Nov., 1922, pg. 581.)

Montreal Tramways Co.—The betterments for this year as arranged between the Montreal Tramways Commission, the Montreal City Council's executive committee and the Montreal Tramways Co., are stated to include the renewal of tracks on Notre Dame St. West, between Fulford St. and Atwater Ave., and from Atwater Ave. to St. Henri city limits; renewal of tracks on Notre Dame St. East, from Frontenac St. to Bourbonniere St.; renewal of tracks on De Fleurimont Ave., from St. Denis St. to de Normanville; and renewal of track on St. Dominique St., from Bellechasse St. to Isabeau St. These renewals are to be undertaken in connection with general street improvement works to be done by the city, and a start will be made thereon as soon as possible. The Notre Dame St. West line from Fulford St., through Ste. Cunegonde, to Atwater Ave., is a single track one, and because of the widening of the street it will be possible to make it a double track one. Other replacements and reconstruction work is said to have been arranged for, and the order in which it will be undertaken will be decided upon after a conference between the engineers of the Commission, the city and the company.

Moncton Tramways, Electricity & Gas Co.—An enquiry was made at the Moncton, N.B., City Council meeting April 9, as to whether the company proposed to extend its electric railway to Sunny Brae and Lewisville. The Mayor stated that he had advised the company's management that the council would like to discuss the matter with them. He felt sure that an opportunity for the discussion of the extension would occur before long. (Nov., 1922, pg. 581.)

Regina Municipal Ry.—The Regina, Sask., ratepayers voted April 18, on a bylaw to provide funds for betterments in connection with the railway. It is proposed to replace the steam-driven generating units at no. 1 power house with motors, and to do other work there at a total cost of \$19,156, which would effect a considerable saving in power costs. The proposed works include a half-interlocking plant over the C.P.R. Bulyea line, two electric switches and an extension and loop at the west end of Thirteenth Ave. (April, pg. 181.)

St. Thomas Municipal Ry.—The St. Thomas, Ont., City Council is considering a proposal to extend the line from the terminus at Ross and Hemlock Sts. to the entrance of Pinafore Park, at an estimated cost of \$15,000. This extension has been advocated for several years, but the city council has, up to the present, declined to find the necessary money. (Sept., 1922, pg. 479.)

Sherbrooke Ry. & Power Co.—We are officially advised that it is proposed to build a siding, 1,200 ft. long, on Frontenac St., Sherbrooke, Que. (Sept., 1922, pg. 479.)

Windsor, Essex & Lake Shore Rapid Ry.—A press report states that paving on 1.5 miles of track, 84 in. wide, is contemplated by the company in Leamington, Ont. (Nov., 1922, pg. 581.)

The Toronto Trades and Labor Council has written the Mayor, alleging overcrowding on Toronto street cars, and suggesting that the city council pass a bylaw prohibiting it.

Representatives of Etobicoke Tp., Mimico Town, New Toronto Village, Toronto Tp., Port Credit Village, Trafalgar Tp., and Oakville Town, and a member of Hamilton's Hydro Electric Commission, met in Oakville, Ont., April 16, to consider the proposed hydro electric railway situation. The following resolution was passed:—"That the municipalities represented, having all voted upon and carried by large majorities bylaws in favor of the construction of a hydro radial railway, request that its construction be commenced at the earliest possible date. That a committee consisting of the mayors of towns and Reeves of all municipalities between Oakville and Toronto wait on Toronto City Council, asking it to co-operate with us in getting a radial built between Oakville and the center of Toronto, and if the right of way be granted, then the committee arrange a deputation to the Government and the Hydro-Electric Power Commission. That the Ontario Government pass an order in council authorizing construction of a hydro radial line through the municipalities from the center of Toronto into Oakville, as provided in the Ontario Hydro Radial Act, 1914. That the Ontario Hydro Commission be authorized to carry out the construction, and to operate the railway after its construction. That this conference takes the above action, firmly believing that the further growth, progress and development of this populous, industrial and agricultural portion of Ontario is dependent in the largest measure upon the construction of this radial railway; and we further believe the railway will be of invaluable advantage to Toronto as well." Another resolution was passed urging the Ontario Government to retain the bonds deposited in connection with the construction of the proposed railway.

The object of the meeting was to take steps for the immediate construction of a line from Toronto to Oakville, from which place there is an electric railway owned by the Dominion Power & Transmission Co. into Hamilton. The Hydro Electric Power Commission of Ontario now operates the old Toronto & York Radial Ry.'s Mimico division along the Lake Shore Road from the Humber River to Port Credit, so that there would only be a section from Port Credit to Oakville, about 8 miles, to be built. It was suggested that the City of Toronto should be asked to co-operate in order to secure an entrance into the center of the city.

A Hamilton press report states that it has been suggested that the Oakville-Hamilton line be acquired from the Dominion Power & Transmission Co., as a part of the undertaking, or if that is not possible, that running powers over it be secured, so that a service be given between Toronto and Hamilton.

A municipal deputation from Hamilton, headed by the Mayor, and accompanied by Hon. W. Rollo, M.L.A. for West Hamilton, waited on Premier Drury and Hon. D. Carmichael, Vice Chairman Hydro Electric Power Commission of Ontario, in Toronto, April 20, and asked for the return to the city of its bonds for \$5,869,286 which are held by the Commission for hydro electric railway construction. The Premier is reported to have stated that if the city passes a resolution asking for the bonds to be returned, the Government will take steps to have them delivered.

The Toronto Transportation Commission's Activities.

The Commission has ordered 210 tons of 85 lb. rail, 22 tons of track bolts, 120 tons track spikes, 2 reels phono-electric trolley wire, and a quantity of miscellaneous materials for construction work.

A sub-contract for electric wiring and the installation of power lines at the repair shops and stores building being erected by the Commission has been awarded by the general contractors, the John V. Gray Construction Co., to J. Everard Myers, Toronto.

The Commission has invited tenders up to May 12 for the purchase from it of 65 single truck cars, 1 Brill M.T. truck car, 2 single truck trailer cars, 11 single truck motor car bodies, 7 double truck closed motor car bodies, 10 single trucks, G.E. 1,000 motors, and 6 pairs of wheels.

Delivery of the 50 motor cars, and all but a few of the 100 trailers, ordered by the Commission from Canadian Car & Foundry Co. was completed April 20. These cars were described and illustrated in Canadian Railway and Marine World for April, pg. 182. Delivery of the 50 motor cars ordered from Ottawa Car Mfg. Co., of the same type as those from Canadian Car & Foundry Co., is expected to commence May 1.

Early in March the Toronto Board of Control recommended to the city council that Lt.-Col. W. G. MacKendrick be appointed a member of the Commission for the balance of the late Fred R. Miller's term. This recommendation precipitated a warm debate, with the result that it was referred back for more information. Early in April, Lt.-Col. MacKendrick wrote the Mayor, stating that he had neither sought nor desired the appointment, and that as he did not believe it would be wise to accept the position unless with the almost unanimous support of the council, he wished his name withdrawn. No further action towards filling the vacancy has been taken at the time of writing (April 18).

The Commission, as stated in our April issue, applied to the city council recently for an appropriation of \$5,000,000 for work to be done this year, this amount not including what would be needed for rehabilitation of the Toronto Suburban Ry. within the city limits, approximately \$2,500,000. The board of control considered the matter on April 11, and although the appropriation sought had not been passed at the time of writing (April 18), it is felt that it will be in the near future. The appropriation will provide for the construction of the car house at Queen St. and Roncesvalles Ave., completion of track rehabilitation and the acquisition of more new equipment.

The Commission installed, on the night of April 18, a grand union intersection at the intersection of Queen St., Roncesvalles Ave., King St. and Lake Shore Road, which is said to be the largest manganese track layout manufactured in Canada or installed on a Canadian electric railway, being considerably larger than that installed last year at the intersection of Bloor and Bathurst Sts., which was described and illustrated in Canadian Railway and Marine World for Sept., 1922. The latest intersection was fabricated by Canadian Steel Foundries, Montreal, its shipping weight was about 150 tons, and its cost about \$70,000. Its installation was under the direction of A. T. Spencer, the Commission's Engineer of Way.

The Commission was asked by the city Board of Control recently to participate in a conference with city officials, the Toronto Hydro Electric Commission, the Toronto Harbor Commission and the Canadian National Exhibition authorities, in reference to radial railway entrances into the city. The Transportation Commission took the stand that it could not engage in such a conference until some definite understanding was reached as to just what radial lines and what entrances were at issue, and pointed out that, as such a conference, and the investigations it would likely originate, would require funds, an effort would likely be made to make the Transportation Commission undertake a large proportion of the expense. The Commission feels that it cannot spend revenues from city street car fares to pay for investigations into radial railway matters.

The Commission's plans for a new car house and yard, to replace the present house and yard at the intersection of Queen and King Sts. and Roncesvalles Ave., were described in Canadian Railway and Marine World for April, and mention was made of the amount of land to be expropriated. On March 28, I. S. Fairty, K.C., the Commission's Counsel, applied to one of the county judges for an order to permit the Commission to enter at once on the property which the city council had expropriated by bylaw. Owners and tenants appeared, asking that the Commission be barred from the lands in question for about 4 months. The application was argued on April 7, shortly after which judgment was given permitting the Commission to take possession May 15. As there is a lot of preliminary work to be done in addition to the demolition of the old car house, this decision, we are officially advised, will not hold up the Commission's plans. A contract for the demolition of the old building has been given to J. Bagshaw, who undertook to do the work for the material, except the plumbing fixtures, and \$3,000. The contract called for demolition of the westerly 96 ft. of the old house, and clearing of the site by April 21, and the completion of the job by June 1. Tenders for the construction of the new house will be called about May 1. The new yard will be graded and track laid by the Commission's own forces. The new house will be similar to that built by the Commission at Eglinton Ave. and Yonge St. in 1922, and described in a preceding number of Canadian Railway and Marine World.

London City Council Asks a Price for the Street Railway.

The London St. Ry. Co.'s franchise for the operation of an electric railway in London, Ont., expires in March, 1925, and is renewable for 5 years, or perhaps more, unless the city gives notice by March 25, 1924, of its intention not to renew. For several years the city council and the company have been at odds about the service given, the condition of the tracks, and track extensions. Plans for the purchase of the line were under consideration in 1919, and a valuation was made by Hydro Electric Power Commission of Ontario engineers, who estimated the value of the property at \$1,356,000, and pointed out that the city

could not pay what the property was worth and operate it as cheaply as the company could. The city council decided Dec. 6, 1919, not to submit a bylaw for the purchase of the property to a vote of the ratepayers. Since then, the controversy has been mainly about fares, and propositions have been made to operate bus lines in opposition to the company's cars. Some consideration was given to a proposal to ask for a legal declaration that the company had forfeited its franchise on several grounds, but there was no following up of this, and after consideration by the council's finance committee, the council decided March 8 to ask the company to fix a price for which it would be willing to sell the entire property. A press report states that the company is willing to sell for about \$1,700,000. At the end of 1919 it was reported that the company was willing to accept something over \$1,200,000. About \$900,000 is mentioned as the price which the city would be prepared to pay. Nothing definite has come out of the negotiations at the time of writing, April 20, except that it is stated that the company must name the price it will take for the line before the city will consider its purchase.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	8 mos. to Feb. 28, 1923	8 mos. to Feb. 28, 1922
Gross	\$836,794	\$821,828
Expenses ...	582,285	573,119
Net	254,509	248,709

	Jan. 1923	Jan. 1922
Gross	\$60,588	\$53,804
Expenses	58,247	62,819
Net	2,341	Def. 9,015
Interest	5,877	5,862
Deficit	3,536	14,877

Winnipeg Electric Railway.—

	2 mons. to Feb. 28, 1923	2 mons. to Feb. 28, 1922
Gross	\$460,137	\$472,857
Expenses	319,908	152,359
Net	140,229	320,498
Fixed charges.	80,620	251,531
Surplus	59,609	68,967

The net surplus for February decreased \$9,358 from Feb. 1922, due to a drop in the railway utility's gross revenue on account of Feb. 1922 including earnings from abnormal traffic due to the winter carnival, a general decrease in normal traffic on account of business conditions and a general change in the class of fares, there being a greater number of passengers availing themselves of tickets and special rates during Feb. 1923, than during Feb. 1922. There was also a decrease in the gas utility's gross earnings attributed to business conditions.

The Winnipeg Electric Ry. Co.'s annual meeting was held in Winnipeg, April 2, W. R. Bawlf, one of the directors, presiding, in the absence of Sir Augustus Nanton, President, and A. W. McLimont, Vice President. The annual report, statements, etc., as summarized for April, were adopted. The directors, all of whom were re-elected, are as follows:—Sir Augustus Nanton, President; A. W. McLimont, Vice President and General Manager; F. Morton Morse, Secretary; W. R. Bawlf, W. J. Bulman, D. N. Finnie, G. V. Hastings, A. J. Nesbitt and Hugh Sutherland. The other officers are J. S. Mackenzie, Treasurer; L. Palk, Assistant Secretary.

Electric Railway Notes.

Sherbrooke Ry. & Power Co. is thinking of ordering 2 one-man safety cars.

The new rule of the road, "Keep to the right," was put into effect in Nova Scotia, April 15.

The Dominion Power & Transmission Co., Hamilton, Ont., advised, April 12, that it was in the market for about 120 tons of girder rails.

Moncton Tramways, Electricity & Gas Co., Moncton, N.B., has received 2 standard light weight Birney safety cars from Ottawa Car Manufacturing Co.

Winnipeg Electric Ry. is reported to have begun the operation of one-man cars on April 9 on the Euclid Ave. line. The city council has granted permission for the operation of these cars on stub lines only.

Winnipeg Electric Ry. will put its spring schedule of cars in operation on May 1. The change in schedule is in consequence of falling off in passenger traffic consequent upon increase in use of automobiles.

Cape Breton Electric Co., in addition to having under consideration the purchase of 8 single truck Birney type

company is reported to have engaged an engineer to report upon the condition of all bridges.

Sandwich, Ont., Town Councillors have been complaining of the car service given by the Hydro Electric Rys., Essex Division, in that town, and have stated that cars are bunched. The railway officials say that the allegations are ridiculous, and in order to find out what is the exact state of affairs, the town council is reported to have decided to instal an electric recording device in the town hall, on which every car going through the town will automatically register the time of its passing.

The Montreal Tramways Co., the Montreal Tramways Commission and the Montreal City Council's executive committee have had under consideration for some time plans for the improvement of the service on the company's lines. Officials of each of the three bodies have their own ideas as to what might be done, and conferences are being held with a view to evolving plans which will be satisfactory to all parties. The various proposals were referred to the engi-

ported:—Bleury and St. Catherine intersection: northbound, 139 cars, carrying 8,200 passengers; southbound, 111 cars, 2,216 passengers; eastbound, 61 cars, 3,445 passengers; total, 366 cars, 16,096 passengers. St. Denis-St. Catherine St. intersection: northbound, 82 cars, 5,012 passengers; southbound, 114 cars, 1,396 passengers; eastbound, 53 cars, 3,075 passengers; westbound, 41 cars, 1,627 passengers; total, 290 cars, 11,110 passengers.

The Montreal City Council's special committee, which was appointed at the beginning of the year to study the city's present and future transportation needs, has held a number of sittings and has discussed a variety of suggestions made by interested parties. The question of the construction of underground lines has not been seriously discussed, the position taken by the committee being that while such may be the final solution of the problem, what is desired is a plan for the immediate relief of existing conditions. It is stated that suggestions have been made for the building of some 25 new lines, which are being considered. The introduction of autobuses on a number of routes has also been advocated, and the committee has the matter under consideration. It is not expected that the committee will have its report ready for some time.

The Canadian Electric Railway Association's annual meeting will be held in Toronto on June 27 to 30. Several papers on important subjects will be read and discussed. The associate members are planning a thorough exhibit of equipment and supplies, the arrangements in connection with which are being made by the committee whose names were given in Canadian Railway and Marine World for April, pg. 184, and of which C. L. Wilson, Assistant Manager, Hydro Electric Rys., Toronto and York District, is chairman. W. R. McRae, Superintendent of Rolling Stock and Shops, Toronto Transportation Commission, is chairman of the entertainment committee, the other members of which are: I. S. Fairty, K.C., Solicitor, Toronto Transportation Commission; E. W. Oliver, General Superintendent, Niagara, St. Catharines & Toronto Ry.; F. S. Livingstone, Traffic Manager, Hydro Electric Rys., Toronto and York District; F. J. Neale, Vice President, Dominion Wheel & Foundries, Ltd.; H. A. Moore, Toronto District Manager, English Electric Co. of Canada; W. R. Carr, Editor, Electrical News; and Aubrey A. Burrows, Business Manager, Canadian Railway and Marine World.

Electric Heating of Buildings.—G. Gordon Gale, Vice President and General Manager, Hull Electric Co., read a paper before the Engineering Institute of Canada's Ottawa branch recently, on the use of electricity for heating buildings. The technical and economic aspects of the matter were fully dealt with, and the impracticability of using electricity for heating buildings was clearly demonstrated, the conclusions arrived at being summarized as follows:—"The direct use of hydro-electricity for heating is not desirable to the individual, because the cost is too high; it is not possible to the community, because there is not enough to supply everyone; and it is not in the interest of the country, because electric power has another and more useful sphere."



British Columbia Electric Ry. Motorbus.

safety cars, and 2 snow ploughs, as mentioned in our last issue, has commenced construction, in its own shops, of a closed trailer express car.

The International Transit Co., Sault Ste. Marie, Ont., has suffered severely this year from heavy snowfalls, traffic having been suspended for days on several occasions, the last being April 2, when there was a very heavy fall, the tracks being finally cleared for operation by April 9.

The British Columbia Electric Ry. Co. was the defendant in an action for damages in the B.C. Supreme Court, April 6, when the court awarded Mrs. Rose McLaren \$1,250 for injuries received while alighting from one of the company's cars. The damages included \$300 for loss of earning power as a spiritualist or psychic reader, Mrs. McLaren claiming that, as a result of the accident, she was unable to "concentrate."

London St. Ry. had two accidents on April 11 and 14. The first was the sagging of the Ridout St. bridge as a street car was passing over it, and the second was the derailment of a car on the Springbank line. No one was injured. Following the first accident, the city council ordered an inspection of all bridges crossed by the railway, and the

neers of the three bodies recently for examination and report to a joint meeting, which it was expected to hold about the end of April.

The British Columbia Electric Ry. started operating its first bus in Vancouver recently, to serve the Grandview-Hastings townsite area over a route of about two miles. A half-hour service is being given, and a more frequent service will be given if the traffic develops. The regular city car fare is charged and transfers are given to and from the electric cars, the buses making connection with both Broadway East and Grandview cars at Commercial Drive and Broadway. A description of the buses was given in Canadian Railway and Marine World for March, pg. 135, also details of the co-operative arrangement under which this bus line was established, and how others may be added.

The Montreal Tramways Commission had a survey made recently of the density of traffic on the Montreal Tramways at the various intersections, during a one-hour period at the evening rush hour. It showed that the intersection of Bleury St. and St. Catherine St. is the most congested point by a considerable margin over that at St. Denis St. and St. Catherine St. The following details are re-

Marine Department

Twenty-Seven Canadian Government Merchant Marine Ships To Be Sold.

The following was approved by the Governor-General on March 29, and passed as order in council 530:—"The committee of the Privy Council have had before them a report, dated March 23, 1923, from the acting Minister of Railways and Canals, submitting that the President of the Canadian Government Merchant Marine Ltd., has recommended that 27 of the smaller vessels of the company be disposed of, for the following, among other, reasons, as reported to him by the General Manager of the Merchant Marine:—That ships of the 2,800, 3,400 and 3,750-ton type are so small that they cannot successfully compete in overseas trade with vessels of the larger type, and are thus confined to the coasting business; that owing to their construction they are not suitable for Canadian inland trade, being too deep in draft and of the wrong type; that the Canadian coasting trade is limited, and the Canadian Government Merchant Marine have more vessels of the smaller type than they can utilize to advantage; that to try and operate these small ships in foreign trade would result in serious losses, voyage by voyage. The General Manager further reports that included in the 27 vessels recommended for disposal are six of 5,100 tons, which are much too expensive to operate for their earning powers, and that while they are capable of overseas trade in competition with ships of the same tonnage, they are at a disadvantage, and that it is impossible to operate them without loss. The General Manager further reports that the disposal of these 27 vessels will best serve the interests of the Canadian Government Merchant Marine and the country, and, in consequence, the President of the Canadian Government Merchant Marine has requested approval of the sale, by public tender, if satisfactory offers can be obtained, but otherwise by private sale, of the 27 vessels enumerated in schedule hereto attached. The Minister, therefore, upon the advice of the Assistant Deputy Minister of Railways and Canals, recommends that approval be granted accordingly, it being understood that, upon any sale being effected, any notes that have been given to the Government to cover the original purchase price from the Crown of the vessel sold shall be cancelled, and all outstanding liability thereunder be considered as discharged, and the mortgage securing the same also discharged by the Government; the price received from any such sale being paid over by the selling company to the Crown, less all costs incidental to such sale. The committee concur in the foregoing recommendation and submit the same for approval."

Following is a list of the ships mentioned in the schedule to the order in council, giving length, breadth and depth, d.w. tonnage, name of builder, year launched, cost of each ship according to the last advices received by Canadian Railway and Marine World from the Marine Department up to the end of 1921, and the port at which each ship is laid up, if not running:—

Canadian Adventurer: 251 ft. x 43½ ft. x 23; 3,408 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.; 1919; \$715,680; at Port McNicoll, Ont.

Canadian Aviator: 331 ft. x 46½ x 25½; 5,166 d.w. tons; Wallace Shipbuilding & Drydock Co., North Vancouver, B.C.; 1919; \$1,071,000; at Montreal.

Canadian Beaver: 251 ft. x 43½ x 26; 3,973 d.w. tons; Collingwood Shipbuilding Co., Kingston, Ont.; 1920; \$855,348.54; West Indies route.

Canadian Coaster: 251 ft. x 43½ x 26; 3,939 d.w. tons; Collingwood Shipbuilding Co., Kingston, Ont.; 1921; \$709,925; West Indies route.

Canadian Engineer: 251 ft. x 43½ x 24¼; 3,679 d.w. tons; Dominion Shipbuilding & Repair Co., Toronto; 1921; \$630,000; at Tiffin, Ont.

Canadian Farmer: 251 ft. x 43½ x 26; 3,964 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.; 1920; \$711,720; at Pacific coast.

building & Repair Co., Toronto; 1921; \$630,000; at Goderich, Ont.

Canadian Raider: 331 ft. x 46½ x 25½; 5,181 d.w. tons; Wallace Shipbuilding & Drydock Co., North Vancouver, B.C.; 1920; \$1,071,000.

Canadian Rancher: 331 ft. x 46 ft. 8 in. x 25 ft. 8 in.; 4,892 d.w. tons; Tidewater Shipbuilders Ltd., Three Rivers, Que.; 1920; \$967,000.

Canadian Rover: 251 ft. x 43½ x 26; 3,920 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.; 1920; \$709,925; at Pacific coast.

Canadian Sailor: 251 ft. x 43½ x 26; 3,357 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.; 1919; \$688,185; at Goderich, Ont.

Canadian Sealer: 270 ft. x 38 x 20½; 2,777 d.w. tons; Nova Scotia Steel & Coal Co., New Glasgow, N.S.; 1919; \$583,065; at Halifax, N.S.

Canadian Settler: 331 ft. x 46½ x 25½; 4,918 d.w. tons; Tidewater Shipbuilders Ltd., Three Rivers, Que.; 1919; \$1,020,000.

Canadian Signaller: 251 ft. x 43½ x 26; 3,975 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.; 1919; \$814,926.25; at Goderich, Ont.

Canadian Sower: 251 ft. x 43½ x 23; 3,406 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.; 1919; \$715,207.50; at Port McNicoll, Ont.

Canadian Trader: 251 ft. x 43½ x 23; 3,341 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.; 1919; \$684,905; at Midland, Ont.

Canadian Trapper: 331 ft. x 46½ x 25½; 5,054 d.w. tons; Davie Shipbuilding & Repairing Co., Lauzon, Que.; 1920; \$998,400.

Canadian Warrior: 251 ft. x 43½ x 26; 3,995 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.; 1919; \$818,975; at Goderich, Ont.

J. A. McKee: 248 ft. x 43 x 25; 3,575 d.w. tons; Swan, Hunter & Wigham Richardson Ltd., Newcastle-upon-Tyne, Eng., 1908; bought from Algoma Steel Corporation, in 1917, for \$500,000, and \$342,600 was spent on repairs and refitting; laid up at Midland, Ont.

Sheba: 290 ft. x 40½ x 20; 3,400 d.w. tons; J. Brown & Sons, Sunderland, Eng.; 1912; on charter.

Thomas J. Drummond: 247 ft. x 43½ ft. x 22 ft. 8 in.; 3,501 d.w. tons; A. McMillan & Sons, Dumbarton, Scotland; 1910; at Midland, Ont.

United Steamships Co. Ltd. has been incorporated under the Dominion Companies Act, with a capital stock of 1,500 shares, without nominal or par value, provided that it shall carry on business with \$7,500, and office at Ottawa, Ont., to own and operate ships and to carry on a general navigation and transportation business. The incorporators are: A. Haydon, J. P. Ebbs, B. Fraser, M. C. Liston and L. Brennan, Ottawa, Ont.

Vancouver Grain Shipments.—During March, 1,418,823 bush. of wheat were shipped by ocean steamships through the Dominion Government elevator at Vancouver, B.C., in 14 ships, of which three, with 529,016 bush., were for United Kingdom ports, one, with 369,600 bush., for Colon for orders, and 10, with 520,207 bush., for Japanese ports.

Dominion Marine Association.

Honorary President, A. A. Wright, President, Tidewater Shipbuilders, and Vice President and Managing Director, Davie Shipbuilding & Repairing Co., Montreal.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Montreal.

First Vice President, Hon. L. C. Webster, President, Webster Steamship Co., Montreal.

Second Vice President, G. J. Madden, George Hall Coal Co. of Canada, Ogdensburg, N.Y.

Executive Committee, The President, First and Second Vice Presidents, and W. E. Burke, Canada Steamship Lines, Montreal; **Yvon Dupre,** Sincennes-McNaughton Line, Montreal; **M. J. Haney,** Canada Steamship Lines, Toronto; **A. E. Mathews,** Mathews Steamship Co., Toronto; **W. J. McCormack,** Algoma Central Steamship Co., Sault Ste. Marie, Ont.; **Col. G. P. Murphy,** C.M.G., Ottawa Transportation Co., Ottawa, Ont.; **E. W. Oliver,** Niagara, St. Catharines & Toronto Navigation Co., Toronto; **J. F. Sowards,** Kingston, Ont.; **J. F. M. Stewart,** Point Anne Quarries Ltd., Toronto; **John Waller,** Keystone Transports, Montreal; **Honorary members, L. L. Henderson and A. A. Wright,** Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

Canadian Gunner: 251 ft. x 43½ x 26; 3,978 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.; 1919; \$815,541.25; at Halifax, N.S.

Canadian Harvester: 251 ft. x 43½ x 26; 4,000 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.; 1921; \$709,925; West Indies route.

Canadian Hunter: 331 ft. x 46½ x 25½; 5,021 d.w. tons; Davie Shipbuilding & Repairing Co., Lauzon, Que.; 1920; \$998,400; at Montreal.

Canadian Logger: 251 ft. x 43½ x 26; 3,839 d.w. tons; Midland Shipbuilding Co., Midland, Ont.; 1921; \$709,925; at Montreal.

Canadian Miner: 270 ft. x 38 x 20½; 2,778 d.w. tons; Nova Scotia Steel & Coal Co., New Glasgow, N.S.; 1920; \$583,380; at Halifax, N.S.

Canadian Observer: 251 ft. x 43½ x 26; 3,982 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.; 1920; \$712,910; at Pacific coast.

Canadian Pathfinder: 251 ft. x 43½ x 21¼; 3,640 d.w. tons; Dominion Ship-

International Waterways Navigation, Ltd. Bond Issue.

International Waterways Navigation Ltd., which was incorporated recently, with office at Montreal, has authorized capital as follows: preferred stock, \$66,000; common stock, 1,200 shares of no par value, all of which have been issued. It is offering \$50,000 of 7% first mortgage sinking fund bonds, in denominations of \$500 and \$1,000, due March 1, 1933. An annual sinking fund has been provided, beginning one year from the date of issue, of \$5,000, or one-tenth of the issue. The company will purchase its bonds in the open market if obtainable at or below the call prices, otherwise they will be called as follows: from 1924 to 1926, inclusive, at 103 and interest; from 1927 to 1929, inclusive, at 102 and interest, and from 1930 to maturity, at 101 and interest, and they are callable for sinking fund purposes, or as a whole, at prices mentioned. They are offered at 99.

The company owns the s.s. Aragon, which was built at Wyandotte, Mich., in 1896, and is of the well deck type, with steel hull, steam pump wells, electric light, 2 watertight bulkheads and steel boiler house. Her dimensions are: length b.p. 247 ft. 7 in., breadth moulded 42½ ft., depth moulded 17 ft.; tonnage, 1,450 gross, 1,072 net, 2,200 d.w.; capacity, about 75,000 bush. of grain. She is equipped with triple expansion engines, with cylinders 17, 27½ and 46 in. diam. by 36 in. stroke, 650 i.h.p. at 91 r.p.m., and supplied with steam by a Scotch marine boiler, 12½ ft. diam. by 12 ft. long, at 160 lb. under forced draft. The company will operate her between Port Colborne and Montreal, and will also conduct a general brokerage business. The Aragon, while under operation by previous owners, ran ashore at Salmon Point, near Kingston, Ont., Nov. 17, 1921, and was abandoned to the underwriters, from whom she was bought by John E. Russell, Toronto, who salvaged and repaired her. She has been appraised by Walter Lambert, naval and marine surveyor, Montreal, at \$92,000, after allowing for depreciation, and by W. N.

McMaster, marine surveyor, Montreal, at \$103,275. She is insured for \$165,000, payable to the bondholders, in case of total loss, and is also insured against loss of earnings up to \$500 a day, for time lost in case of accident. The company started operations Aug. 28, 1922, and for the 105 days of the 1922 navigation season, its net earnings were \$26,022.04.

The directors are: Capt. C. D. Secord, Toronto, President; John E. Russell, Toronto, Vice President; R. A. Campbell, Montreal, Managing Director; Louis Wolfe, Kendall Morton, Montreal; W. J. Saurin, T. F. White, Port Colborne, Ont.

The Icebreaker Mikula's Mishap.

The following questions were asked in the House of Commons recently, by R. B. Hanson, York-Sunbury, N.B., the answers being given by the Minister of Marine, Mr. Lapointe.

Q. "Is it a fact that the icebreaker Mikula, formerly known as the J. D. Hazen, went ashore at Cap a la Roche, near Quebec, during March?" A. "The s.s. Mikula while proceeding to Quebec on March 13, was overtaken in the narrow channel at Cap a la Roche by a heavy snow squall and grounded."

Q. "Has any investigation been held by the Wreck Commissioners, or anyone else, as to the cause of the stranding of this ship?" A. "No investigation has been held, but the Engineer of the River St. Lawrence ship channel, who was on board the ship at the time, has submitted a full report."

Q. "Who was the captain in charge at the time of the stranding, and when was he appointed?" A. "Capt. John Hearn, appointed master C.G.S. Montcalm, March 25, 1919; on April 15, 1922, he was appointed master to bring the Mikula out to Canada. He took charge of the Mikula again Dec. 16, 1922."

Q. "Has the officer in charge at the time of the stranding been suspended?" A. "No."

Q. "What is the estimated cost of the repairs of the ship now in drydock at Lauzon?" A. "The ship is not in drydock, and as the extent of the damage

is as yet unknown, no estimate of the cost of repairs has been made."

Q. "Did the Government have, during the present season, a supply of coal at Three Rivers for this ship?" A. "A supply of coal for the ship was available at Three Rivers."

Q. "Is it not a fact that if a supply of coal had been on hand at Three Rivers at the time of the stranding, there would have been no necessity for the ship to travel to Quebec for coal and return, a distance of 180 miles, and thereby have avoided the possibility of stranding?" A. "The ship was returning to Quebec, not for the purpose of obtaining a supply of coal, but to make an examination of difficulties that had arisen with the port propeller. Inasmuch as the ship had to return to Quebec for this purpose, it was deemed more advantageous to obtain the necessary coal requirements there, the price per ton being \$8.50, as against a price of \$9.50 per ton by the Dominion Coal Co. at Three Rivers, and a price of \$12 per ton offered by J. H. Giroux. Investigation in the meantime reveals the port propeller as having two broken blades."

Vancouver Terminal Grain Elevator.

The Minister of Trade and Commerce gave the following information in the House of Commons recently, in answer to questions by G. G. Coote, Macleod, Alta.

The following number of bushels of grain were handled by the elevator in 1922:

	Stock on hand Dec. 31, 1921	Receipts	Total handlings
Wheat	822,930	12,085,158	12,908,088
Oats	410	33,004	33,414
Barley	nil	1,823	1,823
Flax	nil	nil	nil
Rye	nil	155,335	155,335
Total	823,340	12,275,320	13,098,660

The total receipts in connection with the elevator in 1922 were \$171,273.02. The total expenditure was \$73,868.59. The elevator total storage capacity is 1,250,000 bush. It was completed Nov. 30, 1916. Its capital cost to Jan. 1, 1923, was \$837,351.71.

Ships Registered in Canada in January and February, 1923.

In compiling the following lists of ships registered, steamboats and motorboats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, n.h.p. etc.	Owner or Managing Owner	
99402	Azov (1)	St. John N.B.	Low Walker, Eng.	1892	285.0	38.5	25.9	2332	1512	225 Se.	Fundy Transport Ltd., East St. John, N.B.
150614	Pointe Bleue	Quebec, Que.	Pointe Bleue, Que.	1920	86.5	32.0	4.8	120	53	11 Pa.	A. Levesque, Roberval, Que.
150768	Sea Swell	Vancouver, B.C.	Vancouver, B.C.	1922	75.7	19.9	9.3	103	3	19 Sc.	C. Mowat, Vancouver, B.C.
(1) Re-registered.											

(1) Re-registered.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
150872	A.S.B. 1	New Westminster, B.C.	Barge	New Westminster, B.C.....1923	87.3	31.1	8.6	213	213	J. A. Smith, Vancouver, B.C., and Mrs. A. S. Smith, New Westminster, B.C.
150776	C.L. & R. No. 1	Vancouver, B.C.	Scow	North Vancouver, B.C.....1923	70.5	26.0	6.7	105	105	Comox Logging & Railway Co., Vancouver, B.C.
150871	C.L. & R. No. 2	New Westminster, B.C.	Barge	New Westminster, B.C.....1923	69.5	26.2	6.4	100	100	" "
150891	C. Bros. No. 1	Victoria, B.C.	Barge	Victoria, B.C. ....1923	95.0	34.0	8.0	211	211	Osborne Bay Timber Buyers, Ltd., Victoria, B.C.
150892	C. Bros. No. 2	Victoria, B.C.	Barge	Victoria, B.C. ....1923	95.5	34.2	8.0	211	211	" "
150801	Christie & Elinor	Shelburne, N.S.	Schr.	Shelburne, N.S. ....1922	111.2	25.2	11.1	143	143	W. Forsey, Grand Bank, Nfld.
150778	Deeks No. 4	Vancouver, B.C.	Scow	Vancouver, B.C. ....1923	90.0	30.0	8.0	184	184	J. F. Deeks, Vancouver, B.C.
112197	E. Zee Bee	Chatham, Ont.	Dredge	Chatham, Ont. ....(1894)	60.0	25.0	4.8	135	135	Chatham Dredging & General Contracting Co., Chatham, Ont.
112198	McGuire	Chatham, Ont.	Dredge	Pelee Island, Ont.....(1893)	69.0	24.0	4.8	128	128	" "
				Chatham, Ont. ....(1920)						
150414	Pauline C. Winters	Lunenburg, N.S.	Schr.	Lunenburg, N.S. ....1923	121.2	26.4	9.8	140	95	Freeman Anderson, Lunenburg, N.S.
141778	Vera P. Thornhill	LaHave, N.S.	Schr.	Shelburne, N.S. ....1922	123.5	26.2	11.0	173	128	Fraser Gray, LaHave, N.S.

Canadian Government Merchant Marine Operations, Etc.

Additional Appropriation.—The further supplementary estimates for the year ended March 31, 1923, submitted in the House of Commons recently, contain the following item:—"To increase the amount of loan authorized by vote 139, main estimates, 1922-23. Additional amount required (including Governor-General's warrant Nov. 30, 1922, \$1,000,000), \$1,700,000." Vote 139, main estimates, 1922-23, provided for a loan of \$4,360,720 to Canadian Government Merchant Marine, to be applied in the payment of deficits in operation, and capital expenditure in connection with ships under the company's control.

Sale of Ships.—Full particulars of the 27 ships of the fleet which are to be sold are given on an earlier page of this issue. The following discussion occurred in the House of Commons on April 18:—**MURRAY MacLAREN**, St. John, N.B.: "I wish to refer to an item which appears in the press to the effect that the Government is negotiating with a syndicate of ship owners for the sale of its entire mercantile fleet, and that a condition of these negotiations is that special arrangements should be made on behalf of the syndicate whereby it should carry on especially the business of the transportation of Canadian grain. I therefore wish to ask the acting Minister of Railways if he can state whether negotiations are going on for the sale of the Canadian mercantile fleet; if so, what the conditions of the sale are, and if it is correct that the arrangement will contain a special provision whereby Canadian grain will be accorded special treatment?" **HON. G. P. GRAHAM**: "As the House well knows, the Canadian National Ry. board, with the Government's consent, is offering for sale 27 of the smaller ships. So far as I know, there are no negotiations for the sale of the larger seagoing vessels." **MR. MacLAREN**: "Can the minister state whether arrangements are being made between the Government and the syndicate for the handling of Canadian grain?" **MR. GRAHAM**: "What syndicate? I understood my hon. friend to say that he based that part of his question on the answer to the other part; that is to say, the reply to the question whether arrangements were being made for the sale of the merchant marine. My reply is that so far as I know, there are no negotiations taking place for the sale of the larger ships." **MR. MacLAREN**: "As regards the 27 ships which the minister spoke of, are special arrangements being made for the handling of Canadian grain?" **MR. GRAHAM**: "I cannot say. Up to date, I think, no offer has been made for these ships, and those of smaller tonnage, possibly, would not be suitable for the purpose to which my hon. friend refers."

European Services.—The C.G.M.M. has decided to discontinue its services from Canada to Liverpool and Glasgow. In the meantime, London will be made a port of call for a service to Antwerp, which will be established on the opening of navigation. The service to Cardiff and Swansea will be made fortnightly, with 8,500-ton ships.

Mediterranean Service Urged.—**D. Spence**, Parkdale, Toronto, asked the following question in the House of Commons recently:—"Canada, being dependent for a large quantity of citrous fruits, olive oils, dates, figs, raisins, and similar products shipped from Mediterranean

ports, has the Government considered the establishment of a regular boat service between the Mediterranean ports and Canada, and if so, when will such service commence, and at what intervals will they sail?"

The acting Minister of Railways, **Mr. Graham**, replied: "The Canadian Government Merchant Marine management states that the question of establishing a regular service between the Mediterranean ports and Canada has been very thoroughly considered, and it has been decided that the present is not an opportune time to inaugurate such a service."

A few days later, **Mr. Spence** brought the matter up again, referring to his question, and saying: "I am afraid that questions of this kind do not receive the consideration that they deserve; the answer given in this case simply makes a perfect farce of the whole situation. I did not put the question on the order paper for the purpose of embarrassing the Government. I was not criticizing the Government, nor do I propose to do so now. But knowing something of transportation by land and by water, I feel that a service should be established between Mediterranean and Canadian ports. I believe that Mediterranean ports are anxious to ship to Canadian ports, and importers are desirous of receiving goods from that part of the world through Canadian ports. It is said that we have a great merchant marine today that is doing no business. The answer to my question states that this is not the opportune time to establish such a service. I say that this is the time and this is the opportunity. The spring season is coming on. On account of frosts in California last year, 90% of the lemons imported into Canada this year will come from Mediterranean ports, particularly from Italy. These lemons will have to be brought to Montreal, and shipped inland as far as Calgary and Edmonton, and probably to Vancouver. If a steamship service between Mediterranean and Canadian ports was established, the result would be a benefit to our own Canadian transportation lines and the keeping of the transport business within our country. In the past we have lost a great deal, through breakages and otherwise, in the carriage through United States ports. The congestion at New York is so bad that sometimes cargoes have to wait two weeks before getting a ship to take them to their destinations; or there may be a lapse of a week or two before cars can be got to transport the goods to inland points throughout this Dominion. I feel that some consideration should be given to this question, and I hope the Minister of Railways will consider it with the Canadian Government Merchant Marine management, and if possible establish a service between Mediterranean ports and this country. It is very necessary that we should have such a service. The loss in breakages alone at New York is very considerable, owing to the very heavy traffic and congestion. There is no reason why such a service cannot be established. It would not only help to make the Government merchant marine a better paying proposition than it is today, but help to build up our national railway lines by keeping the money in our own country."

The Minister of Trade and Commerce, **Mr. Robb**, said: "I understand that my

hon. friend's objection is that Canada has done nothing to put on a service or subsidize a service between Mediterranean ports and Canada, and his argument largely is that this service should be established because Canada imports from countries along the Mediterranean. I submit that Canada does all that it is possible to do to encourage and subsidize services from Canada to countries that buy Canadian products. If there are countries desiring to sell their products to Canada, I think it should be up to them to see that they establish a service to carry those products to this country. We have a subsidized service between the West India Islands and Canada carrying fruits such as come from the Mediterranean. We have also a subsidized service between Australia and Canada, and Australia also produces products similar in a very large degree to the products of the Mediterranean region. We have a service between South Africa and Canada, and South Africa, one of the sister dominions, also produces commodities similar to those coming from the countries along the Mediterranean. I realize the importance of doing all that we can to establish connections that will give as cheaply as possible to our own people the products that we require and do not produce in this country, but we in Canada are more interested in encouraging services from Canada to countries that buy our products than encouraging services from countries exporting to Canada. It seems to me it would be good business upon the part of those countries themselves to establish better trade communications with Canada if they desire to put their products into this country."

Officers of Steamships.—The following chief engineers of steamships have been appointed in addition to those mentioned in previous issues:—Canadian Adventurer, **W. Morrison**; Canadian Coaster, **J. Still**; Canadian Engineer, **E. Pattinson**; Canadian Pathfinder, **C. B. Scott**; Canadian Sailor, **S. Stanley**; Canadian Sower, **G. Stephen**; Canadian Trader, **J. A. Burgess**.

The s.s. **Canadian Pioneer**, which was damaged by fire at Auckland, New Zealand, in March, has been repaired there. The cargo, which consisted chiefly of wool for Montreal, was unloaded and sold by auction.

Information Wanted.—The House of Commons passed an order recently, on motion of **H. H. Stevens**, Vancouver Center, B.C., for a return showing the earnings and expenditures of the following ships on the trips set forth below:—Canadian Winner, leaving Vancouver Aug. 8, 1922, for the Orient, returning Oct. 12, 1922; Canadian Inventor, leaving Vancouver Sept. 28, 1922, for the Orient, returning Nov. 20, 1922; Canadian Britisher, leaving Vancouver May 13, 1922, for Australia, returning Oct. 4, 1922; Canadian Traveller, leaving Vancouver July 13, 1922, for Australia, returning Dec. 1, 1922; Canadian Farmer, leaving Vancouver July 18, 1922, for California points, returning Aug. 12, 1922; also from Vancouver, Aug. 14, for California points, returning Sept. 13, 1922. Canadian Observer, leaving Vancouver July 7, 1922, for California, returning Aug. 23, 1922; also Aug. 8, 1922, for California points, returning Sept. 24, 1922.

Tank Cars Transportation.—**J. Archambault**, Chambly and Vercheres, asked

in the House of Commons recently:—"What ships were used to transport tank cars to Russia during the war? Were any ships of Canadian Government Merchant Marine, Ltd., chartered to Eaton & Nelligan Co., shipping agents, for that purpose? Was a contract signed between that company and the Canadian Government Merchant Marine? If not, why? If so, by whom was the contract signed, and on what authority? What was the total loss suffered by Canadian Government Merchant Marine through that transaction?" The Minister of Trade and Commerce replied: "No information."

Montreal Sailings.

London and Antwerp service:—Canadian Victor, May 9; Canadian Commander, May 23; Canadian Planter, June 6; Canadian Conqueror, June 20; Canadian Victor, July 4.

Cardiff and Swansea service:—Canadian Challenger, May 4; Canadian Mariner, May 18; Canadian Explorer, June 1; Canadian Leader, June 15; Canadian Challenger, June 29.

New Zealand and Australia service:—Canadian Pioneer, May 26; Canadian Cruiser, June 26; Canadian Constructor, July 28.

St. Kitts, Antigua, Barbados, Trinidad and Demerara service:—Canadian Squatter, May 5; Canadian Carrier, May 16; Canadian Otter, May 30; Canadian Runner, June 13; Canadian Squatter, June 27.

Hamilton, Nassau, Kingston, Belize, Bermuda, Bahamas, Jamaica, Br. Honduras service:—Canadian Forester, May 3; Canadian Fisher, May 24; Canadian Forester, June 14; Canadian Fisher, July 5.

St. John's, Nfld., via Charlottetown:—Canadian Sapper, May 5; Canadian Sapper, May 26; Canadian Sapper, June 16; Canadian Sapper, July 7.

Vancouver, B.C., Sailings.

Australasian service:—Canadian Inventor, April 15; Auckland, Sydney, Melbourne, Adelaide: Canadian Skirmisher, April 25; Sydney, Melbourne, Adelaide: Canadian Traveller, May 25; Auckland, Sydney, Melbourne, Adelaide: Canadian Scottish, June 20; Sydney, Melbourne, Adelaide.

Oriental service to Yokohama, Kobe, Shanghai:—Canadian Freighter, April 30; Canadian Prospector, May 30; Canadian Transporter, June 30.

Indian service to Bombay:—Canadian Winner, June 20.

The Detroit & Cleveland Navigation Co., as stated in previous issues, is having two steamships built at Cleveland, Ohio, and Detroit, Mich., for express service on its Detroit and Buffalo Division. They will have 625 staterooms for passengers, and accommodation for 300 officers and crew. The ship's dimensions will be: length 535 ft., breadth of hull 58 ft., breadth over all 98½ ft., draft, loaded, 15 ft.; cargo capacity 1,000 tons; speed 21 miles an hour. The hull, including topside, main and orlop decks, and all deck houses, will be of steel, and the double bottom will be divided into 16 watertight divisions. The hold will be divided into 11 compartments, by watertight bulkheads. Electric service elevators, refrigerating plant, electric ventilating, air washing and cooling machines, and ducts extending throughout the hull, will be provided, as well as electric lighting plant. The sleeping accommodation will be provided on three decks, each stateroom having two berths, and will be equipped with water pressure service, electric lights and telephones. All parlor rooms will have twin beds, private bathroom, etc., and those on C deck will have private balconies. The propelling machinery will consist of 3-cylinder compound engines of 10,000 h.p., supplied with steam by 6 single ended fire tube boilers under induced draft. The ships were designed by Frank Kirby, Naval Architect.

Canadian Shipments Through Panama Canal.—The tonnage of cargo passing through the Panama Canal from the Pacific coast to the Atlantic coast, during February, included 61,322 originating in Canada, compared with 40,400 in Feb., 1922, and 3,509 in Feb., 1921.

Wreck of the Steamship Alaskan.

A. W. Neill, Comox-Alberni, said in the House of Commons, April 9:—"I would like to ask the Minister of Marine if he can give us any information as to when the report on the investigation into the wreck of the s.s. Alaskan is likely to be brought down. The investigation took place more than two months ago, and the report is not likely to be voluminous. Apart from this investigation, sufficient has been brought out in connection with the wreck of the Alaskan, and three other wrecks which have unfortunately occurred since then, two of them with loss of life, to show that the representations made by myself and by many public bodies in the west are well founded, namely, that the life saving appliances or provisions out there are not adequate. I would like to ask the minister what steps he is taking or contemplates taking to deal with this matter? Time is slipping away; the session will soon be over, and this is a very important matter to the people on the coast of British Columbia."

The Minister of Marine, Mr. Lapointe, replied:—"The report of the Wreck Commissioner who investigated the wreck of the Alaskan has not been received. My information is that the stenographer who took the evidence had been ill, and was unable to transcribe his notes; then, the Commissioner has been ill. But we are informed that the report will be submitted in the course of a few days. Meanwhile, this matter has been brought to my attention on several occasions by my hon. friend and by various bodies in British Columbia, and I think that something should be done to improve the conditions there. I have decided that something should be done this year, first, by establishing small wireless telephone stations in the various lighthouses, so that communication may be had at any time with the life saving stations at Bamfield and Tofino. It has also been decided that the Department shall have a station at Bamfield during the winter and a ship suitable for the work which shall be equipped with all the necessary life saving appliances and be in communication with all the lighthouses. We have in the Fisheries Department two or three boats, any one of which I think would serve the purpose. It is also intended to place notice boards alongside the telegraph lines running along the shore, to indicate the nearest place where survivors from a wreck can find food and shelter. My hon. friend has suggested to me at various times that boats over 100 tons register should be subject to the same inspection as boats of 150 tons and over, and that the Shipping Act be amended accordingly. That matter is engaging the Department's attention."

The following questions were asked in the House of Commons, on April 12, by L. J. Ladner, Vancouver, B.C., and answered by the Minister of Marine, Mr. Lapointe:—

Q. "Has the Government received a report regarding the wreck of the s.s. Alaskan, with the loss of all its crew, near Pachena Point, on the Pacific coast, in January last?" A. "Yes."

Q. "Has the Government, on account of economy or otherwise, reduced by 50% or any other amount, the strength of the unwatched lights on that coast or any part of it and thereby reduced the visibility of the said lights? If such or any other reduction has been made, were the changes published to master

mariners, so that they would not be fooled by the changed lights?"

A. "No."

Q. "Does the Government pay the Pacific Salvage Co. \$30,000 a year or any other amount to keep up steam on board the s.s. Algerine?" A. "The Government pays the Pacific Salvage Co. \$10,000 a year to maintain a wrecking plant at Victoria, for service on the B.C. coast."

Q. "Is the s.s. Algerine a seaworthy vessel, suitable for the purpose for which it is employed by the Government?" A. "Yes."

Q. "Did the United States s.s. Snohomish rescue the crew of the s.s. Tuscan Prince, which ran on to the coast of British Columbia?" A. "No. The Tuscan Prince's crew were rescued by the crew of the Government life boat stationed at Bamfield Creek."

Q. "Is it the Government's intention to provide proper and efficient coast protection for British Columbia, by having an ocean going tug similar to the s.s. Snohomish, or by having any other suitable class of tug, for assisting the mercantile marine in storms or times of peril on the sea?" A. "See statement of Minister of Marine on April 9." This is given above.

Canadian Railway and Marine World received, on April 19, from Dominion Wreck Commissioner Capt. L. A. Demers, a copy of the judgment given on Feb. 12, as follows:—In the investigation held at Vancouver, B.C., Feb. 1 and 2, and at Victoria, B.C., Feb. 8 and 9, by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. A. P. W. Williamson and J. T. Edmund, as nautical assessors, into the loss, with all hands, of the British s.s. Alaskan, near Pachena Point, on the west coast of Vancouver Island, Jan. 2, the court finds that, for the reasons stated in an annex to its report, the total loss of the Alaskan was, without doubt, due to the violence of the southwest gale then raging. There was, however, not sufficient evidence to enable the court to arrive at a conclusion as to the particular manner in which the ship was lost, or the specific cause, if any, apart from the weather conditions, which led to her loss.

Marine and Fisheries Department Salaries.—Estimates for the year ending March 31, 1924, submitted to the House of Commons recently provide for the following salaries to the principal officials of the Department:—Deputy Minister, \$6,000; Assistant Deputy Ministers at \$4,500, \$9,000; Chief Naval Architect, \$5,400; Chief Engineer, \$5,400; Commissioner of Lights, \$5,100; Chairman, Steamship Inspection Board, \$5,100; Chief Hydrographer, \$4,800; Director, Radio Service, \$4,500; Dominion Wreck Commissioner, \$4,200; Chief Tidal and Current Surveyor, \$4,200; Director, Pilotage, \$4,155; Accountant, grade 5, \$4,020; Purchasing Agent, \$4,000; Superintendent of Agencies, \$3,960; Principal Steamship Inspectors, 2 at \$3,960, \$7,920; Assistant Commissioner of Lights, \$3,840; Hydrographers, 1 at \$3,800, 1 at \$3,360, \$7,160; Superintendent, Masters and Seamen, \$3,650; Assistant Chief Engineer, \$3,480; Superintendent, Harbor Commission, \$3,400; Division Superintendent, Radio Service, \$3,240; Assistant Naval Architect, \$3,180; Senior Inspector, Fog Alarms, \$3,180.

Cattle Shipments to Great Britain.

Owing to the removal of the embargo on the shipment of Canadian store cattle to Great Britain, a heavy demand has arisen for space. While the embargo has been in force, shipping companies have not had their ships fitted for the transportation of cattle, the trade having become practically non-existent. Though considerable preparation has been made for a resumption of the trade, no extensive refit of ships has taken place, only such as has been necessary to handle shipments which had been booked in advance. Many shippers, apparently, have not realized the necessity for installation of special fittings for handling cattle, and the heavy expense involved; therefore, cattle are awaiting shipment, for which no space is available, and shipping companies are averse to incurring the expense of fitting their ships for the cattle trade, until they are convinced that it is likely to be reasonably continuous, and not spasmodic. In response to a deputation on April 16, the Minister of Agriculture stated that the resumption of a shipping trade after a suspension of practically 30 years, was naturally attended by some little difficulty, but he had been assured that though there might be a slight shortage of shipping space for a time, this would be remedied after May, when shipping companies would have had time to arrange ample space for, possibly, a larger number of cattle than might be offered for shipment.

The Anchor-Donaldson Line is reported to have ordered from Vickers Ltd., Barrow-in-Furness, Eng., a large cargo and cattle ship, equipped with internal combustion engines, for the Canadian cattle trade. It is said that the propelling machinery will be of the 4-cycle solid injection type, developing about 3,000 h.p. on a single shaft, and that the ship will be 400 ft. long, with a carrying capacity of about 8,000 tons of cargo, as well as several hundred cattle.

R. FORKE, Brandon, Man., leader of the Progressive party, said in the House of Commons April 16:—"I should like to ask the Minister of Agriculture a question. I notice an interview in the Manitoba Free Press, given by W. H. Forster, of England, who came to Canada from England to purchase cattle. He intended purchasing about 2,000; he found when he came that all available space for ocean shipments had been contracted for. It had been broadcast in England that Canada would have for sale this spring about 25,000 or 30,000 cattle suitable for the British trade, and that the ocean freight would be about \$15 each. Now when a purchaser comes here, he finds all, or nearly all, space contracted for, and the ocean rate is \$22.50 or \$25. In view of the fact that the Department has been urging farmers during the winter to have cattle ready for the market, had the Department any knowledge that a condition such as exists might occur?"

The Minister of Agriculture, Mr. MOTHERWELL, replied:—"My Deputy is preparing a statement for the press that covers the whole question; it gives the sailings of all the steamships for the next four weeks from Montreal and St. John and shows that there will be a shortage of space for the first two weeks in May, that on the third week space will be equal to the demand, and that on the fourth week it will be greater than the demand. At present the space available

is less than the demand. In a general way we had some information with regard to the number of cattle that would be shipped, but it was very difficult to get any exact figures. With the information furnished to us we have kept the shippers in Montreal acquainted with the requirements of this movement. That is all I can say in a verbal statement."

MR. FORKE: "Is the minister aware of the fact that, by the end of May, the proper time for the shipment of this class of cattle is nearly past and space will be of little benefit to the shippers after that date?"

Mr. MOTHERWELL: "Does my hon. friend think we should carry shipping space in our vest pocket ready for immediate requirements? There were two schools of thought apparent in Canada in connection with cattle shipments to Great Britain after the removal of the embargo: One was to deprecate the removal, and to point out that there would be nothing much going over anyhow; the other was to exaggerate the movement. Between the two it was pretty difficult for us to size up the situation. We kept the cattlemen fully supplied with information we gathered in regard to the situation. You cannot restore a trade that has been suspended for 30 years and expect to find everything ready for its resumption without some disturbance. Therefore, it is quite natural that there should be a shortage of space for a brief period, but, as I have already indicated, in a few weeks there will be more than sufficient accommodation to meet the demand."

Bay Line Steamships Ltd. Vessels.

The 10 steamships which interests allied with the Ogilvie Flour Mills Co., Montreal, bought from the French Government, through the Anderson Co. of Canada, recently, as mentioned in a previous issue, are each owned by a separate company bearing the same name as the ship, and they will be operated by Bay Line Steamships Ltd., of which Capt. H. N. McMaster is General Manager, J. D. Colvin Assistant Manager and R. W. Shepherd, chief clerk, Montreal. In addition to the 10 ships bought from the French Government, the Webster Steamship Co.'s three steamships, Eric W., Richard W., and Stuart W., have been acquired, and have been renamed in accordance with the company's practice, and are also separately owned in the same way as the others. Following is a list of the ships, with such details as are available:—

Ashbay, formerly Tourneur, built at St. Nazaire, France, in 1919, of steel; length 216.5 ft., breadth 34.1 ft., depth 15.5 ft.; tonnage 1,240 gross, 570 net; equipped with 4-cylinder engines, 16, 16, 30 and 30 in. diar. by 19 in. stroke, driving twin screws.

Beechbay, formerly Riveur, built at St. Nazaire, France, in 1919; length 216.4 ft., breadth 34.1 ft., depth 15.6 ft.; tonnage, 1,129 gross, 627 net; equipped with 4-cylinder engines, 16, 16, 30 and 30 in. diar. by 19 in. stroke, 47 n.h.p.

Birchbay, formerly Eric W. and Harry E. Packer, built at Cleveland, Ohio, in 1882; length 224.7 ft., breadth 35.4 ft., depth 17.1 ft.; tonnage, 1,183 gross, 810 net; equipped with fore and aft compound engines, 26 and 48 in. diar. by 42 in. stroke, 550 i.h.p.; M. Cossette, master; D. Vezina, chief engineer.

Cedarbay, formerly Vernon.

Elmbay, formerly Nantes, built at Alloa, Scotland, in 1917, and owned formerly by La Cie. des Chemins de Fer Paris-Orleans Societe Maritime aux Transports, Nantes, France; length 305.3 ft., breadth 42.7 ft., depth 21.5 ft.; tonnage, 2,510 gross, 550 net; equipped with triple expansion engines, 21, 34 and 56 in. diar. by 36 in. stroke, 226 n.h.p.

Maplebay, formerly Sotteville.

Oakbay, formerly Marineur.

Palmabay, formerly Richard W., and Pueblo, built at Milwaukee, Wis., in 1891, and rebuilt there in 1913; length 228 ft., breadth 36¼ ft., depth 19 ft.; equipped with fore and aft compound engines, 23 and 46 in. diar. by 42 in. stroke, 500 i.h.p.; tonnage, 1,493 gross, 905 net; J. Toupin, master; P. Brunelle, chief engineer.

Pinebay, formerly Rouvray.

Poplarbay, formerly Dressard.

Sprucebay, formerly Sottier.

Willowbay, formerly L'Oissel.

Yewbay, formerly Stuart W. and Collinge, built at Cleveland, Ohio, in 1881; length 251 ft., breadth 38 ft., depth 21¼ ft.; equipped with fore and aft compound engines, 21 and 44 in. diar. by 48 in. stroke, 700 i.h.p.; tonnage, 1,601 gross, 1,280 net; E. Tremblay, master; A. Gagne, chief engineer.

The following captains and chief engineers have been engaged for the 10 steamships, acquired from France, but at the time of writing had not been allocated to their respective ships:—Captains, E. Legault, C. Martin, L. Marchand, E. A. Laundry, J. Cochrane, J. Mullin, G. Duguay, C. H. Casselman, J. R. Montgomery and R. Houde; chief engineers, G. Verrier, H. Fugere, S. Gruzelier, B. Lappin, J. B. Anderson, J. H. Bennett, J. B. McLaren, L. Black, A. H. Ashton and H. Johnston:

Increased Elevator Capacity at Montreal.—A press report states that a Dominion order in council has been passed approving the erection of a grain elevator with an initial capacity of 2,500,000 bush. on the Tarte pier, by the Montreal Harbor Commissioners; that the elevator is being designed with an ultimate capacity of 10,000,000 bush.; that the plans provide for 4 travelling marine towers, for unloading from lake ships, and 4 unloading points for railway cars; that 5 berths will be provided for loading ocean ships, each berth having facilities for loading 30,000 bush. an hour, and that grain will be received from 24 cars at the rate of 48,000 bush. an hour, from 4 tracks, and from lake ships at the rate of 60,000 bush. an hour. It is stated that plans are under consideration for increasing the capacity of the G.T.R. elevator at Windmill Point, which is being taken over by the commissioners, to 1,125,000 bush.

Lumber Importations for Welland Canal.—E. J. Garland, Bow River, Alta., who had evidently been loaded up with wrong information, asked in the House of Commons recently: "Did the Montreal Harbor Board order 5,000,000 ft. of lumber, from the United States, during 1922 for use on construction work in connection with the Welland Canal, and if so, why was not this lumber ordered from British Columbia?" The Minister of Marine, Mr. Lapointe, answered "No," and the acting Minister of Railways, Mr. Graham, also said "No," adding, "No lumber for use on construction work in connection with the Welland Canal was purchased by the Montreal Harbor Board."

Enquiry Into Alleged Combine Among Great Lakes Steamship Owners.

At the conclusion of the Toronto sittings, March 23, the commission, consisting of S. J. McLean, Assistant Chief Commissioner, Board of Railway Commissioners, chairman; Brig.-Gen. T. L. Tremblay, and Levi Thomson, adjourned to Ottawa, where sittings were resumed, to hear arguments of counsel representing the various parties concerned. H. J. Symington, counsel for the commission, outlined the importance of transportation in the economic life of the country, and pointed out that as the evidence was only given under compulsion of a subpoena, it was of high value. He submitted that the ten charges made by the Government for investigation, had been practically admitted, except that the rates fixed were high and unjustifiable. He contended that it was shown that a combine existed, as meetings were held to establish rates, either on account of then existing conditions, or on account of U.S. railway rates, either reason being sufficient to establish the existence of a combine. The part played by shipping brokers was also reviewed, both concerning the chartering of space and the alleged compulsory insurance. The Standard Shipping Co.'s position was especially emphasized, counsel stating that it could grant space, or refuse it, divert cargo to a particular port, hold it for a shipper, and create congestion, though he would not say that this had been done; in fact, he held that the company had all the machinery necessary for a combine. He pointed out that remedial measures rested with the commission, and suggested for consideration, whether brokers should be permitted to participate in cargo or alternate insurance, whether steamship companies should have one agent in Winnipeg, so that chartering could be done directly between the shipper and the carrier, and the advisability of vesting in the Governor in council the power to suspend the coasting laws, with the view of bringing about lower rates.

Aime Geoffrion, K.C., for Canada Steamship Lines Ltd., admitted that there was an agreement to fix grain freight rates between May and Sept. 1922, but held that this was merely temporary, from week to week, or day to day, and ended in September. There was no intention, in such agreement, of creating a monopoly, and the parties to it were keen competitors. He claimed that there was no prejudice to the shippers from the rate agreement, and as proof of this, he mentioned that the Maple Leaf Milling Co.'s complaint was raised in the autumn, when there was no rate agreement. G. A. Towers, K.C., Britton Osler, K.C., and Isaac Pitblado, K.C., argued on behalf of Canada Steamship Lines Ltd., Mathews Steamship Co., and Standard Shipping Co., respectively, more or less along the same lines, with special emphasis on the points in which their clients were more immediately concerned, according to the evidence. For the Standard Shipping Co., it was argued that the exclusive contract with Canada Steamship Lines was in the interest of both shipper and steamship owner, and that the remuneration of the broker, by a commission on insurance, was the only practicable method of paying him, and that brokers had, during the war, given evidence of their willingness to accept another method of payment, but the

alternative broke down. By allowing a fifth of a cent a bushel as remuneration for the ship broker, the total saving possible by the abolition of the method of payment by commission on insurance, was estimated, on all shipments of grain through Canadian channels, to amount to \$30,000 in 1922, or 1c. on every 37 bushel. G. A. Towers, K.C., representing Canada Steamship Lines, suggested that agreements between steamship companies, as to rates, be filed with the Board of Railway Commissioners, or some similar body, instead of providing for a rate control by a commission, as had been suggested by F. W. Grant, representing the Great Lakes Transportation Co.

Arguments were closed April 12, and the sittings were adjourned for the commission's consideration of its report.

Shortage in Grain Shipments to England.

G. G. Coote, Macleod, Alta., said in the House of Commons recently:—"I wish to draw the Government's attention to a report which has appeared in the press to the effect that complaints have been made in England, by importers of grain shipped from Montreal, that the shipments were short in weight, and that a commission is likely to be appointed by the Government here to enquire into this matter, and to ask the Government whether they have received this complaint, and if so, will a commissioner be appointed to conduct an enquiry?"

The Minister of Marine, Mr. Lapointe, replied:—"The Department's attention was called, in December last, to a complaint made by the Liverpool Corn Trade Association directors respecting a shortage of grain shipped from Montreal. The matter was taken up with the Montreal Harbor Commission, and an officer of the Department was entrusted with the task of making an investigation. We are convinced that if there is any shortage, no blame can be laid on the port of Montreal. We sent the report of the investigation to the High Commissioner of Canada in London, who transmitted it to the Liverpool Corn Trade Association. The latter is not quite satisfied because that investigation was made by a Government Department. They want a more impartial investigation, so to speak, and that is what the High Commissioner has stated in a letter written to the Department. We have answered that we regret that this investigation has not satisfied them; but as the matter is very important, we are going to see that another is made under the Inquiries Act. I am considering this question in conjunction with the Minister of Trade and Commerce. Let me add that the Montreal harbor commissioners invite the investigation; they will be only too pleased that it should be made, and, indeed, they were prepared to carry it out themselves. They contend that if anything is wrong, it is not on their end of the transportation process. An announcement will be made shortly."

The C.P.R.'s Oriental Silk Traffic.—The amount of raw silk imported into Canada and the U.S.A., from Yokohama, Japan, during the latter half of 1922, was 180,388 bales, of which C.P.R. steamships carried 40,154.

New Steamships for the Great Lakes.

The steamships Glenbuckie, Glencassie and Glengeldie were launched at Wallsend-upon-Tyne, Eng., by Swan, Hunter & Wigham Richardson Ltd., March 20, March 29 and April 3, respectively, and the s.s. Glenburnie at Glasgow, Scotland, April 6, for the Playfair interests. They have the following dimensions: length b.p. 252 ft., breadth 42½ ft., depth moulded 20½ ft. They are built to the highest class of the British Corporation Registry, and have raised quarter deck 100 ft. long by 4 ft. deep, and fore-castle 35½ ft. long. Water ballast will be carried in the fore-peak and in the double bottom fore and aft. There will be 7 cargo hatches, electric lighting throughout, and steam heating in all living accommodation. The engines, of the inverted marine triple expansion type, are placed at the after end, and supplied with steam by single-ended boilers at 180 lb. These ships are the first three of an order for 10 placed by the Playfair interests, details of which were given in Canadian Railway and Marine World for February, page 91.

The Eastern Steamship Co.'s s.s. Robert W. Pomeroy, the launching of which, by Earle's Shipbuilding & Engineering Co., Hull, Eng., was announced in our last issue, loaded coal at Swansea, Wales, in the early part of April, and is expected to arrive at Montreal about May 1. The s.s. Edwin T. Douglass was launched by Napier & Miller Co., Glasgow, Scotland, April 7, and was expected to sail for Montreal about the middle of the month. The construction of the remaining 8 ships is proceeding satisfactorily, and all are expected to arrive at Montreal during May. The names of the ships, and the plants at which they are being built, are as follows:—Edwin T. Douglass, Frank B. Baird, Napier & Miller Co., Glasgow, Scotland; William H. Daniels, Albert C. Field, Furness Shipbuilding Co., Haverton-on-Tees, Eng.; Nisbet Grammer, Watkins F. Nisbet, Cammell, Laird & Co., Birkenhead, Eng.; Judge Hart, Norman P. Clement, J. Samuel White & Co., Cowes, Isle of Wight, Eng.; Robert W. Pomeroy, John J. Rammacher, Earle's Shipbuilding & Engineering Co., Hull, Eng.

Keystone Transports Ltd. s.s. Keybar was launched by Smith's Dock Co., South Bank, Eng., at the end of March. She is classed to Lloyd's register and has the following dimensions: length 250 ft., breadth 42½ ft., depth 19¼ ft.; d.w. capacity 2,300 tons, on Welland Canal draft. She is equipped with triple expansion engines, with cylinders 16, 26 and 44 in. diam. by 33 in. stroke, and supplied with steam by two boilers.

Hudson Bay Trip.—The C.P.R. s.s. Montreal has been chartered to the Hudson Bay Tourist Syndicate, Winnipeg, of which J. L. Thomas is Secretary, to convey a party of about 350 persons from Canadian and U.S. points to Hudson Bay, sailing from Montreal Aug. 1, calling at St. John's, Nfld.; Indian Harbor, Labrador; and Port Nelson and Fort Churchill, Hudson Bay. The trip will last 30 days.

Naval Changes at Esquimalt, B.C.—Lieut. C. T. Beard, naval chief of the Esquimalt dockyard, has been promoted to Lieut.-Commander. Lieut. A. R. Pressey, of H.M.C.S. Patrician, has been transferred to H.M.C.S. Naden. Lieut. V. S. Godfrey has been appointed to H.M.C.S. Patrician.

Ocean, Coast, Lake and River Steamship Officers for 1923.

The following appointments made by Canadian navigation companies for their steamships and tugs, have been reported to Canadian Railway and Marine World, in addition to those mentioned in our last issue. The first column shows the names of the ships, the second those of the captains, and the third those of the chief engineers.

Aube	Aube Steamship Co., Montreal.	E. St. Germain
Joyland	J. B. Gamache	J. S. Adam
Canada Atlantic Transit Co., Toronto.		
Arthur Orr	John Simons	D. E. Mance
Kearsarge	H. Jaenke	J. W. Greiner
Chicago Tribune Transportation Co., Montreal.		
Chicago Tribune	R. V. Norris	Emery Scott
New York News	R. J. Wilson	L. Vipond
Canadian Towing & Wrecking Co., Port Arthur, Ont.		
A. F. Bowman	A. McDonald	J. Williams
James Whalen	E. J. Cadotte	W. Faloona
Charlottetown Steamship Co., Charlottetown, P.E.I.		
Harland	J. P. McLaine	G. C. Gillis
Globe Transportation Co., Montreal.		
Pabjune	H. J. Bryan	J. M. Clark
Imperial Oil Limited, Toronto.		
Albertolite	D. G. Williams	J. W. Roche
Calgarolite	J. Colvin	A. McArthur
Imperial	S. S. Foote	D. J. Dow
Imperial	H. C. Mims	S. E. Brisbin
Locolite	R. Laing	H. R. Welch
Mina Brea	F. A. Germain	A. Vick
Montrolite	P. St. John	A. R. Fleming
Royalite	C. R. Dyon	F. Pringle
Talarolite	A. Geddes	E. W. Sparling
Trontolite	A. G. Cameron	W. Whetstone
Vancolite	W. R. Smeltzer	N. B. Gebbie
Victolite	C. R. Treweek	L. Hartie
Interlake Navigation Co., Montreal.		
Metcalfe	L. Patenaude	E. Reid
Saskatoon	W. Hawman	J. Wilson
Job Bros., St. John's, Nfld.		
Neptune	— Joyce	T. Crossman
Thetis	— Coward	R. Pike
Lachine Ferry Co., Lachine, Que.		
Fort Rolland	A. Montpetit	B. Sauvageau
Sault St. Louis	J. B. Couillard	T. Fugere
North Bay Steamship Co., Port Hood, N.S.		
Kinburn	C. Bourgeois	P. Glavin
Northern Fish Co., Selkirk, Man.		
Wolverine	A. Vance	John Seaman
Ontario Car Ferry Co., Toronto.		
Ontario No. 1	C. E. Redfearn	D. L. Smyth
Ontario No. 2	F. D. Forrest	J. A. Nicoll
Ottawa Transportation Co., Ottawa, Ont.		
Dolphin	Z. Lavigne	D. Mounville
Hall	Z. C. Barclay	Jos. Legault
Ottawa	A. Mallette	N. Lavigne
Scotsman	T. Francoeur	V. Lavigne
River Lievre Navigation Co., Buckingham, Que.		
George Bothwell G. N. Bothwell		George Bothwell
Sincennes-McNaughton Line Ltd., Montreal.		
Andree Dupre	L. Lemay	E. Lavalee
C. W. Chamberlain A. Descheneaux		A. Beaulieu
Conqueror	Z. Cadieux	A. Robidoux
Edward Alfred	E. Houde	A. Belliveau
Emma L.	J. Millette	R. Cournoyer
Ethel	E. Blais	J. Pelouquin
Fredmac	J. Bibeau	P. Cournoyer
Gerald Morgan	A. Bonin	L. Lussier
Hudson	N. Mongeau	A. E. Croteau
Jeanette R.	W. Bertrand	A. Pelouquin
John Pratt	Jas. Cournoyer	G. Mongeau
Macsin	E. Labelle	A. Baribeau
Macsinco	Jos. Mongeau	F. Rousseau
Mathilda	U. Latraverse	E. Croteau
Muscallonge	Z. Legault	A. Labissionniere
Myra	F. Houde	J. Bernard
Rosalie L.	Z. Bibeau	E. Mongeau
Sinmac	T. Bibeau	F. Thuot
Sinmaco	D. Mongeau	J. Laviolette
Virginia	G. Mongeau	D. Lemay
J. F. Sowards, Kingston, Ont.		
Brantford	John Doyle	J. G. Lamoreaux
Jeska	M. Shaw	W. McCabe
Shanly	J. Sowards	W. McCabe
John Tackaberry, Lionshead, Ont.		
Bon Ami	D. Pruder	C. Hamby
Henry Pedwell	H. Barrett	G. Webster
Rob G. Weddell, Trenton, Ont.		
M. Sicken	B. Bowen	W. B. Clarke
Western Transport Co., Nanaimo, B.C.		
We Two	D. Martin	D. D. Mackie
Windor & Pelee Island Steamship Co., Pelee Island, Ont.		
Pelee	J. N. Sheats	J. R. Ferguson

North American Steamship Co. Ltd. and South American Steamship Co. Ltd. have been granted supplementary letters patent, decreasing the capital stock of each company from \$750,000 to \$668,000, in each case, by the cancellation of 820 shares of \$100 par value each.

Ships Added to and Deducted from the Canadian Register During January and February, 1923.

Added.	Steam.— —Tonnage—			Sailing.— —Tonnage—		
	No.	Gross	Net	No.	Gross	Net
Built in British Possessions.....	8	320	128	12	1,779	1,689
Registered anew.....	1	33	32	.....	.....	.....
Other ships.....	1	2,332	1,512	1	13	13
Totals.....	10	2,685	1,672	13	1,792	1,702
Deducted.						
Wrecked or otherwise lost.....	9	566	364	9	1,389	1,172
Broken up or unfit for use.....	4	2,346	1,833	3	119	116
Sold to foreigners.....	1	133	70	.....	.....	.....
Transferred to British Possessions.....	2	6,647	4,169	1	508	461
Totals.....	16	9,692	6,436	13	2,016	1,749

Canada Steamship Lines Ltd. was defendant in an action at Quebec, Que., recently, brought by the Corporation des Obligations Municipales Ltée., Quebec, for \$101,000, in connection with the placing of Canada Steamship Lines' bonds for about \$3,000,000 last year. The plaintiff claimed that it was given exclusive privilege in handling an issue of \$3,609,200 bonds, which were to be disposed of by June 1, 1922. In April of that year it was notified that the company had decided not to proceed with the sale under the conditions of the agreement, and plaintiff claimed that in the meantime the financing had been done in New York. At that time, some \$300,000 had been disposed of, and plaintiff anticipated no difficulty in carrying out the agreement. It was claimed that Canada Steamship Lines was to receive 95 for the bonds, 5% being for handling the issue, and in addition plaintiff was to receive \$10,000. Evidence for the defendant showed that there were other agreements apart from those mentioned by plaintiff, for which, the company had been quite satisfied to accept \$6,000 in settlement. Further time was allowed plaintiff to enter pleas and for defendant to answer, and it is not expected that judgment will be delivered until some time in April.

Tax on Immigrants.—Quebec Harbor Commission proposes to impose a tax of \$1 on adults and 50c. on children, landing at the port. It is stated that the object is to help defray growing expenditures, that the imposition of such a tax is following the example of other ports in different parts of the world, and will have no effect on intending immigrants. It is claimed that the charge may act as a discrimination against the port, but it is believed that such a small tax will have no appreciable effect. A bylaw putting the tax into force has not at the time of writing, April 17, been approved by the Dominion Government.

Coal Carrying for Canadian National Rys.—Senator Bennett enquired in the Senate on April 17:—"What contracts had been let, if any, for carriage of coal by water for Canadian National Rys.? If any contracts have been let, to whom, and the rates agreed to be paid per ton for carriage of coal?" Senator Dandurand replied: "The Canadian National Rys. have no contracts at present for carriage of coal by water."

Loss of Italian Steamships.—The Italian s.s. Giulia, which was abandoned at sea about March 20, and left derelict, has been sunk by the U.S. coastguard cutter Seneca, as a menace to navigation. She is the fourth Italian steamship to have been lost at sea recently under similar circumstances, the others being the Montegrappa, Montello and Montenesio. Three of the four were loaded with grain.

Toronto Harbor Commission Membership.—As stated in Canadian Railway and Marine World for April, R. S. Gourlay, who was appointed several years ago by the Dominion Government as one of the commissioners, on the Toronto Board of Trade's recommendation, has been anxious for some time to retire, and wrote his resignation to the Chairman of the Commission, who forwarded it to the Board of Trade, the council of which passed a resolution unanimously recently, saying that Mr. Gourlay had filled the position to the Board's satisfaction; extending the Board's thanks to him; recording the council's utmost confidence in his ability and integrity, and urging him to reconsider his decision, withdraw his resignation in the interests of the harbor improvement work, and continue to serve, as a public spirited citizen, in the carrying on of the undertaking. Mr. Gourlay has acceded to the request.

The World's Shipbuilding.—Lloyd's report on shipbuilding for the first quarter of 1923, shows that 2,860,072 tons were under construction throughout the world on April 1, of which 1,492,138 tons, or 52.2%, were in Great Britain and Ireland; 173,762 tons, or 6.1%, in the U.S., and 1,194,172 tons, or 42.7%, in other countries. There was a slight increase in tonnage under construction in Great Britain and the U.S., over the previous quarter, but a decrease in the world's total, of about 100,000 tons. Germany had 343,027 tons under construction on April 1, or 12% of the world's total, a decrease of about 70,000 tons from the previous quarter.

Lake Superior Navigation Safeguards.—The Minister of Marine stated in the House of Commons recently, in answer to an enquiry, that the C.G.S. Lambton was lost last spring, with all on board, while attempting to place the lightkeepers in their stations on the north shore of Lake Superior for the season's operations. The tug Reliance was not wrecked last autumn while attempting to remove these lightkeepers from their stations, at the close of the season's operations. Resolutions had been received from public bodies at Sault Ste. Marie, recommending certain safeguards to navigation on Lake Superior, and were receiving consideration.

Closing Date for U.S. Locks at Sault Ste. Marie.—Under U.S. War Department authority, the U.S. locks in the Sault Ste. Marie canals will be closed to shipping for the season on Dec. 14 in each year, at 6 p.m. eastern standard time. Thereafter, dismantling for repair purposes will be begun immediately and no further lockages will be possible. Owners and masters are warned that final trips each year, between upper and lower lake ports, must be so timed that their ships will reach the locks prior to the limiting date and hour specified.

Proposed Canadian Customs Officer at New York.

L. J. Ladner, Vancouver South, said in the House of Commons recently:—"A dispatch has come from British Columbia dealing with the question of a customs officer at New York. It quotes Mr. Oliver, the Premier of British Columbia, as saying that 'when he drew the attention of Premier King and the Minister of Finance, to the fact that duty was being collected on goods going from eastern Canada to British Columbia, they were astounded. The existing customs regulations laid it down that Canadian goods trans-shipped in a foreign port, unless under supervision of a Canadian customs officer, had to pay duty on entry into Canada. Yet, when British Columbia asked for the establishment in New York of a customs officer, the application was refused.' I want to ask if, in fact, the Government have refused the application for a customs officer at New York, because I should like to say, this is a question in which public bodies, boards of trade and so on, at the coast, are greatly interested, and I understood the Government had the matter still under consideration, and perhaps favorable consideration. This is a statement by the Premier of British Columbia."

The Minister of Customs, Mr. Bureau, replied:—"An application has been made to place a customs officer at New York, to look after the traffic that goes via the ocean and the Panama Canal. This matter has been under the consideration of the Department, and while the Department has not decided definitely, it feels inclined to refuse the application, because this would divert traffic towards the United States, and all the Canada railways would get out of it would be the haul from the point of departure to the boundary, the whole of the railway haul to the sea and the whole of the ocean freight would go to the United States."

A Vancouver press dispatch of April 18 stated that Gosse-Millerd Packing Co. there had received a telegram from the Minister of Customs, at Ottawa, as follows:—"Under present regulations and conditions, canned salmon shipped from British Columbia to Halifax via New York and Panama Canal, would not be admitted to Halifax without payment of duty."

Public Works Marine Contracts.—The Dominion Public Works Department has awarded contracts as follows:—Feb. 6, construction of shed and searchlight platform in Naval barracks, Esquimalt, B.C., to Williams, Trerise & Williams, Victoria, B.C., for \$6,480; Feb. 23, docking, renewals, repairs, painting, etc., to dredge P.W.D. 117, to Toronto Drydock Co., Toronto, for \$10,675; March 5, construction of complete hopper dump scow, 135 cub. yd. capacity, to be known as P.W.D. No. 311, to be completed and launched in the west arm of Kootenay Lake, near Nelson, B.C., to D. C. Fraser, Nelson, B.C., for \$4,892.

Burrard Elevator Co. Ltd. has been incorporated under the Dominion Companies Act, with \$500,000 authorized capital and office at Vancouver, B.C., to own and operate grain elevators in Saskatchewan, Alberta or British Columbia, also ships and rolling stock of all kinds. The incorporators are: A. A. Gray, North Vancouver, B.C., W. E. Brewster, T. H. Roedde, A. Bull, and R. H. Tupper, Vancouver, B.C.

Welland Ship Canal Construction.

T. H. Thompson, Hastings East, Ont., asked the following questions in the House of Commons recently, the answers being given by the acting Minister of Railways and Canals, Mr. Graham:

Q. "Have all the sections of the Welland Ship Canal been placed under contract?" A. "No."

Q. "During the fiscal year 1922-3, have the contractors operated their respective contracts at a rate that will ensure the completion of the project within the various contracts' stipulations? If not, why not?" A. "Yes; contractors made such progress as will permit them to complete their contracts within times stipulated in their respective contracts."

Q. "Has the engineer in charge a pre-arranged schedule of operation for the contractors? If so, why does he not compel the contractors to fulfil it?" A. "Engineers' schedules are limited in their application by the terms of contracts, which terms contractors are compelled to fulfil."

Q. "What will the interest charges be on the Welland Ship Canal on borrowed capital for the ensuing year?" A. "The amounts expended by the Dominion in the construction of the canal were not provided by specific borrowing and no interest has been charged."

Q. "Why is the work not operated more vigorously, and why should the Government pay unnecessary interest on uncompleted work?" A. "The vigor of operations is determined by consideration of all factors affecting ultimate maximum economy. Undue expedition in the conduct of such construction work would result in losses, from inefficiency of operations, greatly in excess of the saving effected on interest account."

Q. "How many men were employed on each of the contracts during January?" A. "Daily average for January, 1923: sections 1 and 2, 284; sections 3 and 4, 336; section 5, 154; construction railway, 72, not allocated between sections 1 and 2 and 3 and 4."

Lake Freight Rates.—Cleveland, Ohio, press dispatch, April 20:—Bids of 5½c. on grain for opening shipment from the head of Lake Superior to Buffalo did not bring out much tonnage today, and only two charters were reported at the advance. Grain is being offered at Lake Michigan ports. Some of the big carriers that are at this end of the route will go light for ore at the start, and at the rate that coal is coming in, there will be a steady increase in stocks.

Lists of Lights and Fog Signals have been issued by the Marine Department, Ottawa, as follows:—Atlantic Coast, including Gulf of St. Lawrence, to head of ocean navigation; Inland Waters, west of Montreal and east of British Columbia; Pacific Coast and British Columbia Rivers and Lakes.

Bay Line Steamships Ltd.—The 10 steamships, which interests allied with Ogilvie Flour Mills Co., Montreal, bought from the French Government recently, through the Anderson Company of Canada, as mentioned in previous issues, will be renamed Ashbay, Beechbay, Cedarbay, Elmbay, Maplebay, Oakbay, Pinebay, Poplarbay, Sprucebay and Willowbay, and will each be owned by a separate company, and operated by Bay Line Steamships Ltd. Capt. H. N. McMaster is General Manager, and J. D. Calvin, Assistant Manager, Montreal.

Prince Rupert Drydock.

L. J. Ladner, Vancouver South, asked the following questions in the House of Commons recently, the answers being given by the acting Minister of Railways, Mr. Graham:—

Q. "What is the tonnage capacity of the Grand Trunk Pacific Ry.'s or the Canadian National Rys., drydock at Prince Rupert, B.C., for ships?" A. "20,000 tons."

Q. "What is the total investment in the drydock?" A. "\$2,940,000."

Q. "How many main sections comprise the complete drydock?" A. "Three."

Q. "How many of such sections are used, and what class of ships, and how many of them, were repaired in the drydock during 1922, and up to March 31, 1923?" A. "All sections have been used from time to time, and all classes of ships up to 17,600 tons displacement. During 1922 the dockings totalled 182, and from Jan. 1, up to March 31, 1923, the total dockings were 37, mostly small ships."

Q. "What is the tonnage of the largest ship repaired in the drydock between June 1, 1922, and Feb. 28, 1923?" A. "8,500 d.w. tons."

Q. "Would the Government or the Canadian National Rys. be willing to move a portion of the drydock to Vancouver, under reasonable terms and conditions? Is the Government or the Canadian National Rys., or the Grand Trunk Pacific Ry., or whoever has the legal authority in that behalf, willing, under reasonable terms, to lease such sections of the drydock as are capable of being moved to Vancouver, in order to provide drydock facilities for ships entering and leaving Vancouver?" A. "So far as the Government is aware, the question of leasing any part of the Prince Rupert drydock has not been considered."

Ship Channel and Ship Building Estimates.

The estimates for the year ending March 31, 1924, submitted to the House of Commons recently, contain the following items, under Public Works, chargeable to capital, Marine Department:—

River St. Lawrence ship channel: maintenance and operating dredging fleet.	\$613,000
Maintenance and operating of Sorel shipyard	125,000
Construction of self-propelling hopper barge (revote)	54,800
	\$792,800

Newfoundland Seal Fishery.—A. E. MacEachren, Canadian Junior Trade Commissioner, writes:—"Only 8 steamships, the smallest number since the inception of the industry, are engaged in seal fishing off the Newfoundland coast this year. Last year the total catch of seals was 126,031, an increase of 24,579 over 1921. The seals taken are known as hair seal, and the skins are shipped principally to Scotland, where they are dressed into a fine quality of leather. Seal oil has a medicinal and edible value, and is also used as an illuminant in mines. Oil is extracted from the fat by a special process at factories in St. John's. A novel development this year in the prosecution of the seal fishery is the use of an aeroplane, which is carried on a platform built on one of the ships, for the purpose of endeavoring to more readily locate the main patch of seals."

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

Ships for Export.—We are officially advised that no ships were built in Canada during 1922, and exported without being registered.

Cholberg Shipyard Ltd., Victoria, B.C., will, it is reported, probably be taken over by W. H. Drewitt and associates, to build scows and small craft. The yard, which was operated originally by Cameron-Genoa Mills Shipbuilders, Ltd., and later by the Foundation Co., has been involved in litigation with the Dominion Government in connection with the arrangements for the building of four wooden sailing ships by Victoria (B.C.) Shipowners, Ltd., under special aid from the Government, and which company went into bankruptcy.

Collingwood Shipbuilding Co., Collingwood, Ont.—The annual meeting of shareholders was held at Collingwood, March 29. The directors who were re-elected, are as follows:—H. B. Smith, President; R. M. Wolvin, Vice President; J. S. Leitch, Vice President and Managing Director; S. H. Lindsay, Secretary, and S. Dymont, J. F. M. Stewart and W. H. Smith. At a subsequent directors' meeting, a fourth quarterly dividend of 1½%, making 5% for the year 1922, was declared, payable April 3.

Although the company had to draw on surplus to pay dividends, it is possibly in the strongest liquid position in its history, after a year of exceptional dullness in the shipbuilding trade generally. Cash alone exceeds current liabilities, being \$89,261 against \$87,963. Assets receivable total \$474,275, and stores, etc., \$322,783. Plant and equipment is placed at \$4,402,588, and the total of assets stands at \$5,206,373. On the liability side, in addition to the current total given above, are reserves of \$1,265,863, capital stock \$2,600,000, and profit and loss credit of \$558,443. The latter is down approximately \$100,000, comparing with \$657,158 in 1921. Dividends, however, amounting to \$97,500 were paid and depreciation allowance of \$251,405 made.

Davie Shipbuilding & Repairing Co., Lauzon, Que.—The s.s. Cairndhu, which was wrecked in the St. Lawrence River, between Quebec and Montreal, just before the close of the St. Lawrence navigation season in 1922, has been undergoing overhaul and repair at the Champlain drydock, and was expected to be ready for operation again by the end of April, when she was to proceed to Montreal to load cargo for the United Kingdom. The Quebec Salvage & Wrecking Co.'s wrecking and salvage steamship Lord Strathcona and schooner G.T.D. have been scraped, caulked, painted and generally overhauled. Canada Steamship Lines' s.s. Narragansett, which is being renamed Richelieu, and which has been remodelled and overhauled, was completed, ready for operation during April, and will run between Montreal and Saguenay ports. Among other changes made to her, is her conversion from a coal to an oil burner. The cost of the changes and repairs will approximate \$500,000. Other work carried out during the winter includes the overhauling of lightship 20; and the conversion of the s.s. Polana to an oil burner for the Dominion Government.

Dominion Shipbuilding & Repair Co., Toronto.—The further supplementary estimates for the year ended March 31, 1923, submitted in the House of Commons

recently, provide \$18,017.76 to pay the City of Toronto taxes on this company's shipyard, which was used by the Marine Department to complete two single screw cargo steamships under the shipbuilding programme.

Fraser, Brace Ltd., Three Rivers, Que.—It was expected that the s.s. John C. Howard, the fourth steamship built at this yard for the George Hall Coal & Shipping Corporation, Montreal, would be launched at the end of April or early in May. Her dimensions are: length b.p. 230 ft., beam 43½ ft., draft loaded 16½ ft.; d.w. tonnage 3,270. The propelling machinery consists of triple expansion engines, with cylinders 19, 32 and 56 in. diam., by 36 in. stroke, supplied with steam by 2 Scotch boilers, each 14 ft. 7 in. x 10 ft. 8 in., burning coal.

D. C. Fraser, Nelson, B.C., has received an order from the Dominion Public Works Department for a hopper dump scow, 135 cub. yd. capacity, to be known as P.W.D. No. 311, to be completed and launched in the west arm of Kootenay Lake, near Nelson, for \$4,892.

Halifax Shipyards Ltd., Halifax, N.S., did the following repair work during March:—Commercial Cable Co.'s s.s. J. W. Mackay, repairs, details of which were given in our March issue, undocked March 17; Canadian Government Merchant Marine s.s. Canadian Mariner, scraped and painted, hull and rudder repairs, sea connection opened up for examination, and electric welding, undocked March 23; Dominion Coal Co.'s s.s. Corunna, hull repairs, tail shaft drawn for examination, scraped and painted, sea valves opened, undocked April 2; La Morue Francaise et Secheries de Fecamp, St. Pierre, s.s. Pro Patria, docked for survey, hull and machinery repairs, drawing tail shaft for examination, new rudder stock, and overhauling steering chains, undocked April 2.

Midland Shipbuilding Co., Midland, Ont., did the following repair work during the winter:—Glen Steamships Ltd. steamships: Glengarnoch, old boilers removed and new ones installed, new smoke stack and smoke box, general engine repairs and fender strakes renewed; Glendochart, considerable repairs to port bow, fender strakes renewed, general engine repairs, and new electric wiring throughout; Glenealy, port bow repairs, fender strakes renewed, new smoke stack and new electric wiring throughout; Glendowan, port bow repairs, fenders renewed, general engine and boiler repairs and new electric wiring throughout; Glenarm, repairs to port center and starboard bow, new hawse pipe and general engine and boiler repairs; Glenfarn, general engine and boiler repairs. Great Lakes Transportation Co.'s steamships: Glenshee, port bow repairs; Glenbrae, repairs to starboard side aft, and to starboard bow, and general overhauling engines and boilers; Glenfinnan, new elevator installed and general overhaul engines and boilers; Glenmavis, port bow repairs and general overhaul engines and boilers; Glenorchy, repairs to fore-castle side and starboard side abreast of no. 10 hatch, and general boiler repairs; Glenlyon, repairs to port and starboard bow and general engine and boiler repairs; Glencairn, new pipe masts and repairs to port side aft; Glenisla, new bottoms in combustion chamber, new winch founda-

tions, and general repairs to engines and boilers; Glenclova, general engine and boiler repairs; Glenlivet, new bulkheads, general engine and boiler repairs. Algoma Central Steamship Line's steamships: Agawa, new smoke stack; W. C. Franz, general engine and boiler repairs. Canada Steamship Lines s.s. Midland Prince, repairs to port bow; Georgian Bay Lumber Co.'s steam tug Waubausene, new smoke stack.

The s.s. George E. Hartnell, which was bought from the Valley Camp Coal Co., Cleveland, Ohio, towards the end of 1922, for the Great Lakes Transportation Co., has been remodelled and refitted and will be ready for operation on the reopening of lake navigation. Her dimensions are: length 352 ft., breadth 42 ft., depth 27 ft. Complete new propelling machinery of the triple expansion type have been installed, with cylinders 19, 32 and 56 in. diam. by 36 in. stroke, 1,400 h.p., and supplied with steam by 2 new boilers, each 14 ft. 7 in. diam. by 10 ft. 8 in. long, at 185 lb., built at St. Catharines, Ont. The overhaul work below the water line was done by the Port Arthur Shipbuilding Co., after which the ship was moved to Midland, where the work was completed.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—The Royal Securities Corporation offered recently \$250,000 Western Dry Dock & Shipbuilding Co. 6% first mortgage serial gold bonds, redeemable at 103 and accrued interest on any interest date, at 60 days notice. The Port Arthur Shipbuilding Co. was incorporated in 1916 under the Ontario Companies Act, to take over the Western Dry Dock & Shipbuilding Co. and has authorized capitalization as follows:—\$1,000,000 Western Dry Dock & Shipbuilding Co. 6% first mortgage serial gold bonds, of which \$480,000 have been redeemed, leaving \$520,000 outstanding; \$1,000,000 7% cumulative preferred shares, of which \$428,000 have been redeemed, leaving \$572,000 outstanding; and \$1,500,000 common shares. The company owns and operates a drydock and shipbuilding and ship repairing plant at Port Arthur. The drydock is of concrete, with steel gates and high power pumping station, and is equipped with all essential modern appliances, including gantry crane, heavy shear legs, etc., and will accommodate ships up to 650 ft. long. The plant is located on about 90 acres of dock property, with 3,075 ft. of water frontage within Port Arthur harbor limits, and inside of the permanent government breakwater. The plant is also equipped for making pulp and paper machinery, heavy castings and forgings, boilers, and general engineering. It is located at the head of Canadian inland navigation at the lake terminals of the Canadian transcontinental railways, and the point of transshipment of the greater portion of western Canada's grain crops. The Dominion Government pays a subsidy of \$37,741.50 a year for 20 years, on the basis of 3% on \$1,258,050, the estimated cost of the dock plant. The company is still entitled to receive 10 of these annual payments, which will extend beyond the maturity of outstanding bonds, and each annual payment is greater than the amount of bond interest payable in any year. The balance sheet at June 30, 1922, showed fixed assets of \$1,948,687.99, after deducting depreciation of \$750,334.80, and is exclusive of goodwill, patents, trade

marks and investments. An appraisal made by the Canadian Appraisal Co. Jan. 1, 1922, valued the fixed assets at \$3,628,000. A balance sheet at Jan. 31, 1923, showed net current assets after deducting all current liabilities and including the proceeds of the present bond issue, of \$454,289.14; investments carried at \$125,080 not being included, nor were taxes payable by installments, amounting to \$179,534.99. The net earnings, after all charges, including bond interest, taxes, etc., for the 5 years 1918 to 1922, inclusive, averaged \$220,166.

Prince Rupert Drydock & Shipyard, Prince Rupert, B.C., did the following repair work during March:—Canadian Government Merchant Marine s.s. Canadian Skirmisher, 5,378 tons, docked, cleaned, painted and generally overhauled; Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George, 3,372 tons, annual overhaul; s.s. Prince John, 955 tons, docked, cleaned and painted, hull repairs and generally overhauled; s.s. Prince Rupert, 3,379 tons, docked, new tail shaft, and propeller repairs; car ferry barge, 445 tons, docked and extensive hull repairs; Dominion Government s.s. Bobolink, docked for hull repairs; also 21 fishing ships overhauled.

St. John Drydock & Shipbuilding Co., St. John, N.B., announces that its drydock and marine shipyard, at Courtenay Bay, will be ready for operation by Oct. 1. The drydock will be 1,150 ft. long, with 42 ft. draft over sill, and will be usable as one dock, or two separate ones, 650 and 500 ft. long, respectively. The marine slipway, which is being built of steel, will be capable of hauling out ships up to 1,800 tons. Both the drydock and marine slipway will be fully equipped for temporary and permanent repairs, of all kinds, to ships' hulls and machinery, the equipment including a large dock crane, locomotive cranes, and machine, plate, boiler, pattern and joiners' shops. The company will undertake towing and marine salvage work of all kinds, from both St. John and Quebec, with its tugs, Gopher, Margaret A. Hackett, J. H. Hackett, Florence and Katharine K.

Union Shipbuilding Co., Port Union, Nfld., launched four 60-ton schooners during 1922, and is planning to build about the same number during this year. H. A. Russell is Assistant Manager.

Vancouver Shipyards Ltd., Vancouver, B.C., is building a tugboat for Young & Gore, logging operators, at an approximate cost of \$50,000. Her dimensions are: length 85 ft., breadth 19 ft., draft 9.9 ft. She is equipped with a 4-cylinder, 4-cycle full Diesel engine of 200 h.p., working at 225 r.p.m., for a speed of about 10 m.p.h. She has a storage tank for about 5,000 gall. of fuel oil, estimated to drive her at full speed for 20 days without refuelling.

Victoria Machinery Depot Co., Victoria, B.C., did the following repair work during February and March:—C.P.R. s.s. Princess Patricia, 1,158 tons, docked, cleaned, painted, general repairs at stern, new stern frame, A frame, stern tail shafts and propellers, rudder, and engine and boiler repairs; new vertical boiler for C.P.R. motor-car ferry ship Motor Princess; Dominion Government s.s. Restless, docked and painted, hull, deck and engine repairs; s.s. Armentieres, docked and painted, hull, deck and engine repairs; Canadian Puget Sound Lumber Co.'s steam tug Olive M., boiler repairs; Consolidated Whaling Corporation's s.s. Gray, 707 tons, docked, cleaned and painted, new stem, and bottom repairs due to stranding; Genoa

Bay Lumber Co.'s steam tug Des Brisay, rudder repairs; A. O. Rusco's steam tug Nora, boiler repairs; Union Steamship Co. of British Columbia's s.s. Chilliwack, 557 tons, boiler and engine repairs; steam tug Chehalis, rudder repairs; scow C. J. V. Spratt, docked for general repairs.

Yarrows Ltd., Victoria, B.C., did the following repair work during March:—Canadian Government Merchant Marine s.s. Canadian Britisher, 5,370 tons, docked, cleaned and painted, repairs to rudder and steering gear, sea connections and engine room; s.s. Canadian Inventor, 5,497 tons, drydocked, cleaned and painted, and opened up for survey, extensive refit deck and engine room and auxiliaries, renewed zincs and uptakes and overhauled boilers, tail shaft drawn, rudder lifted and pintles and bushings overhauled; Canadian Pacific Ry. s.s. Princess Charlotte, 3,844 tons, docked, cleaned and painted, tail shaft drawn and engine room and propeller repairs; s.s. Princess Alice, 3,099 tons, topsides painted; s.s. Princess Victoria, 1,943 tons, repairs to condenser; Canadian National Rys. car ferry Canora, 2,383 tons, 3 new propeller blades fitted; Dominion Government s.s. Armentieres, canvas renewed; s.s. Lillooet, 574 tons, docked, cleaned and painted, extensive refit and overhaul; British Columbia Cement Co., s.s. Matsqui, docked, sheathing renewed underwater; s.s. Baja California, 1,649 tons, docked, cleaned and painted and boiler repairs; also several scows hauled out for repair. The C.P.R. motor-car ferry, for operation between Sidney, B.C., and Bellingham, Wash., was launched March 31, and named Motor Princess by Mrs. Norman Yarrow. The work on this boat was commenced early in 1923, so that progress has been rapid. The installation of the engines and auxiliaries was pushed ahead during April, so that delivery might be made ready for operation by May 15, according to contract.

Advances to Montreal Harbor Commission.—The Minister of Marine, Mr. Lapointe, stated in the House of Commons recently, in answer to J. H. Harris, York East, Ont., that the total amount of advances made by the Dominion Government to the Montreal Harbor Commission, by way of loan or otherwise, up to Feb. 22, 1923, was \$32,435,000. The total interest received from 1867 to Jan. 31, 1923, was \$12,419,053.60. The rate of interest is 3% on \$9,250,000; 3½% on \$17,235,000 and 5% on \$5,950,000. Advances having been made from the consolidated revenue fund, they are not, strictly speaking, applicable to particular borrowings. Of late, Government borrowings have been made at 5½% interest per year.

Montreal Harbor Masters.—H. Deslauriers, St. Mary, Montreal, asked in the House of Commons recently: "Are the Montreal harbor masters appointed by the Montreal Board of Trade paid by the Government, and if so, what are their salaries?" The Minister of Marine, Mr. Lapointe, replied: "The harbor masters for Montreal harbor are not appointed by the Board of Trade, or paid by the Government."

Dominion Stevedoring Corporation Ltd. has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital, and office at Montreal, to carry on a general wharfinger, stevedoring, shipowning and transportation business. The incorporators are: J. A. Major, L. J. Marchand, S. A. and G. Labrosse, Montreal.

Canadian Pacific Railway Ocean Steamship Services.

The s.s. Marvale is scheduled to sail from Montreal June 23, with a large party, on a historical and religious pilgrimage to France, Italy, Switzerland, Belgium and England.

The s.s. Montcalm, which sailed from St. John, N.B., April 6, arrived at Liverpool, Eng., April 14, completing the voyage in 7½ days at an average speed of 17 knots, which is considered an exceptional trip for a ship of this class. She arrived at Montreal April 28 and was the first of the C.P.R. steamships to arrive there this season.

Commencing April 10, Manila was omitted as a port of call, by the steamships Empress of Asia and Empress of Russia, they sailing direct from Shanghai to Hong Kong, taking two days for the trip, instead of six days as when going via Manila. It is announced that these ships will call at Honolulu on west-bound trips, commencing Nov. 29.

The C.P.R. steamship general passenger staff transferred its offices from the Dominion Express Building, St. James St., to the Windsor St. station, Montreal, April 14, where it now occupies offices above the Dominion Express Co.'s depot on Osborne St. The steamship booking office remains at 141 St. James Street, occupying the Dominion Express Building's ground floor.

The s.s. Montlaurier, which is scheduled to arrive at Quebec May 12, on her maiden trip, will be commanded by Capt. J. Turnbull, O.B.E., formerly of the s.s. Melita. He has served on several of the company's steamships, including the Montcalm, Mount Royal, Grampian, Metagama, Empress of Britain and Melita. During the war he was in charge of the Empress of Britain, which was requisitioned as a troop ship.

Before the last sailing of the s.s. Montrose from Liverpool, Eng., for St. John, N.B., recently, the company entertained about 50 of its female shipping agents, from different parts of the United Kingdom, on board the ship, to inspect the accommodation, etc., so as to be in a better position to advise prospective passengers as to the facilities offered. H. G. Dring, European Passenger Manager, London, presided over the gathering.

Commander A. J. Hosken, R.N.R., master of the s.s. Empress of Russia, has been awarded the French Marine Department's first class medal for the rescue of 6 Europeans and 60 Chinese, as well as the crew of the French ship Hsi Tien, which sank near Lammock, on the Chinese coast, April 8, 1922, when he was in command of the C.P.R. s.s. Monteaule. He had previously been presented with the silver medal of France, and the Royal Life Society medal.

Capt. E. Landy, formerly of the s.s. Bolingbroke, has been appointed to the s.s. Melita, vice Capt. J. Turnbull, O.B.E., transferred to the s.s. Montlaurier. He has served on the steamships Montfort, Lake Michigan, Lake Champlain, Lake Manitoba, Methven, Pretorian, Empress of Britain, Metagama, Monmouth and Bolingbroke. While in command of the s.s. Monmouth, during the war, he performed a conspicuous act of gallantry in taking his ship safely into a French port, where he was bound, after having been torpedoed and severely damaged by the Germans.

Atlantic and Pacific Oceans.

British Canadian Steamships' s.s. *City of Victoria*, owned in Vancouver, B.C., and bound from England to the Pacific coast, was reported to be on fire about 600 miles off the Irish coast, April 3, and making for the Azores.

The White Star Line's s.s. *Pittsburgh*, which arrived at Halifax, N.S., April 2, reported a peculiar experience during very heavy weather, March 30, when, as nearly as can be ascertained, she was caught between two very high waves, one on either bow, both of which broke with full force on deck, and wrecked the bridge and deck officers' quarters.

The Anchor-Donaldson Line's s.s. *Athenia*, completed by the Fairfield Shipbuilding & Engineering Co., Glasgow, Scotland, for the company's Glasgow-Canadian service, underwent her trials in the Clyde, March 27, maintaining a speed of 17 knots over the measured mile. Her dimensions are: length 540 ft., beam 66 ft., draft 27 ft. 8 ins. She is equipped with Brown-Curtis turbines, 8,700 shaft h.p., driving twin screws, with oil as fuel. With complete fuel supply, she can steam for 22 days at 15 knots without replenishing.

Maritime Provinces and Newfoundland.

The Dominion Government has approved of regulations for Sydney, N.S., pilotage district, and of the pilotage dues to be paid there.

Newfoundland's mercantile marine is reported as being rapidly depleted. It is said to consist of 70 foreign going ships, the previous total never having been less than 100. It is stated that the sailing ship will probably become obsolete as a fish carrier, its place being taken by foreign-owned steamships. As an explanation of the disappearance of the Newfoundland type of fishing ship, it is stated that very high insurance rates are asked on the hulls and cargoes, the insurance premium on cargoes on steamships being about $\frac{1}{2}\%$, against 8% for cargo in sailing ships and 16% on hulls.

The s.s. *Princess*, which, as stated in previous issues, was bought in New York by J. T. Burchell, President, North Shore Steamship Co., Sydney, N.S., is owned by him and J. A. Young of Sydney. She was built in New York, under special Lloyd's inspection, and was launched there under the British flag for a Bermuda party. She is built of steel and is equipped with cylinders 12, 20 and 32 in. diam. by 18 in. stroke, built in England, and supplied with steam by boilers at 250 lb. working pressure. The engines are being overhauled at Yarmouth, N.S., and certain changes are being made in the deck room and passenger accommodation to make her suitable for operation from Sydney, N.S., to Baddeck and Whycocomagh, by the New Bras d'Or Steamship Co. Her name is to be changed to *Nyanza*. She was built for the excursion business in Bermuda, but during the war was bought by the U.S. Government and used for transporting troops in New York harbor, and it is stated that at one time she carried as many as 1,800 on a single trip. During the summer of 1922, she was operated in the excursion passenger trade between New York and Rockaway Beach, and was certified to carry 650 passengers. Her dimensions are: length 113 ft., beam 30 ft., depth 12 ft.; tonnage, 251. The s.s. *Marion*,

owned by the Bras d'Or Steamship Co., and which was wrecked last year, was bought by J. T. Burchell, on the understanding that he was to take over the company's charter and goodwill, but as some difficulty has arisen in connection with the winding up of that company's affairs, it has been deemed advisable to obtain a new charter, under the name of New Bras d'Or Steamship Co. Ltd., which is being organized, with J. T. Burchell, President, and J. A. Young, Manager, these two being, respectively, President, and Manager and Secretary, Sydney Foundry & Machine Works Ltd., which owns and operates a marine railway drydock and ship repairing plant at Sydney, N.S.

Province of Quebec.

Repairs on the Lachine canal were reported to be practically completed April 23, and it was stated that traffic would be resumed shortly thereafter.

The old wooden Red Islet lightship, which has been lying at Quebec, Que., for some time, has been sold by the Marine Department, to Capt. J. Couette and Albert, Quebec, Que. Her dimensions are: length 102 ft., breadth 22 ft., depth 10.6 ft.; registered tonnage, 152.

A dispute is in progress between the cities of Quebec and Levis as to the terms of a new ferry contract for 15 years from May 1, 1925, for which tenders will be called for shortly. A tentative contract has been drawn up, which Levis representatives favor strongly.

The Quebec & Levis Ferry Co.'s s.s. *John S. Thom*, which was caught in the ice at the commencement of the winter, between Quebec and Montreal, has been refloated by cutting the ice all round her, and work proceeded during April on cutting a channel from mid stream to shore, so that she may be brought in out of danger of being crushed by floating ice.

Work was commenced on the addition to the Grand Trunk elevator at Windmill Point, Montreal, April 16, by the Montreal Harbor Commissioners. The addition will increase the capacity by 1,250,000 bush. and is expected to be ready for operation about Sept. 1. The present capacity is 2,150,000. The commissioners' new elevator at Tarte Pier, will be built by the commissioners' own forces, at an approximate cost of \$2,347,000. It will have a capacity of 2,000,000 bush. and is the first unit of a plant which is expected to have 14,000,000 bush. capacity, the largest single grain elevator plant in the world.

Ontario and the Great Lakes.

The Northern Navigation Co.'s s.s. *Hamonic* sailed from Sarnia during the last week of April, for Collingwood, where she docked for certain hull repairs before taking up her summer schedule.

The Niagara, St. Catharines & Toronto Navigation Co.'s s.s. *Port Dalhousie* reopened navigation on Lake Ontario, between Port Dalhousie and Toronto, March 29, when the master, Capt. F. J. Marogold, was presented with the harbor master's hat for bringing in the first ship of the season from an outside point.

The Western Reserve Navigation Co., Cleveland, Ohio, wrote the London, Ont., Chamber of Commerce, recently, that it will probably arrange for a steamship to call at Port Stanley every other day from about the middle of May until Dec.

1, and that, if conditions warrant, and sufficient business can be guaranteed, a second ship will probably be added.

The United States Lake Survey reports the mean stages of the Great Lakes in feet above mean sea level, for March, as follows:—Superior, 601.45; Michigan and Huron, 578.98; St. Clair, 573.62; Erie, 570.98; Ontario, 244.74. Compared with the average March levels for the past ten years, Superior was 0.29 ft. below; Michigan and Huron, 1.10 ft. below; Erie, 0.81 ft. below, and Ontario, 0.94 ft. below.

The motor tugboat *F. H. Anson*, which was built at Twin Falls, Ont., recently by Abitibi Power & Paper Co., for use on the Abitibi River, towing booms of pulpwood for its own mills, and which has been transferred to Abitibi Transportation & Navigation Co., has the following dimensions: length 75 ft., breadth 20.7 ft., depth 9.9 ft.; tonnage, 112 gross, 16 net. The propelling machinery consists of a 6-cylinder 350 h.p. direct reversible Winton-Diesel oil engine and an auxiliary 3-cylinder air compressor. It is stated that the boat can do the work formerly done by four smaller steam tugs. Her fuel capacity is equal to a 10 days supply of oil.

In connection with the visit of a deputation of Kingston business men to the Dominion Government, recently, urging the city's claims as a transshipment point for lake grain traffic, we are advised that plans with this object in view were arranged tentatively before the war, but that the Government is not at present committed to them. The facts are well understood and the Government is apparently concerned on only one point, viz., as to the length of time necessary for the work, in order that the harbor may be ready when the new Welland Ship Canal is opened for traffic. The object of the deputation was to obtain a specific promise that the work would be carried out according to the plans.

A deputation of Hamilton citizens waited on the Minister of Marine, at Ottawa, recently, about harbor dues. The deputation stated that if the harbor were kept free of dues, the city would be willing to continue its yearly grant of \$4,000. The Minister pointed out that the bylaw under which the commission proposed to collect charges, was passed in 1913, but had not been acted upon, because the commission had suspended it each year, and it appeared to be necessary either to suspend it again, or repeal it altogether, and make a new bylaw, which would be satisfactory to all parties. Consideration of the deputation's arguments was promised.

British Columbia and Pacific Coast.

The Dominion Public Works Department has given to Williams, Trerise & Williams, Victoria, B.C., a contract for the construction of a shed and searchlight platform in the Naval Barracks at Esquimalt, for \$6,480.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. *Prince John* resumed service on the Queen Charlotte Islands route, out of Prince Rupert, April 14. The s.s. *Prince Albert*, which arrived at Prince Rupert April 12, has been laid up.

The motor-car ferry *City of Angeles*, operated by the Victoria-Anacortes Ferry Co., will be placed in operation between Anacortes, Wash., and Sidney, B.C., about May 10. She is 138 ft. long, 34 ft. beam, and has capacity for 38 motor

cars. She will call at San Juan and Orcas Islands.

Bellingham, Wash., City Council is reported to have ordered the immediate starting of the work to provide a landing place for the C.P.R. motor-car ferry between Sidney, Vancouver Island and Bellingham, which will start running early in May. It is stated that about \$20,000 will be spent on repairing the approaches, and providing a 2-deck pontoon.

The German s.s. Hans Hemsoth, which arrived at Victoria, B.C., toward the end of March, was the first German merchant ship to enter the port since July 12, 1914. Indicative of the anomalous condition created by the fall of the value of the German mark, it is stated that the pay of the master of the ship, is equivalent to \$10 a month at the present rate of exchange, while several U.S. seamen working on the ship are receiving \$50 a month, U.S. currency.

The Union Steamship Co. of British Columbia's s.s. Cardena was launched at Glasgow, Scotland, March 23, and is expected to be completed and ready to sail for the British Columbia coast, by the end of May. She will voyage via the Panama Canal, and will be placed on the route from Vancouver to Ocean Falls, Swanson Bay and Prince Rupert, replacing the s.s. Chelohsin, which is to be placed on the logging route out of Vancouver. The s.s. Cardena is a modern combined passenger and freight steamship, 220 ft. long by 34 ft. beam, equipped for burning oil as fuel. There will be accommodation for about 100 passengers.

Wreck of Steamship Trader.

The following questions were asked in the House of Commons on April 12 by L. J. Ladner, Vancouver South, and answered by the Minister of Marine, Mr. Lapointe:—

Q. "Has the Government received a report with respect to the wreck of the s.s. Trader in March, on the rocks dumped off the end of the jetty, on the north arm of the Fraser River, B.C., built by the Government?" A. "Yes."

Q. "If so, was the wreck due to the Department's failure to provide a proper light at the end of the jetty, and is the ship a total loss?" A. "The ship was stranded 300 yards west of the jetty, at noon on March 16, during what the captain in charge described as a furious w.s.w. gale. Consequently the wreck was not due to the absence of a light."

Q. "Is it a fact that the jetty has been without any light for three months, or any other lesser period, and that there is no mark or communication at the end of the jetty to show the entrance to the channel to the north arm of the Fraser River?" A. "The edge of the channel is 400 ft. from the jetty. The Department has maintained, since 1905, range lights to mark this channel. The outer light was carried away on Jan. 21 last by the tug Gleeful, the report of which did not reach the Department until Jan. 31. Instructions to rebuild were wired Feb. 2."

Q. "Has the Government a report on the wrecking, or grounding, on or about March 15, of three tugs, with booms of logs, at a point on Sea Island about a mile east of the jetty?" A. "No."

Q. "Has the Government taken steps to provide a proper and sufficient light at the end of the jetty and to otherwise protect the entrance to the channel for navigation?" A. "Yes."

Mainly About Marine People.

J. Ernest Adams, who has been appointed Chief of Commissary, Northern Navigation Co., Sarnia, Ont., was born there May 9, 1882, and entered the company's service March 1, 1901, since when he has been, to Dec. 15, 1902, waiter, s.s. Monarch; March 1 to Sept. 1, 1903, head waiter, s.s. Hamonic; Sept. 1 to Dec. 15, 1903, steward, s.s. Majestic; March 1, 1904, to Dec. 15, 1905, assistant steward, s.s. Saronic; March 1 to Sept. 1, 1915, assistant steward, s.s. Hamonic; Sept. 1 to Dec. 15, 1915, chief steward, s.s. Huronic; 1916 to March 1, 1923, chief steward, s.s. Hamonic.

Joseph Boscowitz, who died at Victoria, B.C., recently, aged 88, was a native of Bavaria, and went to Esquimalt, B.C., from San Francisco, Cal., in 1862. He was interested in the fur trade, and took an active part in the transfer of Alaska from Russia to the U.S. He later formed the Victoria Sealing Co., operating several schooners in the sealing trade, and was afterwards interested in the Boscowitz Steamship Co., which was absorbed by the Union Steamship Co. of British Columbia.

W. E. Burke, heretofore General Traffic Manager, Canada Steamship Lines Ltd., Montreal, has been appointed Vice President, Century Coal Co., Ltd., which is owned by Canada Steamship Lines.

A. E. Cook, Assistant Manager, Elder, Dempster & Co., Montreal, died at Westmount, Que., April 14. He was born at Birkenhead, Eng., in 1870, and came to Montreal in 1891, when he entered Harling, Ronald & Co.'s service, which company was absorbed by Elder, Dempster & Co. in 1895. In 1899, on the acquisition of the Beaver Line by Elder, Dempster & Co., he was made Assistant Manager, and when the C.P.R. acquired the Beaver Line, he was appointed Export Freight Agent, C.P.R. In 1905, when Elder, Dempster & Co. inaugurated their Canada-Cuba-Mexico service, he resigned from C.P.R. service, and resumed his position as Assistant Manager, Elder, Dempster & Co.

Maurice FitzGerald, who has been appointed Special Representative, C.P.R., and Canadian Pacific Steamships Ltd., Yokohama, Japan, was born there, of British parents, June 7, 1879, and speaks Japanese fluently. He entered transportation service in Oct. 1894, as stenographer with Frazar & Co., then agents for the C.P.R. trans-Pacific Steamship Service, Kobe, Japan, and in Jan. 1896, was transferred to Yokohama, when the C.P.R. opened its own Japanese agency. He has served continuously in the C.P.R. steamship service, as stenographer, freight clerk, General Assistant, Assistant to Manager at Yokohama, Japan, and until his present appointment, Assistant to Oriental Manager, Hong Kong, China.

Sir George B. Hunter, of Swan, Hunter & Wigham Richardson, Ltd., shipbuilders, Wallsend-on-Tyne, Eng., made a short business visit to Canada recently.

Gordon K. McNab, who has been appointed port agent, Canadian Government Merchant Marine, St. John, N.B., was born at Montreal, June 8, 1896, and entered transportation service Dec. 1, 1913, since when he has been, to April 30, 1915, assistant surveyor, G.T.R. lines west of Detroit and St. Clair Rivers; Jan. 1, 1916, to April 30, 1917, clerk, City Freight Agent's Office, Canadian Northern Ry., Montreal; April 30, 1917, to May 5, 1919, on active service with Canadian Expeditionary Force; June 1

to Dec. 30, 1919, clerk, Manager's office, Canadian Government Merchant Marine, Montreal; Jan. 1, 1920, to Nov. 15, 1922, chief clerk, Manager's office, C.G.M.M., Montreal.

James Rankin, whose appointment as General Agent, Canadian Pacific Steamships Ltd., Yokohama, Japan, was announced in a recent issue, was born at Liverpool, Eng., of Scottish parentage, and entered C.P.R. service May 1, 1887, since when he has been, to 1892, at Montreal, and from 1892, in the Orient, at Hong Kong and Shanghai, China, and Kobe and Yokohama, Japan.

Floating Drydock for Vancouver.

We are officially advised that the Burrard Drydock Co. Ltd. has been informed that it may proceed with the building of a sectional floating self-docking drydock, under the terms of the agreement entered into with the Dominion Government in Dec., 1921, which provides for a subsidy payment by the Government, at the rate of 4½% on \$2,500,000 for 35 years, for the construction of the dock, with a lifting capacity of 15,000 tons, of the following dimensions: length over keel blocks 500 ft., length over walls 435 ft., width over all 132 ft., width between side walls 100 ft., draft of drydock afloat and fully loaded 15 ft. The work is to be done under the general supervision of the Dominion Public Works Department's District Engineer at New Westminster. W. T. Donnelly, New York, prepared the plans, and A. D. Swan, C.E., Montreal, was retained by the company as engineer for the work and for the preparation of contract plans and specifications. A full description of the projected drydock was published in Canadian Railway and Marine World for February, 1922, pg. 106.

Following the general elections, and the subsequent change of government, the company was notified Dec. 30, 1921, not to proceed with the work, or incur any liability in connection with the dock. Nothing, therefore, has been done since, but the drydock requirements have been consistently kept before the Government, with the result mentioned above.

The Burrard Drydock Co. Ltd. was incorporated under the Dominion Companies Act in Oct., 1920, with \$1,000,000 authorized capital, and office at North Vancouver, B.C., to build a drydock, and to enter into an agreement with the Dominion Government under the Drydocks Subsidies Act. C. Wallace, Wallace Drydock & Engineering Co., J. J. Coughlan, J. Coughlan & Sons, Vancouver, and R. S. Lennie, were among the directors.

River St. Lawrence tide tables and information connected with the ship channel from Father Point to Montreal; the port of Montreal; also Montreal to Lake Ontario and Ottawa River, have been issued by the Marine Department's River St. Lawrence Ship Channel Branch, of which V. W. Forneret is Superintending Engineer.

Czar Towing Co. Ltd. has been incorporated under British Columbia Companies Act, with \$75,000 authorized capital, and office at Vancouver, B.C., to carry on a general towing and shipping business.

The Ontario Transportation & Pulp Co. Ltd. has been granted supplementary letters patent changing its name to Chicago Tribune Transportation Co. Ltd. Its office is at 137 McGill St., Montreal.

Canada Steamship Lines Ltd. Annual Meeting.

At the annual meeting in Montreal, W. H. Coverdale, President, said:—"Those who were present at the last annual meeting will recall that, in moving the adoption of the annual report and financial statement for 1921, I offered for your consideration a survey in some detail of the company's financial and operating record leading to the credit position with which it was then confronted. Starting from that point, which may be taken as representing the conditions upon which the new financing was based, and which financing was authorized by you at that time, I now report as follows:—All of the details of the financing have been carried out by your officers and directors in exact conformity with your enabling resolutions, and upon the credit thus established, the operations of 1922 have been conducted with the result as shown by the annual report which has been in your hands for several weeks.

"The conditions of social and business unrest which existed during a substantial portion of the season of navigation and which were evidenced by strikes of workers in coal mining, transportation and other industries, and were entirely extraneous to this company's working, affected our gross revenues adversely by \$1,171,809; the gross revenue declining from \$12,786,680 in 1921 to \$11,614,871 in 1922. Expenses were reduced to meet this situation, by \$958,978, with the result that net earnings for the year were \$2,040,748, or \$311,831 less than in 1921. It is only fair to say that on account of the involved situation which existed in Dec. 1921, many items of expenses properly chargeable to 1921 operations were carried over into 1922, such items aggregating about \$160,000; while at the end of 1922 no similar items which had been ascertained were carried over. By making the adjustment occasioned in this manner, you will see that the net earnings for 1922 are about the same as those for 1921. Reserves for depreciation, for taxes, and for doubtful accounts, have been set up in adequate amounts; the item for depreciation being \$808,524, which was \$21,397 more than for 1921. As to the total amount of interest on debenture stock and bonds, etc., which amounted to \$719,819 for the year, it should be borne in mind that under the terms of its indenture the company pays interest on securities kept alive in the sinking fund, and uses such accruals of interest for the redemption of its bonds. About \$80,000 of the above amount is thus available for company purposes. The company earned \$429,910 applicable to dividends on its cumulative preference stock, and to other corporate purposes, as against \$875,000 required for such dividend. As no dividend was disbursed, the company is now in arrears in that amount.

"Dwelling for a moment on the service which was profitable during 1922, it may be stated that all upper lake, lower lake and canal package freighters, and all fresh water passenger steamships operated at a profit, while the gulf and coastwise, and ocean services operated at a loss. Before overhead and depreciation, the lake and river ships earned an operating profit of \$3,744,090; the gulf and coastwise boats lost \$151,184; and the ocean boats lost \$258,769. The aggregate loss of the last two services was \$409,953 for 1922, as compared with

a loss of \$600,499 for the previous year. Substantial progress is being made toward the elimination of this item of loss, and the management feel that these services should be continued until a more favorable opportunity presents for making a final disposition of the matter.

"Of the net earnings of \$2,040,748 there was devoted to payment of all interest charges, \$719,818, thus leaving for depreciation and for other corporate purposes \$1,320,930, which has been utilized about as follows:—Paid to date for balance of Century Coal Co. stocks and bonds, \$200,000; advances to Century Coal Co. to take up bank loans, \$500,000; rehabilitation of s.s. Richelieu, \$300,000; cash value of debenture stock and bonds retired through operation of sinking fund, thereby reducing funded debt by \$376,210, \$300,000. The balance sheet of Dec. 31, 1922, resulting from the above operations, discloses an improved credit position by reason of a reduction of \$3,890,272 in current liabilities by means of a corresponding increase in funded debt. At that date the company had outstanding no bank loans whatever, and no impending maturities. All assets and liabilities of subsidiary companies are included in the consolidated balance sheet furnished to stockholders; the contingent liability of \$1,000,000 appearing in the 1921 statement no longer exists, and all underlying bonds, with exception of \$59,460, had been retired, and cash deposited with trustees against the balance.

"In connection with the capital expenditure of \$300,000 made during the year 1922 on s.s. Richelieu, there was \$221,506 cash in hands of trustees, which is repayable to this company upon completion of work of rebuilding.

"During the year, 1,500 shares second preference stock and 625 shares of ordinary stock of British Empire Steel Corporation, Ltd., were sold for \$63,911, and cost to this company realized therefrom. During the year your company, acting through trustees, purchased \$220,000 first mortgage of Davie Shipbuilding & Repairing Co., Ltd., also \$21,700 second mortgage of the same company, with the result that the third mortgage of the Davie Co. for \$2,500,000 owned by this company, becomes a first lien on that property.

"Since the date of the last annual general meeting three new members of the London advisory committee have been elected by your board of directors, viz., Sir Walter R. Lawrence, Sir Reginald MacLeod, and R. B. Phillpotts. Your directors request the re-election of these gentlemen, together with Sir A. Trevor Dawson, Sir Vincent Caillard and Viscount Long, as members of that committee for the ensuing year.

"As the expenditures made during 1922 on s.s. Richelieu, Century Coal Co. and bond retirements, although large, do not represent the company's total commitments, and as we must find during the year 1923 about \$500,000 more to complete the Richelieu and Century Coal Co. purchase, and as the sinking fund will require another \$300,000 for retirement of additional bonds, and as we have miscellaneous requirements of at least \$100,000, it will be apparent that we must devote \$1,000,000 out of the net earnings of this year to the above purposes before we can hope to arrive at a credit position, which would warrant the

directors' consideration of the resumption of preferred stock dividends.

"Under these circumstances, you will be gratified to learn that the prospects for the season's business are excellent. There has been a good recovery in general business in the United States, our passenger bookings are already much in advance of last year, new C. S. L. offices have been opened in Pittsburgh, St. Louis, Cincinnati, Brooklyn and Los Angeles, and reports indicate increased tourist travel, to meet which we shall have the new Richelieu on the river, and an extra steamship on Lake Ontario. We are gradually improving our general cargo business and have been successful in closing many large contracts for west-bound tonnage in connection with our ocean service. Ocean rates are still very low, but when the upward trend comes we will be in a position to benefit therefrom."

The annual report and statements, a summary of which was published in Canadian Railway and Marine World for April, were adopted, and the retiring directors, who were re-elected, are as follows:—W. H. Coverdale, President; Robert Hobson, Vice President; J. W. Norcross, Vice President and Managing Director; A. J. Brown, K.C., Senator J. P. B. Casgrain, Geo. Caverhill, D. B. Hanna, F. J. Humphrey, F. W. Molson, H. B. Smith, G. H. Smithers, C. E. Taschereau, Senator Smeaton White. The other officers are: R. Brock Thomson, Secretary; J. I. Hobson, Treasurer. The executive committee is W. H. Coverdale, Robert Hobson, J. W. Norcross, A. J. Brown, K.C., F. J. Humphrey and F. W. Molson.

United States Merchant Marine.—After a conference between the President of the U.S. and the U.S. Shipping Board recently, it was announced that a decision had been reached to consolidate the board's foreign steamship lines into 18 or 25 trade lines, and then offer the ships of these lines for sale under a guarantee of maintained service for a period of years. If no justifiable offers are received for the ships under these terms, the board will enter upon an aggressive plan of operation on its own account. The suggested plan of government operation concerns cargo routes primarily, and not passenger routes. It was also stated that the board is willing to sell any of its ships at market price without maintenance of service guarantee, on a similar basis on which a number of oil tankers have been sold recently, but any ships sold at less than market prices, must be on a maintenance of service guarantee. Congress has voted \$50,000,000 for the operation of the ships for this fiscal year, and should the Board fail to make the sales as outlined, operation of the ships will be carried on by the Board, under the provisions of the Jones Act.

Kellum Maritime Affairs, Ltd. has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital, and office at Yarmouth, N.S., to own and operate ships for transportation of passengers, mail and freight; and to carry on a general towing, salvaging and wrecking business etc. The incorporators are: C. L. Sanderson, A. L. Chipman, Yarmouth, N.S.; N. Soderberg, K. M. Knudsen, L. Christensen, New York, and J. E. Kellum, Miami, Florida.

Dominion Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held, and judgments delivered in connection with the following casualties:—

Loss of s.s. Alaskan.

This matter is dealt with on another page of this issue.

Loss of s.s. Tuscan Prince.

Held at Vancouver, March 1 and 2, by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by H. Mowatt and W. Wright, as nautical assessors, into the stranding and loss of the Prince Line's s.s. Tuscan Prince, on Austin Island in Barkley Sound, while bound from Antwerp, Belgium, to Puget Sound ports, Feb. 15. After hearing the evidence, and considering a list of eight questions submitted by Alex. Morris, on behalf of the Marine Department, the court gave the following judgment, in the form of answers to the Department's questions:—The ship had 3 compasses, in good order and sufficient for the safe navigation of the ship. They were last adjusted in New York, about a year ago. The master ascertained the deviation from time to time, when possible, and the errors seem to have been ascertained properly and proper corrections to the course applied. The ship was supplied with sufficient charts and sailing directions, and her stock was replenished at San Francisco, the last port she left, before her loss. A good and proper course was set, and appears to have been carefully steered. She could make no leeway, having a gale of wind and a following sea right astern, to make allowance for which, the speed was reduced about 7½ hours before she stranded. Since her last dependable position from the radio direction finding station at the Columbia River, the weather conditions were such as to render it impossible to see or hear anything to verify or check the ship's position. Soundings were taken frequently, as they should have been. The ship was navigated in a proper and seamanlike manner. An abnormally strong current setting to the northward at a rate of at least 2½ knots an hour, combined with a blinding snow-storm, obliterating from view any object outside a few feet from the ship, was the cause of the stranding and subsequent loss, which were not caused by the default or wrongful act of the captain or any of the deck or engine room officers, or any other members of her crew.

Ship Building in Great Britain.—On March 31, there were under construction in the United Kingdom 1,492,000 tons of shipping, an increase of 23,000 tons over Dec. 31, 1922.

Transportation Conventions in 1923.

May.—International Railway Fuel Association, Cleveland, Ohio. J. G. Crawford, 702 East 51st Street, Chicago, Ill.

May 1 to 4.—Air Brake Association, Denver, Col. F. M. Nellis, 165 Broadway, New York.

May 7 to 9.—American Association of Engineers, Norfolk, Va. C. E. Brayer, 63 East Adams Street, Chicago, Ill.

May 9.—American Association of General Baggage Agents, Chattanooga, Tenn. E. L. Duncan, 232 South Michigan Ave., Chicago, Ill.

May 9 to 11.—American Railway Development Association, St. Louis, Mo. A. Leckie, Industrial Agent, Kansas City Southern Ry., Kansas City, Mo.

May 15 to 17.—American Railway Association, Division 6, Purchases and Stores, Chicago, Ill. W. J. Farrell, 80 Vesey Street, New York.

May 16 to 18.—Association of Railway Claim Agents, Denver, Col. H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

June 13 to 15.—American Association of Railroad Superintendents, Kansas City, Mo. J. Rothchild, 400 Union Station, St. Louis, Mo.

June 18.—American Train Dispatchers Association, Chicago, Ill. C. L. Darling, 1310 Mallery Bldg., Chicago, Ill.

June 20.—American Railway Association, Mechanical Division, Chicago. V. R. Hawthorne, 431 South Dearborn Street, Chicago, Ill.

June 25.—American Society for Testing Materials, Atlantic City, N.J. C. L. Warwick, 1315 Spruce Street, Philadelphia, Pa.

Sept. 18 to 20.—Roadmasters' and Maintenance of Way Association, Chicago, Ill. P. J. McAndrews, Chicago & Northwestern Ry., Sterling, Ill.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—American Association of Port Authorities.—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Canadian Car Demurrage Bureau, Eastern Lines.—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines.—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg, Man.

Canadian Electric Railway Association.—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association.—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Boyd Building, Winnipeg.

Canadian Industrial Traffic League.—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association.—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1.—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club.—W. A. Booth, 53 Rushbrooke Street, Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Ticket Agents' Association.—E. de la Hooke, London, Ont.

Dominion Marine Association.—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal.—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto.—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada.—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada.—C. N. Ham, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee.—A. E. Storey, 310 G.T.R. General Office, Montreal.

Hydro-Electric Railway Association of Ontario.—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee.—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club.—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada.—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

—Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of Canada.—Thomas Robb, Manager, 42 St. Sacrament Street, Montreal.

Transportation Club of Toronto.—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver.—C. A. Dorrler, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club.—A. J. Barber, 114 Cadomin Building, Winnipeg, Man.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Canadian Car & Foundry Co. and Canadian Steel Foundries Ltd., have removed their head offices in Montreal to 307 Craig St. West, from the Transportation Building.

Montreal Locomotive Works. Sir Charles E. Gordon has been elected a

director. He is President of Dominion Textile Co., Vice President of the Bank of Montreal and a director of several other financial and industrial companies.

Portland Cement Association.—During the American Railway Engineering Association's annual meeting in Chicago recently, a number of the members visited two laboratories there which are testing construction materials and methods, viz., the Lewis Institute, Structural Materials Research Laboratory, and the Underwriters' Laboratories. At the Lewis Institute, a film, showing the manufacture of Portland cement, was displayed. Prof. D. A. Abrams, in charge of the laboratory, described the work it is doing, following which the party divided into small groups, each of which was escorted through the laboratory by an attendant, who explained the making of test pieces, methods of storing, operation of testing machines, and other processes going on continually. At the Underwriters' Laboratories, a fire test on a concrete block wall was witnessed. Among those making the trip were the following:—S. B. Clement, Chief Engineer, Timiskaming & Northern Ontario Ry.; H. T. Hazen, Assistant Chief Engineer, Central Region, Canadian National Rys.; C. P. Disney, Assistant Bridge Engineer, Central Region, Canadian National Rys., and D. MacKenzie, of the Grand Trunk Western Ry.

FOR SALE

Street Cars and Parts

The Commission offers for sale the following complete street cars, car bodies, trucks, motors, etc. Sealed Tenders addressed to the Chairman, endorsed "Tender for Street Cars and Parts," will be received until noon of

May 12th, 1923

at the offices of the Commission, Public Utilities Building, 35 Yonge St., Toronto, Ontario. A cheque for 5% of the amount of the offer, payable to "The Toronto Transportation Commission," drawn on and accepted by a Canadian chartered bank, must accompany each Tender. Tenders for the whole or part of the lot offered will be received. The cars and materials offered are now on the Commission's property in Toronto, and Tenders must be based on acceptance as and where the cars and materials are located.

59 Single-truck cars complete with G.E.-67 motors;

6 Single-truck cars complete with G.E.-1000 motors.

1 Brill M.T. truck car complete with G.E.-67 motors.

2 Single truck trailer cars complete.

Also 11 single-truck motor car bodies and trucks (no motors).

7 Double-truck closed motor car bodies (no motors or trucks).

10 Single-trucks (no bodies), with G.E.-1000 motors; 6 G.E.-1000 motors and 6 pairs of wheels (no trucks nor bodies).

A condition of the acceptance of any Tender is that the cars or materials must be removed by the tenderer from the property of the Commission within one calendar month from date of notification of acceptance from the Commission to the Tenderer by registered mail.

Copies of a detailed inventory may be secured and appointments to inspect may be arranged through the Executive Department, Public Utilities Building, 35 Yonge St., or the Rolling Stock Department, 4 Sherbourne St.

The highest or any tender not necessarily accepted.

H. H. COUZENS,
General Manager,

TORONTO TRANSPORTATION
COMMISSION.

Here's Real News

The Hydro Electric Power Commissioners of Ontario
have appointed a Sales Syndicate
to advantageously liquidate all the

Equipment and Supplies

which can be released from the

Queenston-Chippawa Development

The majority of this Equipment—recently released—
was purchased new and used only on the above under-
taking. This is a splendid opportunity to secure really
high grade, modern Machinery-Accessories and
Supplies at prices that are right.

Our amended Stock List is now being prepared and we
will be very glad to forward your copy, upon request.
Time spent consulting this list will be time well spent.
Someone will profit handsomely as those who purchase
any of this "special offering" which is available are going
to make one of the best purchases in their career.

We give below a general idea of what class of equipment is
available.

Steam and Electric Shovels—Steam and Electric Locomotives—
Air Dump Cars—Air Compressors—Channellers—Conveyors—
Drills—Motors—Concrete Mixers—Concrete Cars and Auxiliary
Equipment—Electric and Steam Hoists. In fact—almost every-
thing you might require.

Inspection can be made at
Niagara Falls - Ontario

Our Representatives
will give every service

Put your name on our mailing list at once for complete "Sales Inventory"

Hydro Salvage Syndicate

P.O. Box 109

Niagara Falls, Ont.

Operated by

Canadian Equipment Co. Limited
Montreal

and

F. H. Hopkins & Co., Limited
Toronto and Montreal

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tender Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

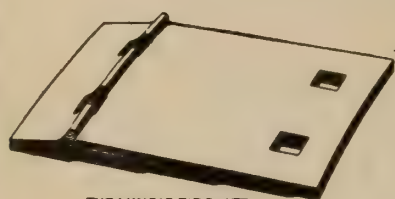
Rates for advertisements set in uniform style in six point under
Positions wanted and Positions Vacant, 3c. per word.
Equipment for Sale advertisements, 4c. per word.
Below five words where replies are to be sent to a box number. Minimum order—\$1.
Rates under other headings and for display advertisements on application.

Modern Marine Machinery

Automatic Steam Towing Machines, Ship Windlasses, Cargo and Deck Winches, Steam Capstans, Deck Gyro Steering Engines, Hydraulic Hoists, etc.

Manufactured by the

CORBET FOUNDRY & MACHINE CO., LIMITED, Owen Sound, Canada.



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THE LUNDIE ENGINEERING CORPORATION

920 BROADWAY, NEW YORK

Chicago Office:

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Canadian Representatives for Tie Plates:

THE HOLDEN COMPANY, LTD.
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FOR SALE

Self-unloading steel barge with tow tug. Barge carries 800 tons on 10 feet—is said to be in good condition. Tug engine 18 x 20.

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Third Rail Terminal,
Showing Method of
Attaching to Rail.

STANDARD Cable Accessories

include a complete line of Outdoor (Type D.O.A.) and Indoor (Type D. S.) Cable Terminals, Cable Junction Boxes, "Ozite" Insulating Compounds, etc.

These have been developed during 40 years' experience in the manufacture and installation of Electric Wires and Cables.

This experience is at your service.
Standard Underground Cable Co. of Canada, Limited

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NOTICE

In conformance with the Canadian Patent Act, we are prepared to accept and fill orders for the Standard Car Truck Company's side bearing covered by Canadian Patent No. 208873.

For prices and full particulars, apply to the Canadian Appliance Co., New Birks Bldg., Montreal, Agents for Standard Car Truck Co., Chicago.

Ontario Jockey Club TORONTO

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MAY 19th to 26th

The Sixty-Fourth Running of The King's Plate of 50 Guineas, with \$10,000 added—the oldest fixture run continuously on this continent.

Saturday, May 19th, at 4 p.m.

RACING - STEEPLECHASING

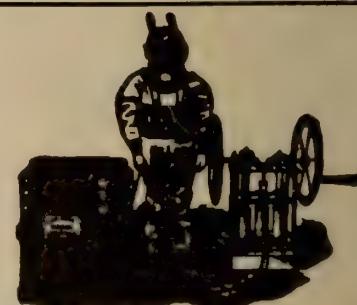
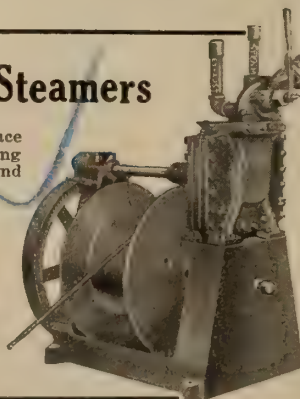
Col. Wm. Hendrie, W. P. Fraser,
President. Sec'y-Treas'r

Dake Snub Line Winch for Canal Steamers

To handle the heavy wire snub line. Takes up very little deck space and drum holds 120 ft. 1 1/4 in. wire. For a safety and labor-saving device it has no equal. A money-saver for the vessel owner and a godsend for the master in canalling his vessel through the St. Lawrence and Welland Canals. Send for special booklet and price. We also make a full line of Marine Machinery. Complete Catalogue of Dake Machinery on request.

DAKE ENGINE CO. Grand Haven - Michigan

Canadian Office: 45 Adelaide St. East, Toronto, Ont.
CAPT. WM. J. STITT, Can. Sales Manager.



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Manufacturer of

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For Sale or Hire

Brass Founder and Coppersmith
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STRAUSS Bridges in CANADA number more than TWICE as many as all other Bascule and Lift Bridges COMBINED. Consult us before adopting plans or undertaking construction.

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Canadian Offices: 14 Windsor Hotel, Montreal; 103 London Bldg., Vancouver.

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ANGUS SINCLAIR, C. E.

Railway Contractor

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ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
Reports, Design and Construction
Complete Railway Shop and Terminal
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Electrification of Steam Railroads.
CHICAGO

Traffic Service**FOR TICKET CASES AND COMMERCIAL FURNITURE**

of all descriptions to stock
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The Canadian Office and School Furniture Co.,
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Preston - Ontario

Bureau of Canadian Information

THE Canadian Pacific Railway, through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In the Reference Libraries maintained at Montreal, Chicago and New York are complete data on natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added. No charge or obligation attaches to this service. Business organizations are invited to make use of it.

Canadian Pacific Railway**Department of Colonization and Development**

165 E. Ontario St. Chicago 355 Windsor Stn. Montreal C.P.R. Bldg., Madison Ave., at 44th St. New York

IMPERIAL BANK OF CANADA

Capital Authorized.....\$10,000,000

Capital Paid Up.....7,000,000

Reserve Fund.....7,500,000

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Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the world.

Sterling and New York Exchange bought and sold.

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Consulting and Inspecting Engineers
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Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement, Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

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REINFORCED BRAKESHOES

OUR BRAKE SHOES decrease maintenance cost—increase brake efficiency

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Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Passenger Service. BABBITTS. Miscellaneous Brass Castings for Railroads.

Works and Office: 69 Delorimier Avenue, MONTREAL, QUE.

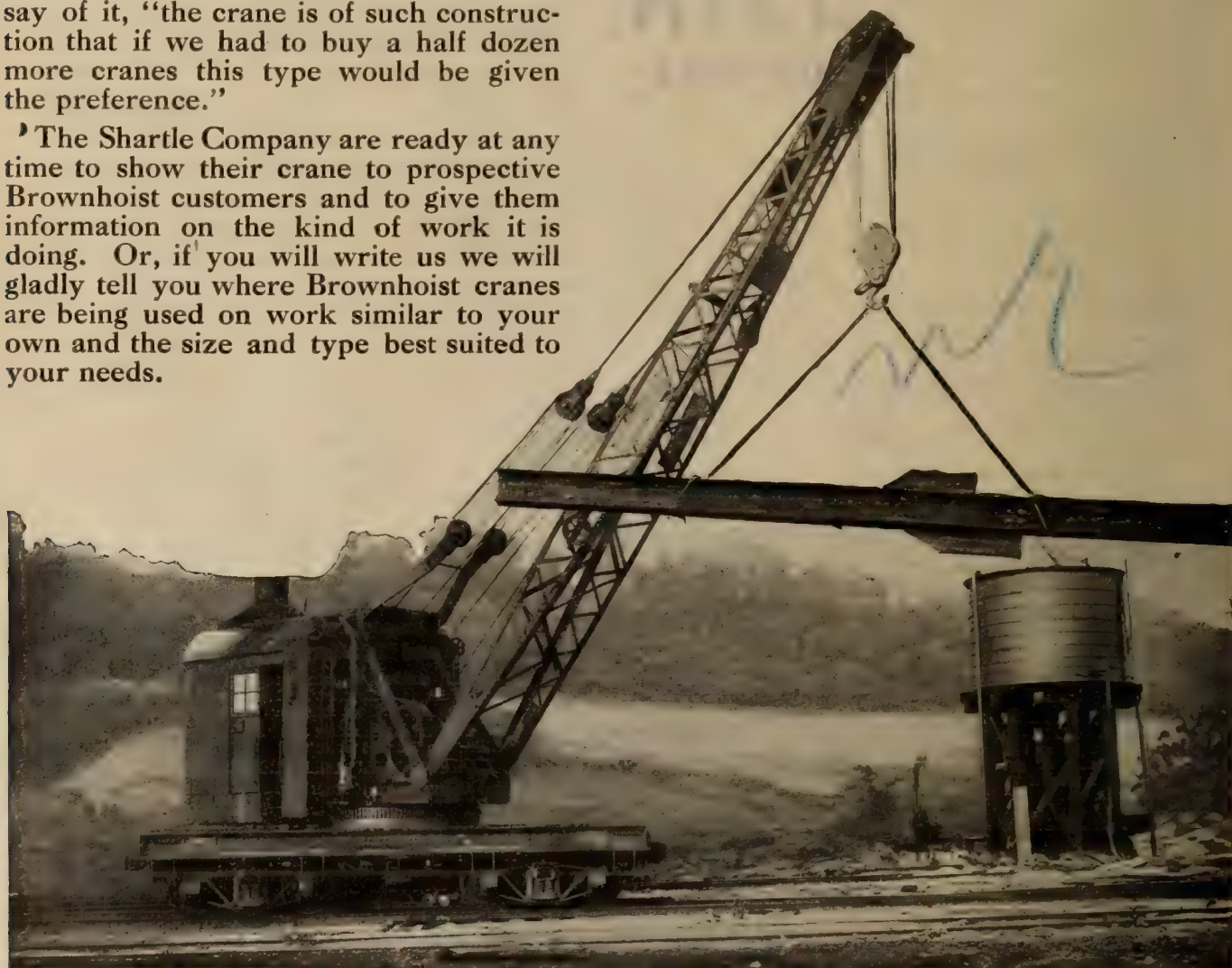
Saving \$10,000 in Sixty Days—

with their Brownhoist locomotive crane. That is what the Shartle Machine Co. did with a big Brownhoist No. 6 crane while wrecking a power plant at Nitro.

This crane had had several years service when purchased by the above company. With a few minor repairs they consider this crane as good as new and say of it, "the crane is of such construction that if we had to buy a half dozen more cranes this type would be given the preference."

The Shartle Company are ready at any time to show their crane to prospective Brownhoist customers and to give them information on the kind of work it is doing. Or, if you will write us we will gladly tell you where Brownhoist cranes are being used on work similar to your own and the size and type best suited to your needs.

Brownhoist builds both big and small cranes. Write us your handling conditions and let us help you select the crane best suited to your needs.



The Brown Hoisting Machinery Co., Cleveland, Ohio

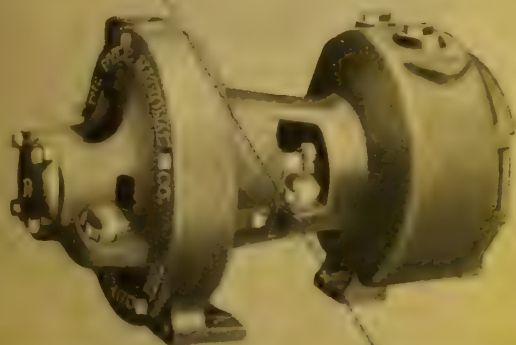
Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

Products: Locomotive Cranes, Buckets, Belt and Chain Conveyors, Contractor's Bunkers, Etc.

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The Pyle National Company



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A Complete Line of—

Steam Turbo Generators, 500 Watts to 7½ K. W.

Headlight Cases—Sheet and Cast Metal.

Reflectors—Metal and Glass Portable Headlight Cases.

Floodlights.

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Lamps for rear of tender.

Lighting accessories, such as switches (open and enclosed), sockets, dimmers, connectors, junction boxes, etc.

Write for Catalogue No. 101

Unequalled for Dependability--Economy--Durability

"Pyle-National" Steam Turbo-Generators

FOR
LOCOMOTIVE
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FLOODLIGHTS

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INCREASE SAFETY
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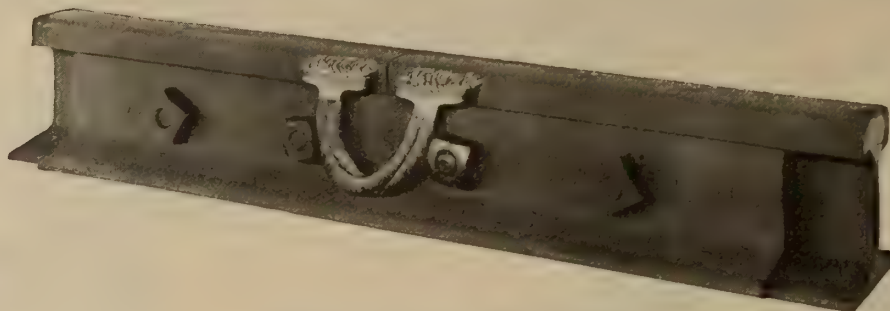
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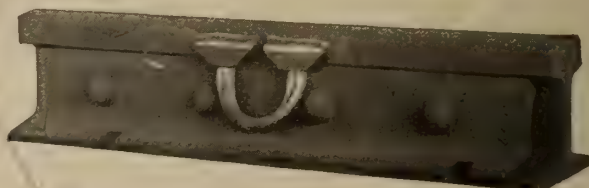
the standard among big electric railways. Brazed Bonds can be applied on head of rail, or web of rail, with ease and certainty of results.

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Type ET Brazed Bond

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A careful check of delays during heavy traffic will reveal the fact that the manual operation by trainmen of certain switches is acting to choke the capacity of your whole railroad system. It is robbing you of the use of locomotives, cars and rail facilities.

In no other way can you secure such great operating benefits for such a small expenditure than by installing R-S Remotely Controlled Electrically Operated Switch Machine Layouts at such switches. These switches can then be operated from the nearest telegraph office or block station and a great waste in fuel, labor and other items will be eliminated.

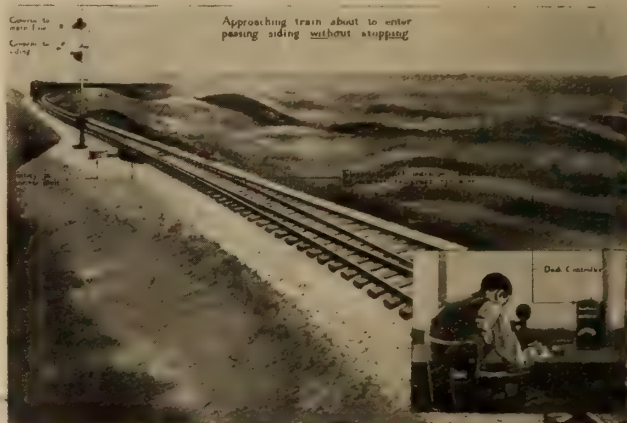
Through information secured by the signal division of the American Railroad Association from a large Eastern Railroad the cost of freight train delays is placed at 40 cents per minute and a delay of at least 10 minutes is required for the manual operation of a switch by the train crew. In many cases the cost is much more than 40 cents per minute.

A large western railroad recently estimated the savings for one remotely controlled electrically operated switch machine installation as follows:

1. Location—Passing Track Switch Block Signal Territory approached on an 0.8% grade.
2. Approximate Cost of Installation—\$3000.00.
3. Average number of train stops per 24 hours for heading in—6.
4. Average train stops per year for heading in—2190.
5. Average time loss per train per stop for heading in—10 minutes.
6. Train Crew wages per stop—\$.56.
7. Cost per year for train crew wages, account time lost heading in—\$1226.40.
8. Extra coal required per train per stop—1800 lbs.
9. Cost per year for extra coal account train stops at \$.403 per ton—\$7980.00.
10. Adding items 7 and 9 shows a saving of \$9206.40 by eliminating train stops for heading in to siding.
11. Allowing \$500.00 per year for interest on investment depreciation and repairs leaves a net saving of \$8706.40 per year.

Although the cost of this particular installation was low due to its location in block signal territory and the item of coal required for a stop appears high due to the stop being made on an 0.8% grade the figures show conclusively that without considering perhaps the most important items—the resultant increase in the use of locomotives cars and rail facilities—the installation pays for itself in less than a year.

There are no doubt, passing track switches on your road where large savings can be effected. The matter is of such importance as to warrant your most careful consideration.



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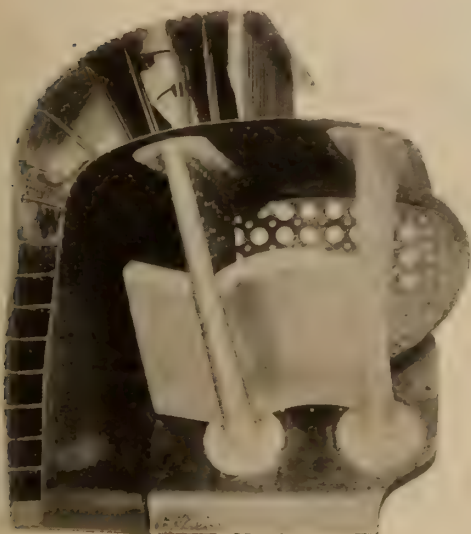
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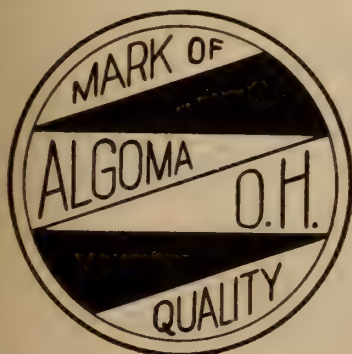
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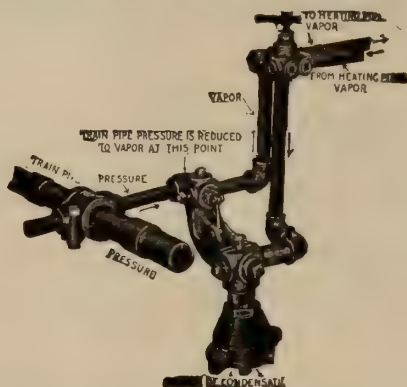
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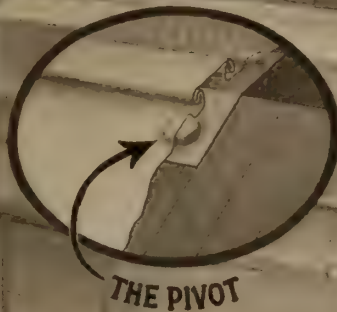
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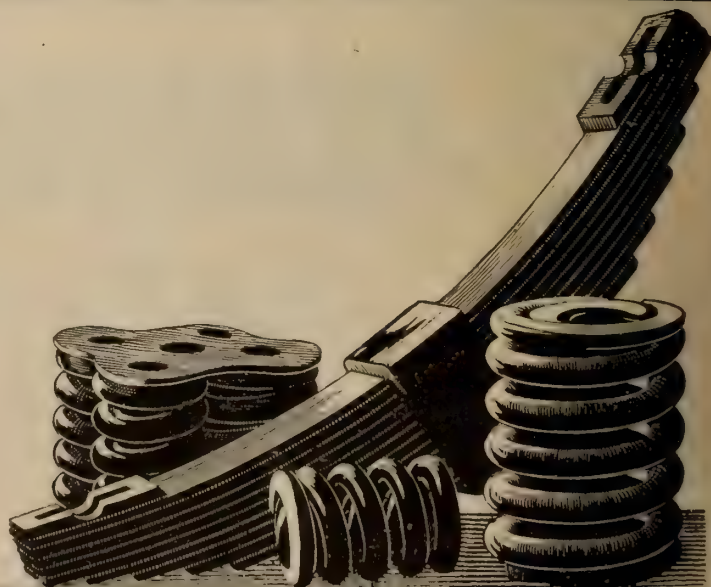
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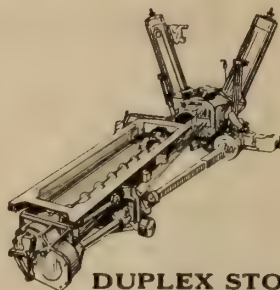
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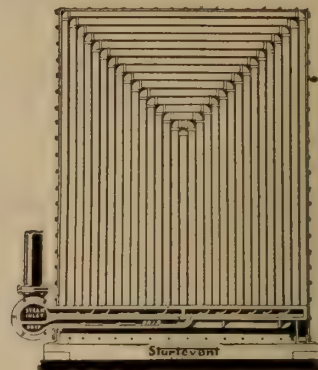
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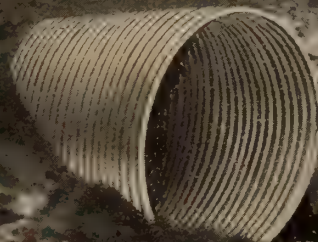
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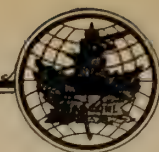
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Midland Shipbuilding Company, Limited

Builders of STEEL SHIPS, lake or ocean type, TUGS, DREDGES, SCOWS.
Special attention given to repairs and reconstruction.

DOMINION TOWING & WRECKING CO., LIMITED

Tug Strathbogie
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Tug Strathbell

Harbour Tug Service

Lighter Strathbuoy—Capacity, 700 tons.

Equipped for all kinds of Towing, Wrecking, Etc.

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Inspection Cars
Gang and Power Cars
Push Cars and Trailers

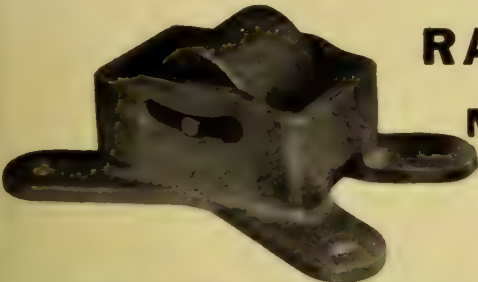
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Bearings
Engines, Power Decks and Safety
Appliances for Motor Cars

SEND FOR DESCRIPTIVE BULLETINS

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MINER
RAILWAY APPLIANCES
MANUFACTURED IN CANADA



**ROLLING ROCKER
SIDE BEARINGS**



**IDEAL
SAFETY
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BRAKES**



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FRICTION
DRAFT
GEARS**

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CHICAGO**

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FOR THE PRINCIPAL PARTS OF A LOCOMOTIVE

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| 1 Cylinder Bushing | 6 Valve Bull Rings |
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for both cylinders and valves
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Canadian Representative: Canuck Supply Co., Ltd., 371 Aqueduct St., Montreal, P. Q.

The BERTRAM MACHINE TOOLS Page

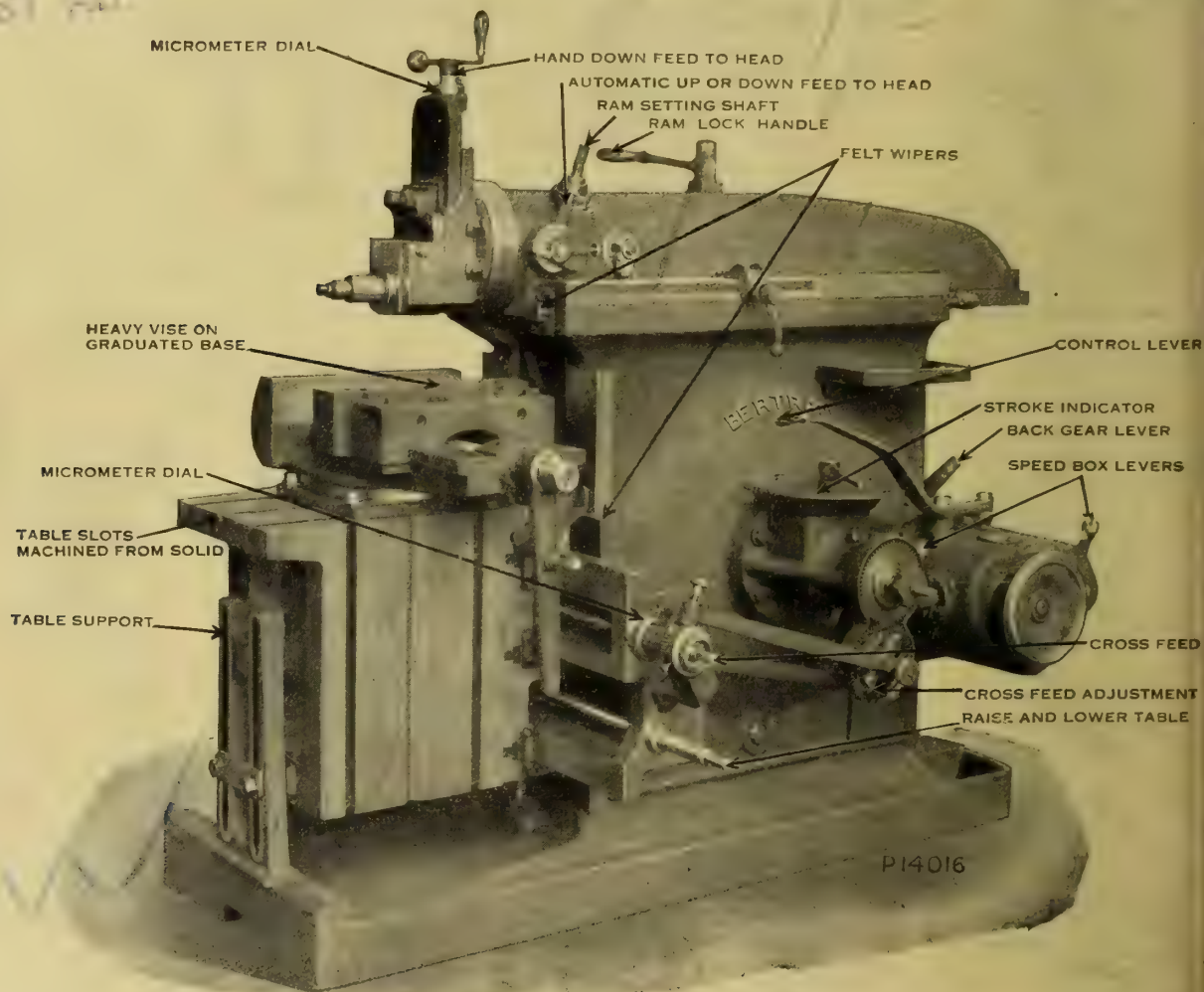


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and
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*Belt
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Driven
as desired*



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WALKERVILLE
103½ Sandwich St.

WINNIPEG
1205 McArthur Bldg.

HALIFAX
Roy Building

Canadian Railway AND Marine World

Founded in 1898 by Acton Burrows.

Number 304.
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TORONTO, CANADA, JUNE, 1923

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BERTRAM MILL MACHINE TOOLS

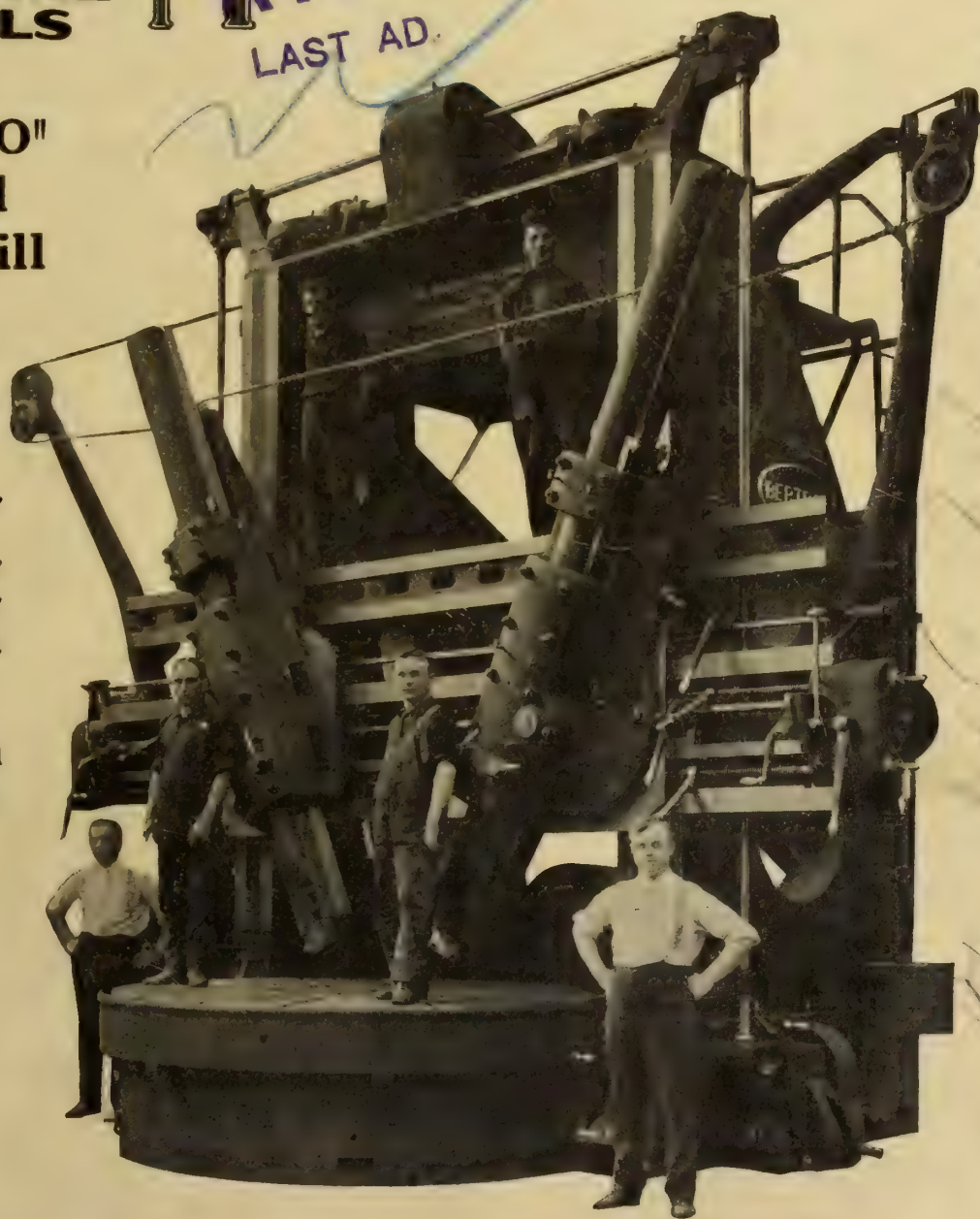
An Auxiliary Rail supports the Bars, giving them a length of bearing support equal to one-half the total length of the bar.

Special 100" Boring and Turning Mill with D.C. Motor Drive

Maximum Swing.....102"
Height under Tool
Holders..... 96"
Travel of Bars..... 78"
Total Weight 102,000 lbs.

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NEW YORK CHICAGO ST. LOUIS



Simplex Clasp Brakes

INTERNATIONAL EQUIPMENT CO. LTD.
MONTREAL, QUEBEC, CANADA.

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We have the largest stock of propeller patterns in Canada—and all propeller repair work is especially rushed to avoid costly "tie-ups." For new propellers, or blades, or complete replacements, wire or 'phone us.

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Castings
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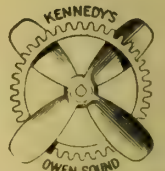
The Wm. Kennedy & Sons
OWEN SOUND ONTARIO LIMITED

District Representatives:

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H. C. KENNEDY, 232 St. James St., Montreal - Phone Main 394

Maritime Representative:

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Service shows the most successful car roof to be the

All Steel Dry Lading Roof

which made possible the following specifications:

No. 1. That should be weather-proof under all conditions, also rust-proof, fire-proof and burglar-proof.

No. 2. That should not require maintenance for at least ten years.

No. 3. That should be of low deadweight and give the car a low center of gravity.

No. 4. That should lessen strain on the superstructure of the car when the car is in motion.

No. 5. That should strengthen, rather than detract, from the strength of the car frame.

No. 6. That should give the greatest interior capacity and the lowest clearance limits.

No. 7. That should be flexible enough to conform to every service condition of the car.

No. 8. That should be possible to use again on the same or another car, even in case of partial or total destruction of the rest of the car by fire or wreck.

No. 9. That should not require roofing boards.

No. 10. That should be of low first cost.

No. 11. That should permit of inspection on the part of any shipper by merely closing the doors of the car and if no rays of light are seen through the roof, the shipper to consider it a weather-tight roof.

No. 12. That should be so constructed that the carlines, purlines and ridge, tie the sides and ends of the car together firmly, so that the weather-proof roof has only the one duty of protecting the contents of the car from the elements.

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MONTREAL

Universal **HAND BRAKE ATTACHMENT**



DESIRABLE ON ANY CAR-A REAL NECESSITY ON MANY

MADE IN CANADA

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Transportation Bldg.

Montreal, Canada

Dearborn

BULLETINS



KILL
LAST AD.



Operating Efficiency: Talk No. 1

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Clean boilers are the foundation. Scaling, foaming, pitting and corrosion are the enemy forces. Manufacturers of devices for increasing efficiency assume that the water is "right."

The Greatest Saving Is Without Initial Investment

Dearborn Scientific Treatment represents no initial investment on the part of a railroad. Its cost is only a tiny portion of its constant saving. It is used in connection with either raw or softened waters. Its results are sure.

Backed up by scientific understanding and prescription, by laboratory control of feed water variation, Dearborn and Dearborn alone offers a comprehensive service that is the key to locomotive efficiency. Dearborn Service men travel the lines constantly checking results.

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Railroads not now using Dearborn are invited to send us samples of water supplies from their troublesome districts.

We will make analyses and recommendations at our own expense and guarantee to clean up and keep clean, scaled boilers, and to prevent foaming, pitting and corrosion.

There is no obligation. If you buy Dearborn Treatment it is because you will believe that it is going to save money for you. There is no substitute for Dearborn Treatment.

Dearborn Chemical Company

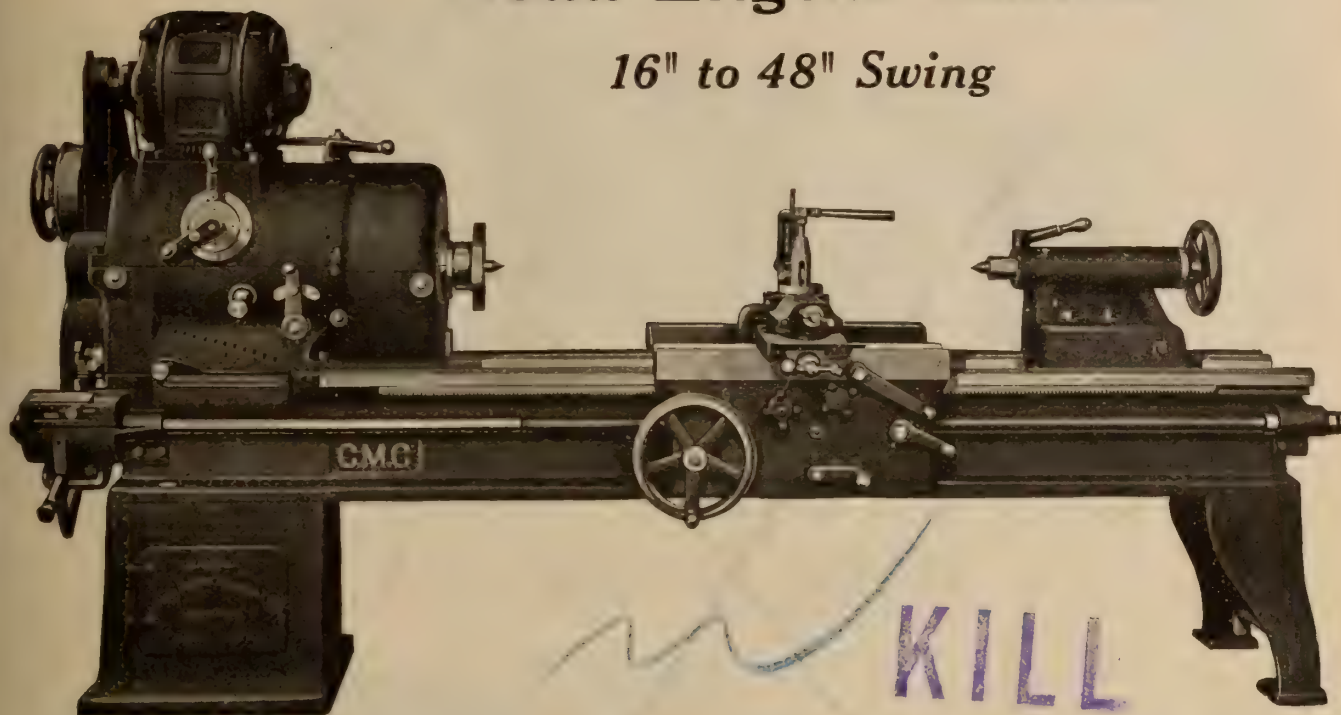
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Motor Driven All Geared Head Engine Lathes

16" to 48" Swing



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May be placed anywhere in the shop without reference to line shafting or belting arrangements.

Operates when required night or day independent of the rest of the plant.

All speed and feed changes are within the operator's reach on the front of the headstock. Eighteen spindle speeds from thirteen gears. No belts or exposed gears to endanger his safety.

Consumes power only when in use. Numbers now installed by leading Canadian railroads, where they are giving universal satisfaction. Full information sent upon request.

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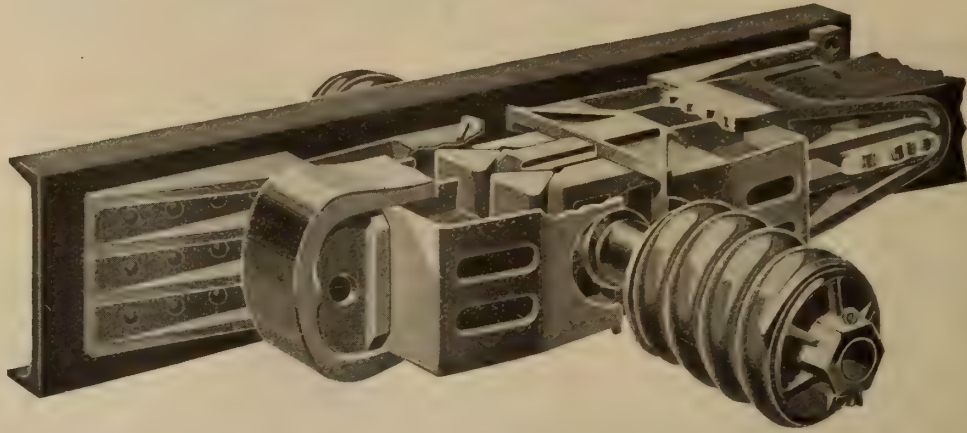
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GALT - ONTARIO

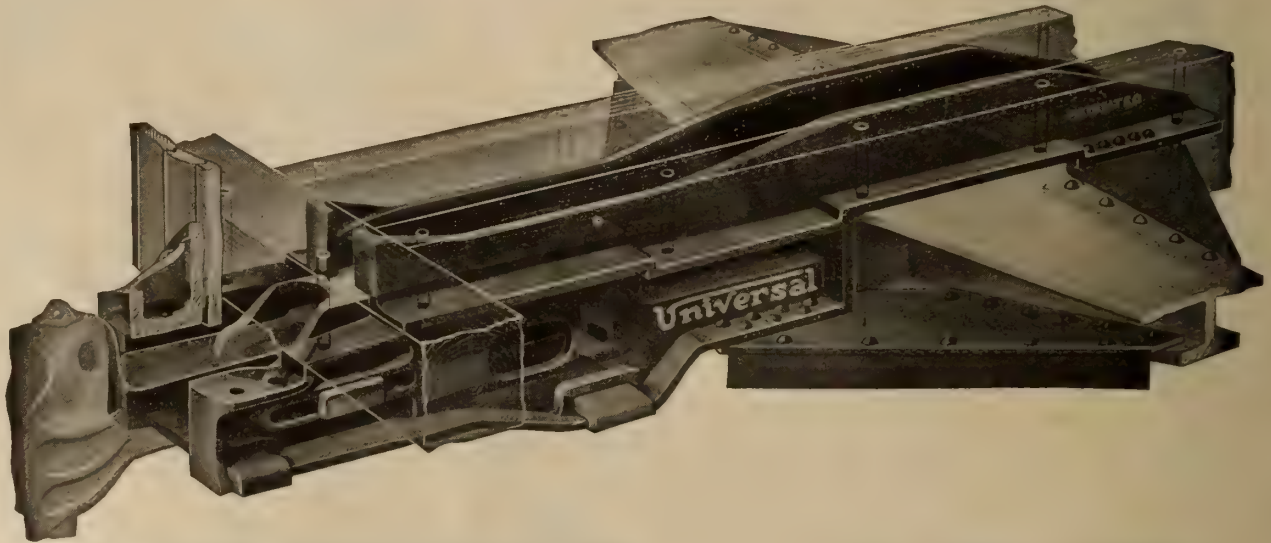
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Universal ATTACHMENTS
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REENFORCING DRAFT ARMS
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CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

MADE IN CANADA

WEBB. G. KRAUSER

Transportation Building, MONTREAL



When You Turn to Electrification

The problems of your project can soon be brought down to consideration of materials, with the aid of our Specialists. They are trained and experienced in dealing with all the phases of transmission, distribution and collection of power from generator to motor—for electrification.

Established practice, or the improvements suggested from experience, are reflected in, or result from the development of O-B Materials.

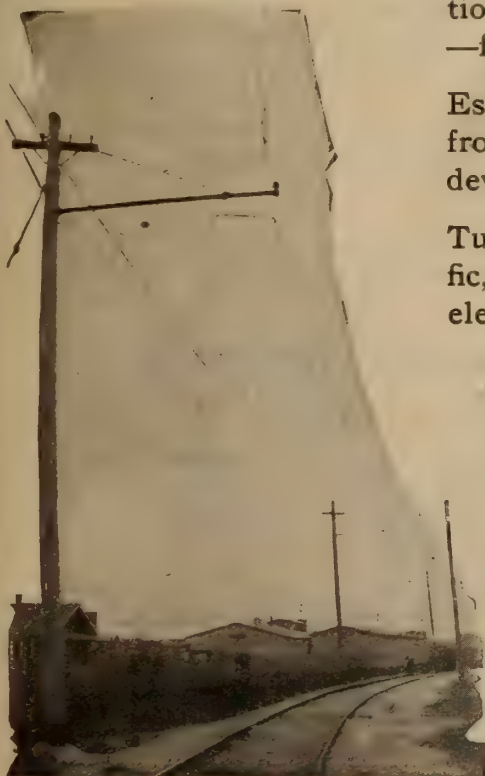
Tunnels, Terminals, Mountain Grades, Mining Traffic, Suburban Traffic or any circumstance calling for electrification come within the scope of our Service.

Do not Hesitate to take Advantage of it

Dominion Insulator & Mfg. Co. Limited

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Niagara Falls - - - Ontario



Vanadium Instead of Quenching and Tempering

IT is no longer necessary to use a quenched and tempered steel to secure the strength and toughness demanded of present-day locomotive forgings.

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about Carbon-Vana-
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simple alloy steel.

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The purity of the oxygen and dissolved acetylene used in welding and cutting operations has an important bearing on the result.

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OXYGEN

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REGULAR FREIGHT, PASSENGER and MAIL SERVICE

Every three weeks from Montreal in Summer and Halifax, N.S., in Winter,
To Hamilton, Nassau, Kingston and Belize.

Reasonable Fares. Superior Passenger Accommodation. Excellent Cuisine.

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From Vancouver and Vancouver Island ports,
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ELECTRIC CARS

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Steel Frame Trailer Car. 100 built 1923 for Toronto Transportation Commission.



GALVANIZED POLE LINE HARDWARE

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WASHERS

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You save \$120 monthly if it is necessary for you to cover the entire transportation field in Canada with your advertising by being able to use one paper, Canadian Railway and Marine World.

The reason of this is that the paper is devoted to both land and water transportation and is subscribed to and read by officials and executives of steam railways, electric railways, ship owners and operators and ship builders. And this is only part of the field, as railway, canal and harbor contractors, harbor commissioners and government officials interested in railways and public works also look to the paper as

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If separate papers were published by us to cover the three primary fields, it would be necessary for you to advertise in each at a cost of \$60 a page, a total of \$180, but we feel that we serve not only our advertisers best by publishing one strong paper covering the entire field, but also our subscribers, on account of the close inter-relation of land and water transportation in this country.

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CANADIAN RAILWAY AND MARINE WORLD

Toronto

Member of

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Canadian National Newspapers and Periodicals Association,
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Perfection Signal Oil

A Galena product that is known throughout the world. Used by representative railroads in every country. Meets every requirement of railroad specifications. The burning oil that truly exemplifies the principles of "Safety First."

Perfection Signal Oil is made specially for use in railroad hand lanterns. Manufactured by Galena process from the highest grade materials possible to secure, it is tenacious of flame, long-burning, safe and reliable under all conditions of weather or operating service.

Perfection Signal Oil is purely a quality product, the development of many years of test and experience. It not only carries the unqualified guarantee of this company to render uniformly reliable and satisfactory service, but the personal co-operation of our service engineering staff to make such results certain. While not built to meet price considerations, Perfection Signal Oil costs but very little more than the inferior grades of compounded signal oils now offered for railway use.

The work required of oils used for motion signalling precludes the use of makeshifts. Its functions are among the most important in railroad operation, as they deal almost entirely in the safeguarding of lives and property.

The known fire hazard and instability of volatile oils places them outside the zone of safety for this use, while improperly compounded admixtures of animal and mineral oils are unsatisfactory through inability to produce a clear and dependable service light.

Perfection Signal Oil is manufactured
and marketed only by this company.



Galena-Signal Oil Company

of Canada, Limited


Toronto

Montreal



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STRUCTURAL STEEL SHAPES



***"From Ore to Finished Product
—All Within the Empire"***

MERCHANT BARS—Rounds, Squares, Flats, 6 inches and under in width.
STRUCTURAL STEEL SHAPES—including Beams, Tees, Zee Bars,
Angles, Channels, etc., for structural and fabricating purposes, having section
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BRITISH EMPIRE STEEL

CANADA CEMENT BUILDING CORPORATION LIMITED

MONTREAL CANADA



CHILLED IRON WHEELS
for railway and street car
service. Capacity 20,000 per
day. 25,000,000 in service.

ASSOCIATION OF MANUFACTURERS
OF CHILLED CAR WHEELS
1847 McCormick Bldg., Chicago

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Chicago, 4	Sayre, Pa.
St. Louis, 2	Berwick, Pa.
Buffalo, 4	Albany
Pittsburgh, 2	Toronto
Cleveland, 2	New Glasgow, N. S.
Amherst, N. S.	Madison, Ill.
Montreal	Huntington, W. Va.
Mich. City, Ind.	Wilmington, Del.
Louisville	Houston, Tex.
Mt. Vernon, Ill.	Hannibal, Mo.
Ft. Wayne, Ind.	Reading, Pa.
Birmingham	Baltimore
Atlanta	Richmond, Va.
Savannah	Ft. William, Ont.
Boston	St. Thomas
Detroit	Hamilton
St. Paul	Ramapo, N. Y.
Kansas City, Kan.	Marshall, Tex.
Denver	Los Angeles
Tacoma	Council Bluffs
Rochester, N. Y.	

American Railroad Association Standards

650 lb. wheel for 60,000 Capacity Cars
700 lb. wheel for 80,000 Capacity Cars
750 lb. wheel for 100,000 Capacity Cars
850 lb. wheel for 140,000 Capacity Cars

The Standard Wheel for Seventy-Two Years

CHILLED IRON WHEELS

ELECTRICAL CONDUCTORS TELEPHONE TELEGRAPH AND POWER CABLES



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Made in our Montreal Factory
where we are staffed and
equipped to manufacture
Wires and Cables for
every electrical
need

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Cable

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Taped and Braided
Power Cable

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Cable

Paper Insulated
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Northern Electric Company
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Automatic Telephones
Wires & Cables
Fire Alarm Systems
Radio Sending and
receiving Equipment

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Construction Material
Illuminating Material
Power Apparatus
Household Appliances
Electrical Supplies
Power & Light Plants
Marine Fittings



"Brownhoist Cranes are Unsurpassed"

**KILL
LAST AD.**

Brownhoist builds cranes, buckets, chain and belt conveyors, bins and other handling equipment. The cranes are mounted on creepers or 8 or 4 wheel railroad trucks and are powered by gas engine, steam or electricity.

"Our company has used several makes of locomotive cranes and we know by comparison that the Brownhoist is not surpassed by any other," says the Franc Slag Company. This company operates many slag and stone crushing plants in Ohio and Michigan and have used Brownhoist cranes for years.

The Brownhoist at their Toledo plant handles an average of 500 tons of slag a day at a cost of 4 cents per ton. Besides its regular work of handling crushed slag this Brownhoist does all kinds of odd jobs around the plant.

With the increasing cost and difficulty in getting labor the money-saving possibilities of a Brownhoist are worthy of your careful study. Write for a copy of catalog K and let us go into your problem with you.

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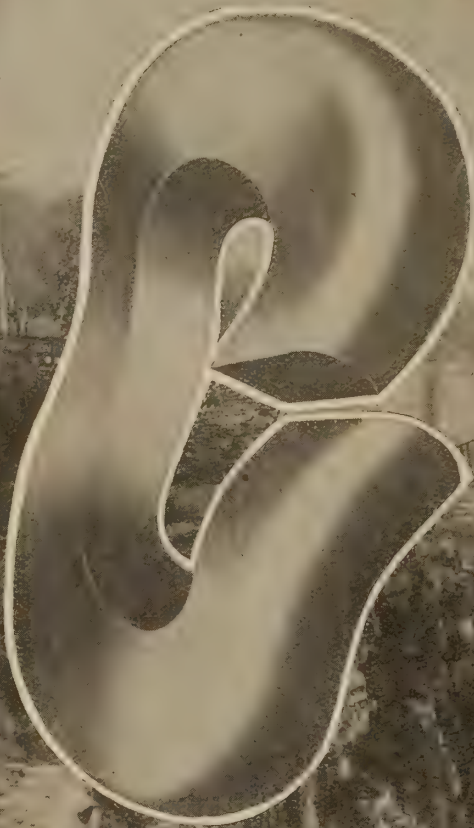
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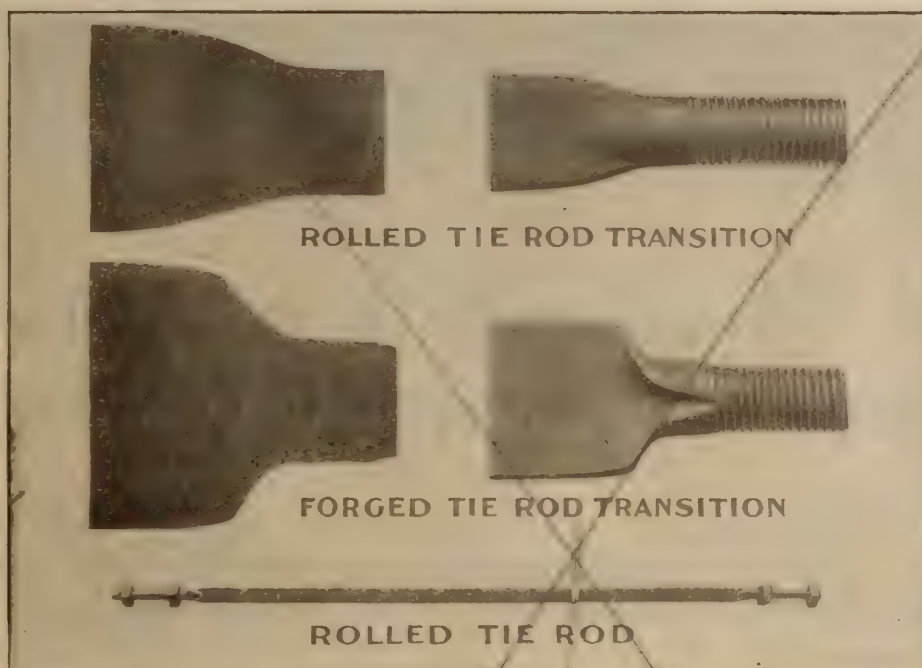
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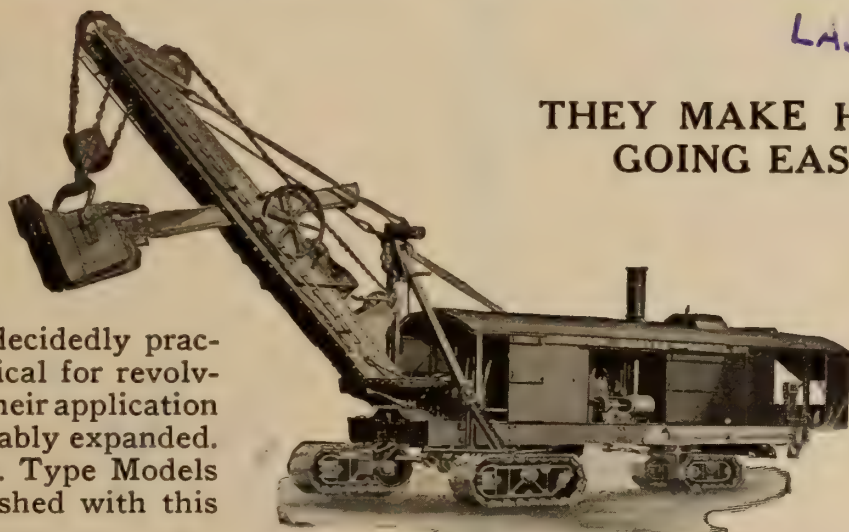
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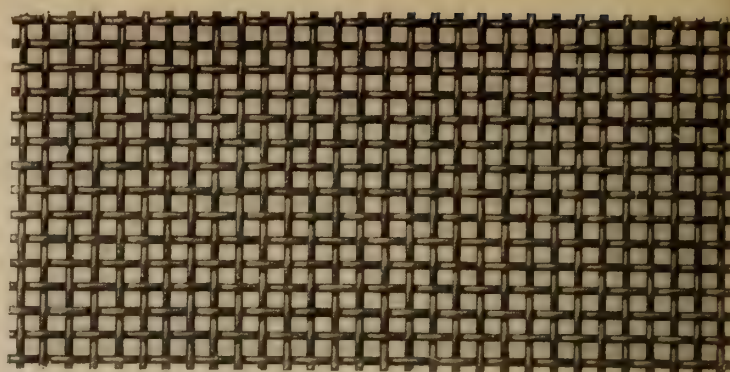
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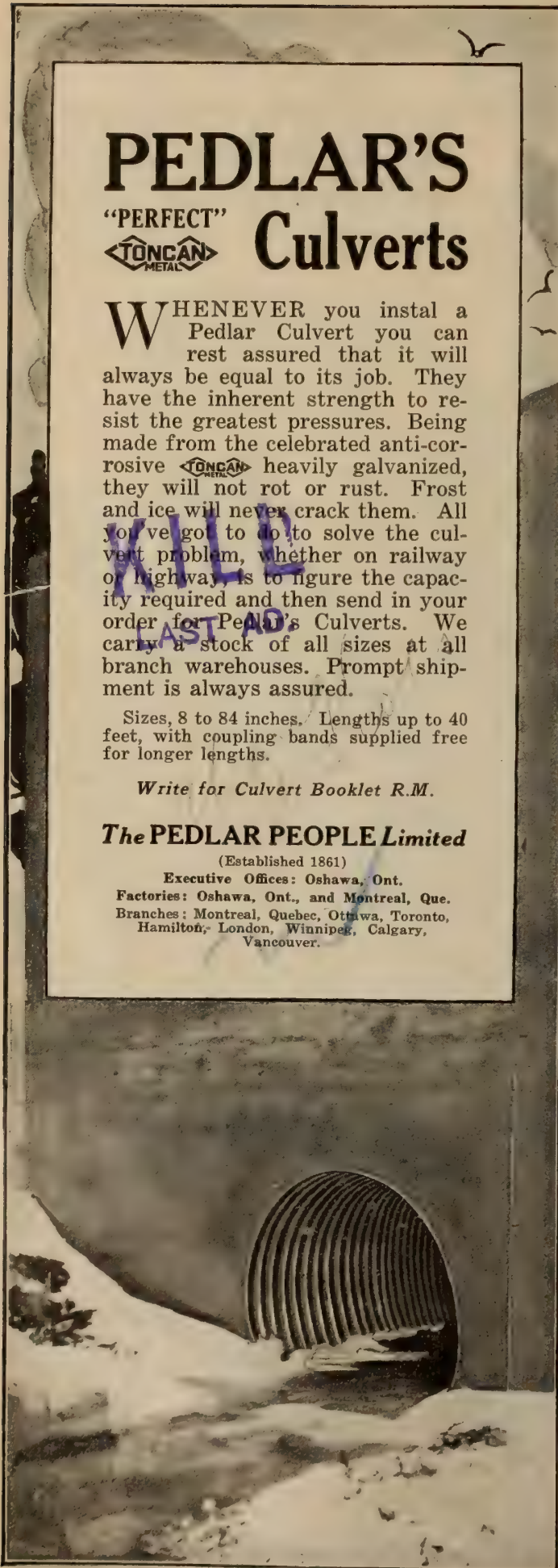
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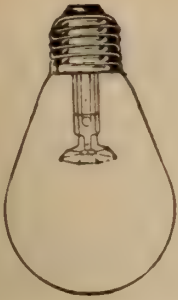
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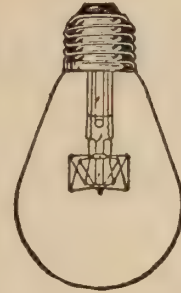


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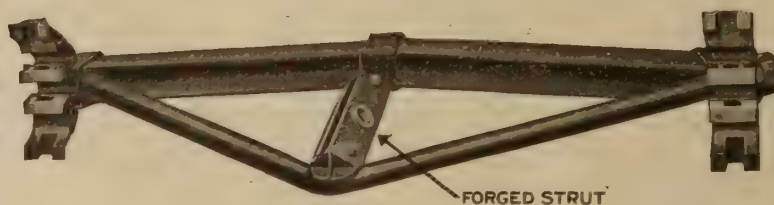
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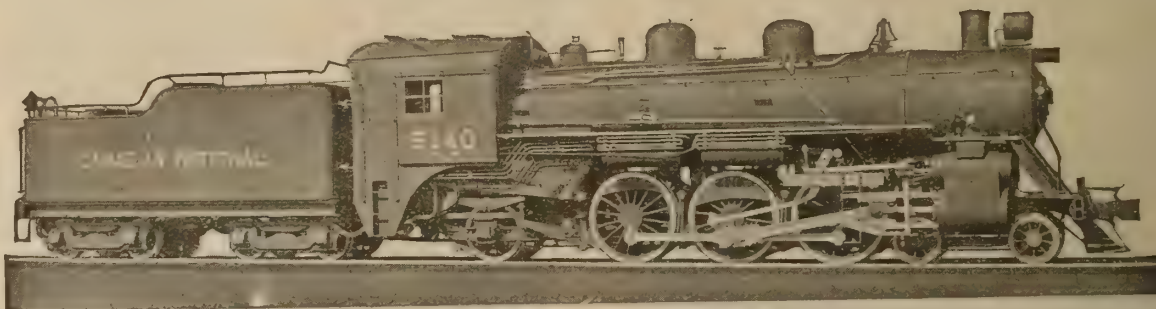
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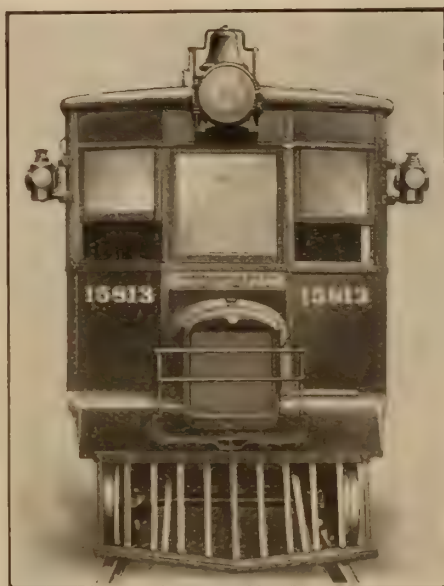
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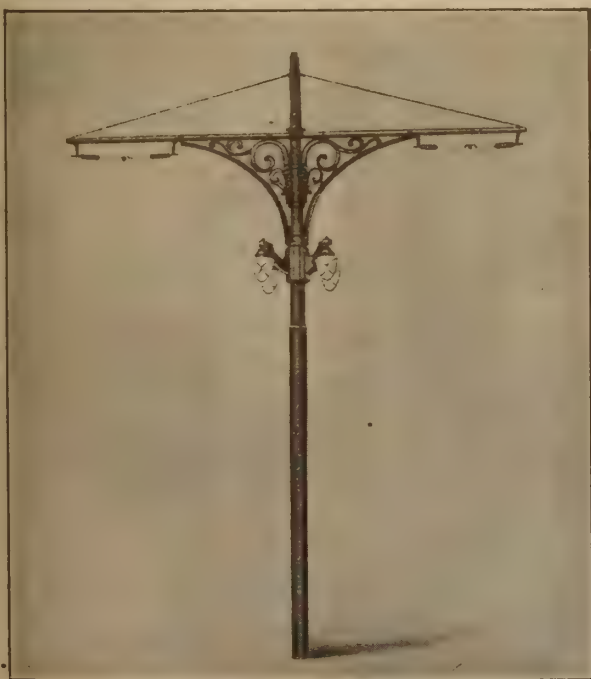
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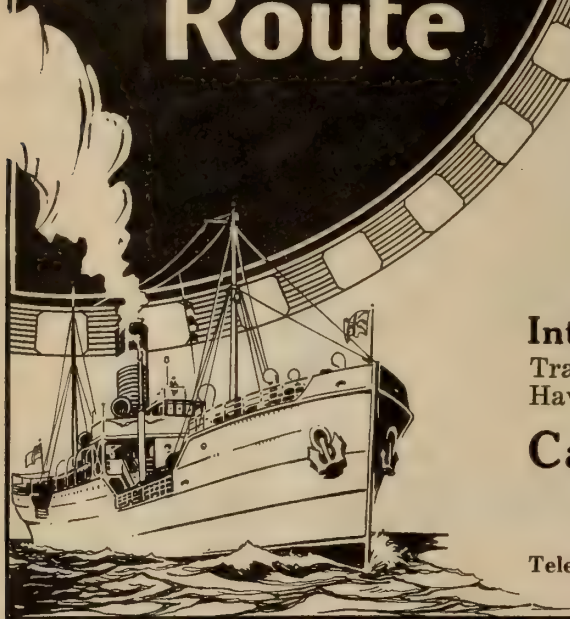
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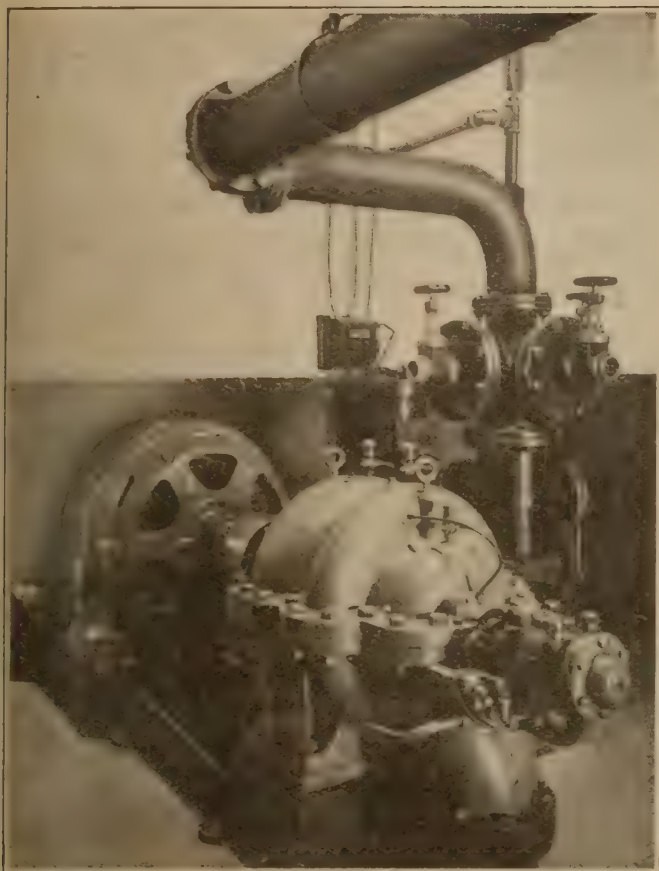
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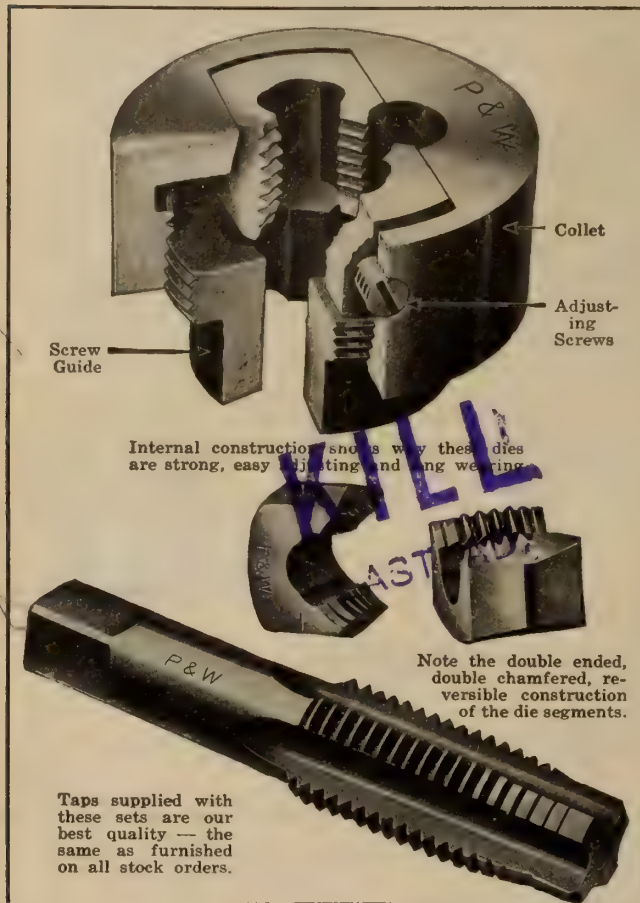
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Canadian Railway and Marine World

June, 1923

Steel-Car Construction at Angus Shops, Canadian Pacific Railway.

By H. R. Naylor, Assistant Works Manager, Angus Shops.

In 1909 the C.P.R., to meet the increasing severity of modern traffic requirements, originated a box car having its entire frame built of steel. The production of such equipment in quantity, necessitated the erection of an additional shop for the fabrication of the steel work, and the structure built embodied in its arrangement many novel features for the rapid handling of material to and from the machines and also during the various stages of assembly. The following paper describes this shop very completely, gives particulars regarding its layout, crane facilities, machine equipment, etc. The various machining operations and the jig method of car assembly, first put into practice at the Angus shops, are presented in detail, and the methods used in the final erection and finishing of cars are dealt with at some length.

In reviewing the improvements that have been effected in railway engineering in recent years, reference is usually made to the heavier and more powerful locomotives employed, grade elimination, heavier rails, improved train control and terminal facilities; but while great advances have been made in all these directions, it is a question whether the relative advance in any one of them has equalled that in car construction. The locomotive of higher capacity has been built without material change in the shops or their equipment, grades are removed today in practically the same manner as when the lines were originally built, and the same remarks hold good in regard to rails, train control, and terminal facilities, but in car construction the situation is substantially different. To particularize, a comparison of the modern 60-ton steel-frame box car with the 30-ton wood-frame box car commonly built 15 years ago brings out two points: the complete change in design, and the effect this change in design must have had on the car shops. It is obvious that the facilities for building the wood-frame car would be quite inadequate for the steel car and must have created new problems with which the car builder had to contend; and it is the author's intention to deal with this phase of steel-car construction, especially as the C.P.R. was responsible for many of the important developments.

Development of Steel-Frame Box Car.—The gradual increase in locomotive capacity, making possible the hauling of longer and heavier trains, subjected the wooden car to severe service conditions, which were in turn met by steel underframes and other steel reinforcements; and at each stage of advancement wood framing was gradually replaced by steel, until in 1909 the C.P.R. originated a box car having the entire frame built of steel. Within six years (1909-1914) this road added 30,841 steel-frame box cars to its equipment, and others soon adopted the same design, in some cases with slight modifications. After 10 years of extensive service these cars had evidently proved their utility, for the United States Railroad Administration, in one order

alone, included no less than 50,000 of this type.

The earlier type of steel-frame box car, shown in fig. 1, was built with center sills of 15 in. channels, side sills of 8 in. channels, side and end posts of 4 in. Z-bars, and corner posts of 5 in. angles. The longitudinal sheathing was bolted to the inside of the framing, in which elongated holes were punched, to allow of the boards being retightened without removing the bolts. This feature, however, has since been discontinued, as there is a possibility of the joints be-

machines, and also during the various stages of assembly. At the time of its erection it probably represented the best practice on this continent, being a combination of the good features observed in other shops with the original ideas developed at the time the layout was being planned. The freight section of the shop was designed to construct steel-frame box cars in the most economical manner, and although some minor modifications have been made in the machinery layout and erecting equipment to meet subsequent developments, the shop



Earlier type of steel frame box car built by the C.P.R.

tween the boards reopening if they are not effectively checked.

Necessity for Building a New Shop.—The Angus shops were already well equipped for building passenger and freight cars on an extensive scale, the large passenger and freight shops having supplementary planing mills, gray-iron and wheel foundries, and blacksmith, machine, and truck shops capable of supplying the greater proportion of all the materials required. The output of wood-frame box cars at these shops had reached as high as 40 cars a day. This remarkable organization, however, was rendered obsolete to a large extent when the C.P.R. introduced the steel-frame box car, to meet the increasing severity of modern traffic requirements, necessitating the erection of an additional shop. This shop was designed for building the steelwork of both passenger and freight equipment, and embodied in its arrangement many novel features for the rapid handling of material to and from the

has well served the purpose for which it was intended, and has furthermore proved equally satisfactory for building large orders of automobile, refrigerator, coal, and flat cars, in addition to steel snow ploughs and other snow-fighting equipment. At intervals between new car construction, the shop is used extensively for repairing and rebuilding steel freight and passenger cars.

Description of Shop.—The new shop (fig. 2) was located adjoining the wood-freight-car shop, facing a midway, upon either side of which were also located the supplementary shops, the midway being served with overhead travelling cranes. It is a steel-frame structure, with steel columns carried on concrete piers, the lower foundations walls being of concrete, 24 in. thick to the ground level, and 20 in. thick to a height of 2 3/4 ft., above which the walls are of red brick and 16 in. thick. The sash frames are of steel, the total sash area being approximately 40% of the total wall space. The

roof is carried on steel trusses, with ample skylight area. The floors are of 4 in. concrete, with a top surface of $\frac{3}{4}$ in. mastic.

There are three main divisions to the shop. The front one, facing the midway, and occupying the entire front, is the machine section, consisting of two 100-ft. bays, running parallel to the midway the one adjoining the midway being 209½ ft. long, while the inner bay is 182 ft. long. Each bay is served by a 10-ton electrically operated crane of the open-lattice-work type, having a span of 96¼ ft., and a height to base of rail of 28½ ft.

The freight-car erecting section, in the rear of the machine section, is 72 ft. wide and 415 ft. long, and was originally equipped with one 10-ton travelling crane, having a span of 67½ ft., and a height to base of rail of 27 ft. An additional crane of similar capacity has since been installed in this section. Situated also to the rear of the machine shop is the passenger-car erecting section, consisting of four bays, having a total width of 110 ft. These four bays, with the 72-ft. freight-car bay, complete the full width of the back of the machine shop. Each

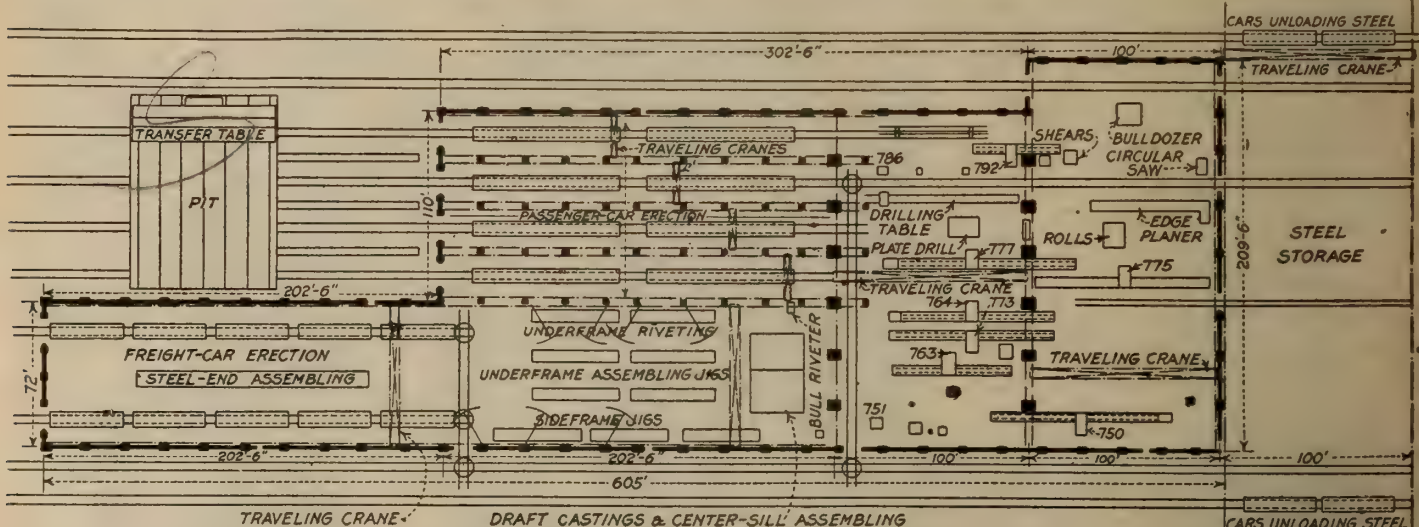
standard-gauge track connecting by turntables with three tracks running into the machine shop.

The crane facilities are unique, in that the whole area of the shop is traversed by electrically operated travelling cranes, so arranged that it is possible to install an unusual number, and yet maintain for each crane complete freedom of operation at all times. In this instance the crane arrangement was the deciding factor in the shop layout. It was decided that the machine section of the shop should be independent of the erecting sections, so far as crane service was concerned, and for this reason the crane runways in this section were installed in a direction transverse to those in the erecting shop. This arrangement made it possible to equip the two machine bays with separate cranes, each having a wide range of action with no interference. The machine layout is arranged with the view of relieving the overhead cranes to the greatest possible extent. This applies particularly to the handling of the larger members, such as center and side sills, which are required to pass over two punching machines situated in the different bays. As the first operation is com-

forward in the direction of the erecting shops, backward movement being carefully avoided, thereby reducing material handling to a minimum.

The high-speed punches are belt-driven, direct from motor to flywheel, gears being dispensed with. Clutches are of the 6-point type. The heads are equipped with two punches, which are controlled by gag levers. These machines are well adapted for punching the smaller plates, for which metal templets are made up and into which holes are drilled. By inserting a pin or gauge in each successive hole, and butting the plate against the pin, the desired spacing is obtained. In certain classes of work the operator can move the material fast enough to catch every hole with the punch running at the rate of 60 strokes a minute.

An unusual plan was followed as regards the installation of machines for heavy punching. The usual practice had been to install a small number of high-capacity machines, for the punching and slotting of the sills, side plates, and similar members, necessitating frequent changing of dies and templets, with further limitations in the event of break-



Steel car shop, Angus shops, C.P.R., Montreal.

bay of the passenger-car section is provided with a separate 2-ton travelling crane having a span of 24 ft. 10 in., and a height to base of crane rail of 21 ft.

Along the entire front of the shop, between it and the midway, there is ample provision for storing material. This storage yard, shown in fig. 3, is 100 ft. wide, and is served by a 10-ton crane, whose span and height are identical with those in the machine section, in anticipation of future shop extension. This crane runway extends beyond the shop limits and spans several tracks where cars of material can be readily switched and unloaded.

Through the freight-car erecting shop, entering from the rear end, are two standard-gauge tracks, 18 ft. center to center, which extend the full length, but do not enter the machine shop. Outside the shop, and parallel to the south wall, a standard-gauge track connects with a track on the midway, through turntables. This track is used for delivering the car trucks from the truck shop to the final assembly tracks. Through each of the passenger-car erecting bays there is a standard-gauge track leading in from the rear of the shop, also a transfer table for moving the cars during the various stages of completion. Through the center of the material storage yard, there is a

pleted the sills are transferred to the second machine, by special devices, independently of the overhead cranes. On completion of the machining operations, the sills are skidded over to the assembling trestles in the erecting shop, without assistance from the overhead cranes. The two cranes in the freight-car erecting shop, operating on the same runway, are entirely free from machine-shop handling, and as the first one is assigned to the preliminary assembly positions and the second to the final assembly positions, there is no overlapping or interference. The crane facilities in the machine and freight-car erecting shops will be better appreciated if one will endeavor to imagine four cranes on a single runway attempting to handle an equivalent amount of work.

The machine shop is equipped with the following machinery: 4 automatic spacing punches, 5 coping punches, 5 high-speed punches, 2 horizontal punches, one 7½ ft. gate shear, one angle shear, one 36-ft. plate-edge planer, one 30-in. circular saw, one 30-in. metal band saw, one 7-ft. plate roll, one 10-ft. brake, 1 bulldozer, 2 special plate-drilling machines, and miscellaneous drill presses, all driven by independent motors. The arrangement of the machines is such that the material after each operation moves

downs. It was therefore decided to overcome these handicaps, by installing four automatic spacing punches of moderate capacity, to obviate the expense and delay of die changing and double handling, and as the five additional coping punches are duplicates of those used in the automatic spacing tables, replacement can be made with but short delay should they become disabled.

Machining Operations.—The storage yard in front of the shop is used for storing the larger members, such as sills, cover plates, side plates, etc. The smaller parts such as the posts and braces, bolster and cross-bearer diaphragms, etc., are made by bulldozers and hydraulic presses in the blacksmith shop. The machines are served by narrow-gauge service tracks, running from the material storage yard, special care being taken to unload the material close to the track by which it will enter the shop. The progress of material through the machine shop is as follows: Center sills and side-sill channels are loaded by overhead cranes, and brought into the shop on service lorries, and deposited on trestles opposite the traveller at rear of center- and side-sill web-spacing punch, no. 775. Two air-operated traversing jacks lift the sills in pairs, and place them on the traveller rollers, ready to pass through

the machine. On the far side of this punch, as shown in fig. 4, is an elevated runway, carrying the traveller head which grips the sills with its projecting jaws and automatically spaces the punching. Along the traveller runway, steel templates, with projecting pins, engage a trip lever suspended on the head of the traveller, close the electric circuit, arrest the travel of the head, and close the circuit of the punch control; the punch then com-

pletes the operation. After passing through this machine, the sills are released from the jaws of the traveller, lifted by jib cranes as shown in fig. 4, and deposited back to back on the rollers of sill-flange spacing punch no. 777, the first and second operations in pairs. In all of these operations the passage through the machines is rapid, and the accuracy of the spacing mechanism is such that the punching error is slight, and far less than it would be were each

dies shown in fig. 5 are used to shear the ends to shape and punch the group of holes in one operation. The bolster cover plates and diaphragms are machined in a similar manner, the cover plates being passed over the spacing punch and the diaphragm flanges punched in one of the coping punches, equipped with special dies as in fig. 6, for punching the flange holes in one operation. During these operations the machine is relieved



Fig. 3. Storage yard, along front of steel car shop.



Fig. 4. Center and side sill web spacing punch.

pletes the operation. After passing through this machine, the sills are released from the jaws of the traveller, lifted by jib cranes as shown in fig. 4, and deposited back to back on the rollers of sill-flange spacing punch no. 777,

the first and second operations in pairs. In all of these operations the passage through the machines is rapid, and the accuracy of the spacing mechanism is such that the punching error is slight, and far less than it would be were each

of excessive load, by varying the length of the punches, resulting in the holes being punched consecutively. The usual practice for freight-car work is to punch rivet holes to a diameter not exceeding that of the rivet, and, when the parts

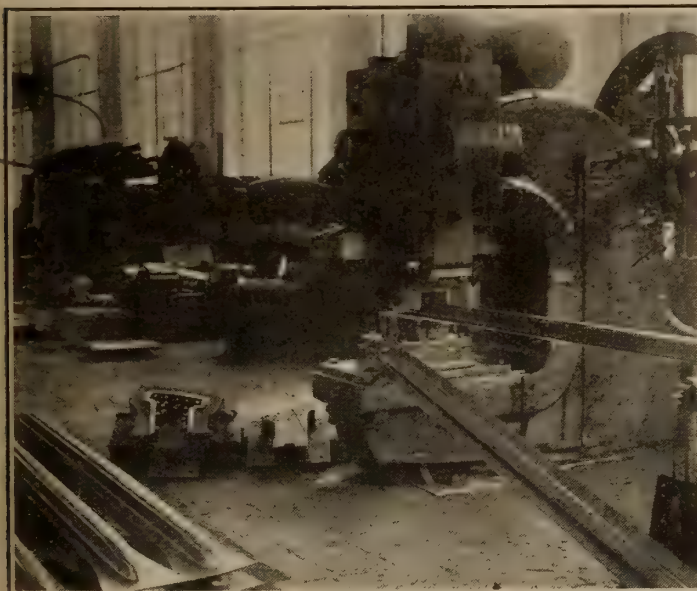


Fig. 5. Machine for shearing and punching ends of side posts and braces.

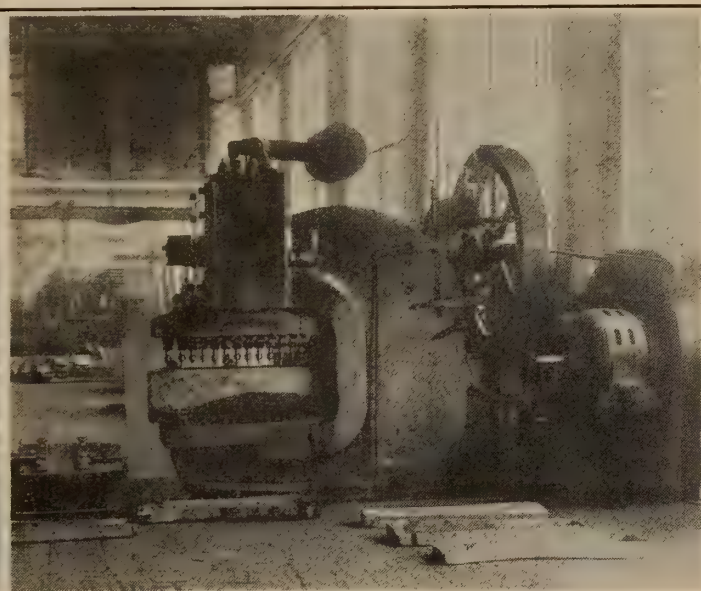


Fig. 6. Coping punch for machine bolster, cover plates and diaphragms.

which are placed directly opposite the delivery end of the web punch. On completion of the first operation, the sills are disengaged from the head clamp, and pushed back over the rollers to the starting point, where they are again turned over by a special device attached to the jib cranes, and passed through the machine for the second operation on the opposite flanges. The sills are then lifted by the travelling

hole marked off and punched independently.

There are certain parts which cannot be handled satisfactorily on the spacing punches, yet the punching must be equally accurate, or otherwise much of the benefit obtained from the spacing punches is lost when the parts are assembled. The machining of the ends of the side posts and braces is an example of this kind. In this case the special combination

are bolted together, to ream the holes to a size not exceeding that of the rivet by more than 1-16 in.

Jig method of assembly.—The erecting of steel-frame box cars by the jig method was originated at Angus shops. By this method the underframe, side frames, and end frames are assembled on jigs, as complete units ready for the final assembly of the car. The jigs consist of stands or cradles, by means of which the

various members are accurately placed, and held in proper relation to each other until they are riveted together. The advantages of this method are manifold. As each member lies flat in the jig, the drawing together of the parts is reduced to a minimum, wedge bolts being used extensively for this purpose, as they can be rapidly applied. A complete unit being assembled in one operation, the possibility of a cumulative error is avoided.

and the draft castings are riveted on by a compression riveter, as shown in fig. 7. The individual sills are then moved across to a position on the left, where the two center sills are assembled and riveted with bolster center castings and separators in position. The sills are placed on stands, on which are 4 fixed pins, corresponding to 4 rivet holes in the sills at the center line of bolsters. By placing the sills flange down on these pins, per-

crane then places the center sill in position, to which are attached the bolster and cross-bearer diaphragms with their cover plates and center-sill cover plate complete, after which the assembly is bolted together and the holes reamed ready for riveting. The underframes are then swung over by the overhead cranes to the riveting jigs on the right, which are constructed similar to those used for assembling, thereby maintaining the pro-



Fig. 7. Compression riveter, for riveting draft castings to center sills.

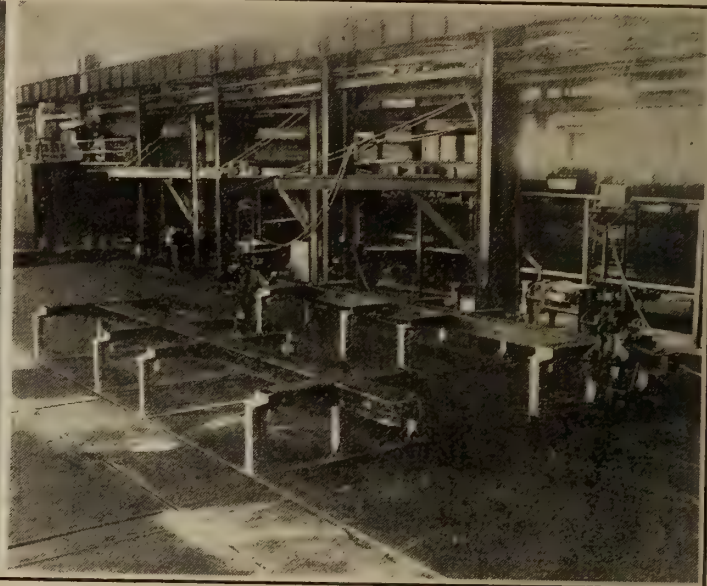


Fig. 8. Jigs used in assembling underframes

The jigs dispense entirely with checking for squareness, alignment, and location of connection holes, thereby simplifying the final assembly to a considerable extent.

Before any of the parts are assembled,

fect alignment of the two sills is assured, which simplifies the application of cover plates later on. The draft gear is also applied in this position.

The next step is the assembling of the underframes, and as this a lengthy op-

per alignment. Each riveting position is equipped with two 50-ton compression riveters suspended from swinging jib cranes, the posts of which are in line with columns to the right. The crane jibs are 21 ft. long with runways for air

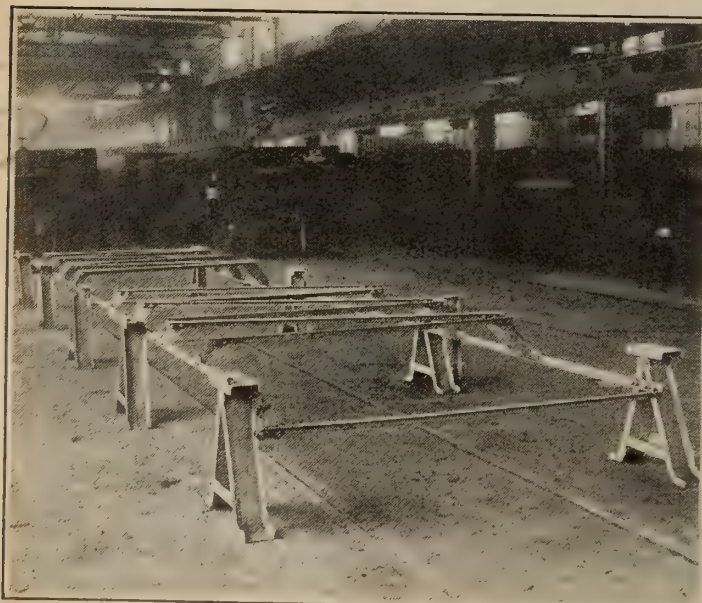


Fig. 9. Jigs used in assembling side frames.

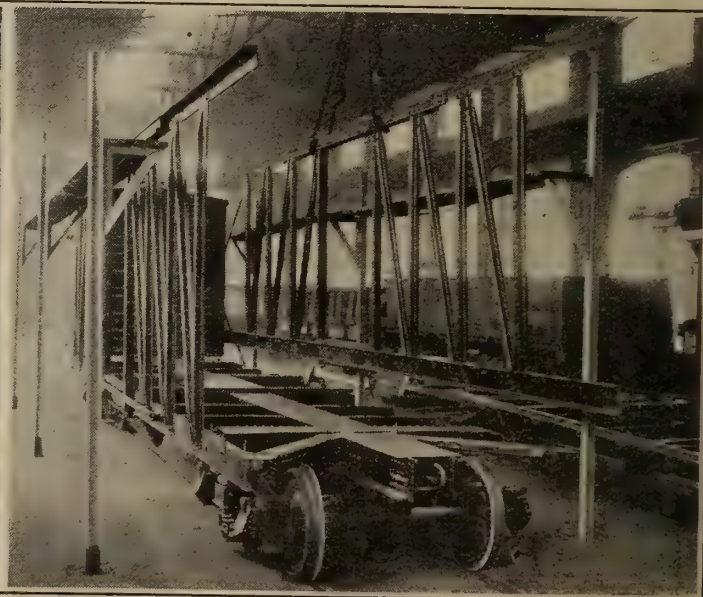


Fig. 10. Placing side frames in position.

all concealed surfaces are painted to prevent corrosion.

The center-sill channels, after passing through slot-punching machine no. 763, are skidded from the idler rollers to trestle just inside the erecting shop, where the draft castings are temporarily bolted on and the holes reamed ready for riveting. An electric hoist, operating on a runway below and clear of the overhead cranes, swing the sills into position,

eration, four positions are assigned for the purpose as indicated in fig. 2. These jigs, as shown in fig. 8, consist of 4 steel cradles, located at bolster and cross-bearer centers, and so arranged that each member of the underframe is held in proper alignment, and at centers that will coincide exactly with connections on the side frames. The bottom cover plates of the bolster and cross-bearers are first placed on centering pins; the overhead

hoists, the suspension mechanism being so arranged that the riveters can be tilted to drive the rivets in the inclined bottom flanges of the bolster and cross-bearers, which otherwise would have to be driven by an air hammer. The compression riveters were specially designed on the scissors principle, with a thin nose to permit of the top and bottom rows of rivets being driven without turning the underframe to complete the operation.

The side frames consisting of the side sill, side-plate, post, braces, door posts, and track, are assembled as a unit on a jig frame situated abreast of the under-frame jigs. This jig, as shown in fig. 9, consists of channel-iron stands, the four corners ones of which are capped with short sections of channel iron, in which are holes for locating exactly the side sills and plates. The stands on either side are tied together with angle bars,

the fourth position the end ladders, roof-frame brackets, and other parts are applied, the ends as completed being then placed opposite the final assembling position.

The final erecting.—As the trucks are assembled and painted, they are delivered from the truck shop, and enter the erecting shop by the side door immediately ahead of the underframe and side-frame jigs, where they are turned on a turn-

safety appliances, brake rigging, couplers uncoupling rods, etc., are applied, the remainder of the riveting completed, and the entire frame, as shown in fig. 11, is then sprayed with the priming coat of paint ready for finishing.

Finishing the car.—The steel frames are switched each day to the wood freight-car shop, where the decking, sheathing, roofing and doors are applied, and the painting operations are complet-

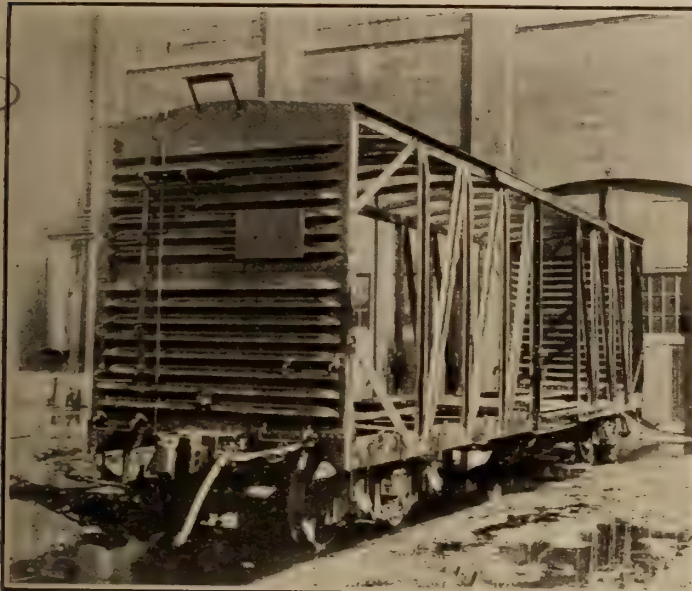


Fig. 11. Car with steel work completed and ready for finishing.

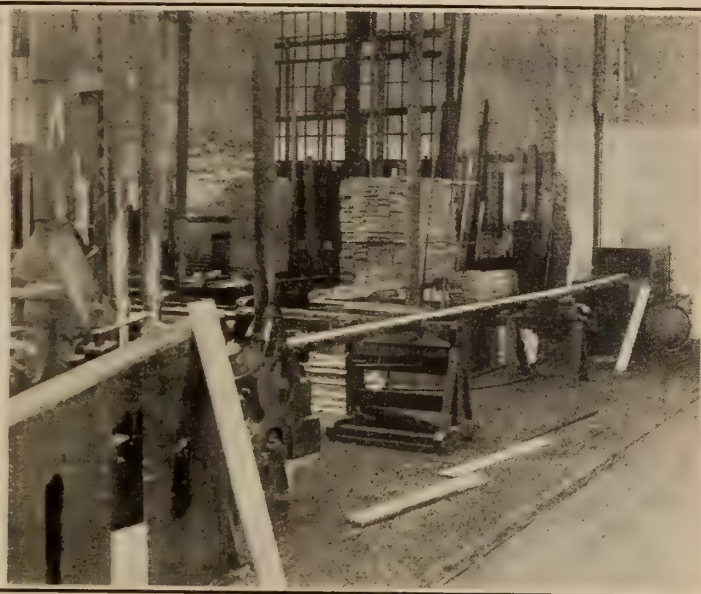


Fig. 12. Boards leaving matcher and passing automatically through painting machine.

which carry additional cross-bars, upon which the various members of the side frames are placed in proper relation to each other. In this position the side frame is temporarily bolted, reamed, and riveted ready for the final assembly posi-

table and placed in position on the assembling track. The underframe completed in the riveting jig is then lifted by the overhead crane and placed on the trucks, the slings are released, and a steel end is next placed in position, and bolted on

ed. The decking is of 1¼ in. red pine, and the sheathing of 1½ in. Douglas fir, both having tongued-and-grooved joints. High-grade lumber, free from knots, checks, or cracks, is selected for this purpose, and is then kiln dried, the mois-

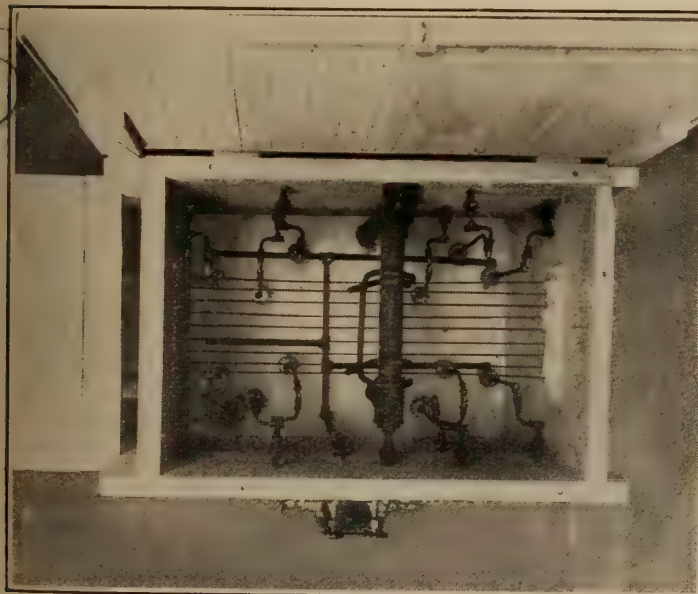


Fig. 13. Interior of painting machine from above.



Fig. 14. Car completed and ready for service.

tion. Originally the end frames were assembled on jigs similar to those used for the side frames, but in recent years the end-post construction has been replaced by corrugated-steel ends. These steel ends, and the end sills, are assembled on trestles located between the final assembling tracks, and when temporarily bolted together they are skidded to the second and third positions, where they are then reamed and riveted. In

the end farthest away from the side-frame jigs; the side frames are then placed in position, as in fig. 10, and finally the second end, along with the center and side-sill cross-ties. The brake-cylinder reservoir and piping are also applied at this time.

The car is then moved, by car haul, to the second position, where the assembled members and the roof framing are riveted in place. In the third position, the

ture content being carefully limited, in order to prevent the possibility of further shrinkage later on; the only objection of any importance raised against the steel-frame box car, as compared with other box cars, having been one arising from improper drying of the sheathing. After being machined, the sheathing is again examined, and any boards checked or cracked in drying are set aside and use for lining the ends of the car.

Investigation of Properties of Chilled Iron Car Wheels.

Before leaving the planing mill, the sheathing, roofing, and running boards receive their priming coat of paint, in a painting machine recently developed at the Angus shops and which differs from those in use elsewhere. The boards, on leaving the matcher, pass automatically through the painting machine, as shown in figs. 12 and 13, where they are sprayed by a series of nozzles, which can be set in any desired position according to the surfaces required to be painted. The paint is drawn up through suction pipes from the bottom of the box, by means of air jets blowing across the nozzles, and as ejected it is atomized by the air, and blown on to the boards in the form of fine spray. The amount of paint to be applied is controlled by air valves, or by regulating the speed at which the boards pass through the machine. No brushing or wiping is necessary. The boards on leaving the machine are piled on trailer trucks, and distributed by tractors to the shops when dry. These machines will paint at the rate of 200 running feet a minute, which is about as fast as the boards can be conveniently piled for drying.

The first operation in the wood freight-car shop is to apply the decking, the joints of which are previously coated with a thick paint compound, as are also the ends of the boards making contact with the bottom boards of the side sheathing previously applied. The side sheathing, which has already received the priming coat of paint, is next applied, and to ensure that the sides of the car will be watertight, the joints are coated with paint compound, after which they are wedged down into position and bolted to the framing. The end lining is then applied in a similar manner, but vertically. In the succeeding operation the roof is applied, the boards and metal sheets of which have previously been primed. After the doors are hung in place and the remainder of the safety appliances have been installed, the car is given two additional coats of paint and stenciled, when it is complete and ready for service, as shown in fig. 14.

The foregoing paper was read at the American Society of Mechanical Engineers railway session, at its spring meeting in Montreal, May 29.

The Canada Club, London, Eng. held its annual dinner, April 24, under the presidency of Sir George MacLaren Brown, European General Manager, C.P.R. Among those present were P. A. Clews, General Freight Agent, Canadian National Rys., London; F. W. Cowie, Consulting Engineer, Montreal Harbor Commissioners; D. B. Hanna, ex President, Canadian National Rys., Toronto; Lt. Col. R. W. Leonard, formerly Commissioner, National Transcontinental Ry., St. Catharines, Ont.; Sir William Mackenzie, President, Toronto Railway Co., Toronto; A. J. Mitchell, ex Vice President (Finance), Canadian National Rys., Toronto; W. G. Murrin, Assistant Manager, British Columbia Electric Ry., Vancouver; W. Phillips, European Manager, Canadian National Rys., London; T. J. Smith, European Freight Manager, C.P.R., London.

Railway Lands Patented.—Letters patent were issued during March for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows,—

	Acres
Canadian Northern Ry.	14,104.86
Canadian Northern Western Ry.	6.02
Canadian Pacific Ry.	7.47
Total	14,118.35

The Illinois University Experiment Station has issued a second bulletin on its investigation of the properties of chilled iron car wheels, dealing with wheel fit, static load, flange pressure, strains and ultimate strength of flange. The bulletin presents two additional phases of the investigation which had for its object the determination of the strains which may occur within a car wheel and the limitations of present designs, with the view of improving the chilled iron car wheel and making it more satisfactory under present and future service requirements. The work was done under a co-operative agreement between the Association of Manufacturers of Chilled Car Wheels and the Illinois University Engineering Experiment Station. The bulletin deals with the strains in arch plate chilled iron wheels which originate from, first, wheel fit, second, static loads, third, flange pressure and, in addition, the possibility of increasing flange strength by adding metal to the flange and tread is determined.

The first portion of the bulletin gives the strains that are developed when mounting a wheel on the axle. These are of large magnitude, and are worthy of very careful consideration. When they are measured a static load is placed upon the wheel increasingly, by increments of a few thousand pounds until 32,000 lb. is reached. The combined stresses due to pressing on the axle and vertical load are then determined. A side pressure is then placed upon the flange and measurements taken to determine the combined result of stresses developed from the three sources. It is shown that the stresses which are developed from load and from side pressure are very small in comparison with those which are developed from pressing on the axle and those which are developed by heat from the brake shoe. The latter part of the bulletin refers to increasing the strength of the flange. The present design of flange was developed when car capacities were very small, and each time that the capacity of the cars increased, the working stresses in the flange are increased, with a corresponding reduction in the factor of safety, and while the flanges for 30 and 40-ton cars, and perhaps 50-ton cars, are now satisfactory, it is certain that additional strength would be welcomed, and it is probably necessary in the 70-ton cars if adequate safety is attained.

To prove definitely the relation between the strength of flanges of various thicknesses, wheels were cast having thin flanges for half of the circumference, and thick flanges for the other half. This eliminated variables except flange thickness. Some of the results were as follows:—

	Strength of Flange	
	Normal	Thickened
New wheel no. 158,510		
average	90,400 lb.	117,500 lb.
Increased strength.....		30%
New wheel no. 132,649		
average	74,900 lb.	94,600 lb.
Increased strength.....		30%
New wheel no. 158,506		
average	82,000 lb.	115,600 lb.
Increased strength.....		41%

The above indicates that there may be expected approximately a 30% to 40% increase in strength for new flanges when $\frac{1}{8}$ in. is added at the back. It is not as necessary that the increased thickness should apply when a wheel is new as when it is worn sharp. Under these conditions the following results were obtained:—

	Normal	Thickened
Wheel no. 132,648, ground approximately vertical.....	38,900 lb.	76,500 lb.
Increased strength.....		Nearly 100%
Wheel no. 158,521, ground to 1 in. thick.....	32,200 lb.	54,800 lb.
Increased strength.....		70%

It would hardly seem necessary to require physical tests to prove that a flange of thicker section would have greater resistance, but this has sometimes been questioned and the percentage of increase has been unknown, and it is well to have these quantities definitely fixed, in order that the campaign for increasing the thickness of flange shall be definite and irresistible. This campaign should now have no material obstruction in its way since the Railway Engineers' Association's track committee submitted the following report, which was unanimously adopted by the association several years ago: "The track committee is willing to agree that the flanges can be increased as recommended by the chilled car wheel people without any serious detriment from the track standpoint provided; that the wheels are in all cases mounted to $\frac{1}{8}$ in. additional spread gauge; that the allowable flange wear before wheels are removed be changed so that the wheels will be removed when the flange is worn to within $\frac{1}{8}$ in. of the present limit of removal; that more care be used in matching wheels on any given axle, on account of the reduction in play and the corresponding reduction in compensation from coning; that this flange width be confined to the flanges of 4-wheel freight car trucks; that this conclusion on the part of the track committee be not construed as an invitation to increase the axle load. With the above provisions it is believed that it will be unnecessary to make any difference in the width of the flange ways of frogs and crossings, or change the present method of track construction."

The bulletin also contains notes on the flange strength of worn out 850 lb. wheel running up to very high figures, some of them reaching 175,000 and, in fact, in this case, the breakage of the plate occurred before the flange parted.

Disposition of Unclaimed Carload Freight by Terminal Switching Roads.—The Railway Association of Canada has issued the following circular: "The following regulation has been approved by the association to govern the disposition of carload freight by terminal switching roads when refused or unclaimed by consignees: 'When carload freight received in switching service is refused or unclaimed by consignees, written notice (or advice by 'phone confirmed in writing on the same day) must be given by the switching road to the carrier road within 24 hours after refusal by consignees, in the case of refused freight, or, within 5 days after arrival, in the case of unclaimed freight. Cars will be held by the switching road for disposal orders from the carrier road. If disposal orders are not furnished within 10 days from date of notice to delivering carrier road, the switching road may return the car to the delivering carrier road, accompanied by all charges, including switching, demurrage, etc.'"

Lindsay Shops, Canadian National Rys.—A press report states that the Peterborough, Ont., City Council was advised May 8, by Sir Henry Thornton, that the C. N.R. shops at Lindsay, Ont. would not be moved to Peterborough, as had been reported.

Railway Operating Revenues, Expenses and Other Statistics for February.

The following comparative table for Feb., 1923 and 1922, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are not in all cases the same as reported in 1922.

The column headed "Canadian National" gives the figures for the combined steam railways in Canada, under the

Canadian National Ry. Co's directors' management, including the former Canadian Northern System, the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Provincial Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair Rivers.

The column headed "Canadian Pacific"

includes also the Montreal & Atlantic and Esquimalt & Nanaimo Rys.

The items under side headings 1 to 6, inclusive, include rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, baggage, parlor cars, etc.

Operating Revenues	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
Freight	\$21,106,755.51	\$21,278,938.74	\$10,202,763.14	\$10,240,209.52	\$7,658,677.23	\$8,103,408.74
Passenger	4,461,430.70	4,391,126.46	1,904,658.56	1,834,487.08	1,875,985.15	1,933,549.53
Mail	590,251.52	607,337.31	252,359.80	283,697.67	297,777.67	281,283.19
Express	893,147.95	968,478.54	353,675.32	451,286.66	446,977.12	445,631.94
Other freight train	7,104.71	4,922.20	4,000.00	Dr. 794.65	3,099.71	5,637.45
Other passenger train	363,228.63	338,247.12	138,894.72	122,425.25	206,445.18	202,949.41
Water line	44,180.17	40,445.27			44,180.17	40,476.03
All other	949,604.46	940,906.17	364,257.15	386,918.22	461,055.87	446,637.77
Total railway operating revenues	28,415,703.65	28,570,401.81	13,220,698.69	13,318,229.75	10,994,198.10	11,459,574.06
Operating Expenses						
Maintenance of way and structures	\$4,625,877.48	\$4,377,974.77	\$2,790,340.08	\$2,474,247.29	\$1,210,037.16	\$1,374,503.75
Maintenance of equipment	7,340,325.03	7,465,882.48	3,895,161.68	3,874,911.89	2,638,272.74	2,729,120.06
Traffic	1,019,577.59	931,015.57	350,691.89	283,874.71	603,465.49	568,289.28
Transportation	15,952,868.60	14,753,999.13	8,412,935.30	7,577,503.49	5,852,137.44	5,593,048.63
Miscellaneous operations	378,756.48	373,586.07	162,409.53	154,170.86	178,506.50	184,649.67
General	935,907.63	903,290.83	510,385.77	446,542.17	293,874.78	307,440.27
Transportation for investment	Cr. 16,184.68	Cr. 83,943.80	Cr. 16,170.78	Cr. 83,693.41		
Total railway operating expenses	30,237,128.13	28,721,805.05	16,105,753.47	14,727,557.00	10,776,294.11	10,757,051.66
Operating income						
Net operating revenue	Dr. \$1,821,424.48	Dr. \$151,403.24	Dr. \$2,885,144.78	Dr. \$1,409,327.25	\$217,903.99	\$702,522.40
Railway tax accruals	569,854.67	531,832.16	244,717.10	214,950.99	250,601.38	243,500.00
Uncollectible revenues	14,499.19	866.55	9,162.91	619.83		
Hire of equipment	Cr. 570,320.49	Cr. 318,522.42	Cr. 354,082.18	Cr. 351,768.83	Cr. 522,370.94	Cr. 211,603.46
Joint facilities rents	Dr. 114,487.48	Dr. 83,443.70	Cr. 19,132.51	Cr. 24,482.45	Cr. 7,492.50	Cr. 20,672.32
Operating income	Dr. 1,949,945.33	Dr. 448,992.23	Dr. 2,765,810.10	Dr. 1,248,646.29	497,166.05	691,298.18
Operating statistics						
Average miles of road operated	38,823	38,805	20,799.3	20,765.2	13,919.9	13,877.2
No. of tons carried (revenue freight)	7,853,246	7,218,189	3,297,876	3,027,815	2,070,842	2,019,257
No. of tons carried one mile (revenue freight)	2,051,211,665	2,012,089,558	1,018,187,851	1,008,599,772	758,819,858	774,825,140
No. of tons carried (all freight)	9,326,782	8,455,682	4,027,515	3,583,419	2,718,409	2,461,538
No. of tons carried one mile (all freight)	2,357,682,920	2,181,727,177	1,193,304,585	1,102,439,238	881,223,684	842,498,205
No. of revenue passengers carried	2,878,860	2,897,241	1,545,308	1,527,136	965,920	994,255
No. of revenue passengers carried one mile	131,905,520	147,824,753	67,481,404	66,578,033	64,285,511	62,650,314
*Freight train miles	4,478,654	4,321,420	2,290,189	2,253,877	1,655,323	1,570,096
*Passenger train miles	3,381,083	3,222,949	1,560,190	1,468,284	1,395,518	1,385,698
Total train miles (revenue and non-revenue)	8,866,141	7,744,623	4,031,778	3,858,105	3,165,584	3,009,130
Freight car miles—loaded	91,467,414	85,279,015	45,650,478	42,228,517	33,747,023	31,411,900
Freight car miles—empty	34,391,179	35,866,196	17,756,134	18,939,588	11,104,587	10,630,353
Passenger train car miles	21,962,881	20,520,429	9,915,758	9,090,333	9,077,885	8,875,702
Total amount of pay roll	\$18,015,497.94	\$16,646,496.17	\$9,980,572.32	\$9,370,035.19	\$6,442,437.69	\$5,913,847.10
Number of employees	151,028	140,835	85,228	80,459	53,735	50,127
Averages per mile of road operated						
Operating revenue	\$731.93	\$736.26	\$635.63	\$641.37	\$789.82	\$825.78
Operating expenses	\$778.85	\$740.16	\$774.34	\$709.24	\$774.16	\$775.16
No. of tons moved one mile (revenue freight)	52,835	51,851	48,952	48,571	54,513	55,834
No. of tons moved one mile (all freight)	60,729	56,223	57,372	53,090	63,307	60,711

*Averages per freight train mile						
Freight revenue	\$4.71	\$4.93	\$4.46	\$4.54	\$4.63	\$5.16
No. of tons of freight (revenue freight)	458.0	465.6	444.6	447.5	458.4	493.5
No. of tons of freight (all freight)	526.4	504.9	521.1	489.1	532.4	536.6
Loaded freight cars	20.4	19.7	19.9	18.7	20.4	20.0
Empty freight cars	7.7	8.3	7.8	8.4	6.7	6.8

*Averages per passenger train mile						
Passenger train revenue	\$1.87	\$1.96	\$1.70	\$1.83	\$2.03	\$2.07
Passengers carried	44.9	45.9	43.3	45.3	46.1	45.2
Passenger cars	6.5	6.4	6.4	6.2	6.5	6.4
Average operating expenses per train mile	\$3.69	\$3.71	\$3.97	\$3.81	\$3.40	\$3.57
Average length of haul (revenue freight), miles	261.2	278.8	308.7	333.1	366.4	383.7
Average passenger journey, miles	52.8	51.0	43.7	43.6	66.6	63.0
Average tons per loaded freight car	25.8	25.6	26.1	26.1	26.1	26.8
Average freight receipt per revenue ton miles	1.029c	1.058c	1.002c	1.015c	1.009c	1.046c
Average passenger receipt per passenger per mile	2.937c	2.970c	2.822c	2.755c	2.918c	3.086c
Ratio of pay roll to operating revenues	63.4%	58.3%	75.5%	70.4%	58.6%	51.6%
Ratio of pay roll to operating expenses	59.6%	58.0%	62.0%	63.6%	59.8%	55.0%
Ratio of operating expenses to revenue	106.41%	100.53%	121.82%	110.58%	98.01%	93.87%

*Contains a proportion of mixed train miles.

Ontario Railway and Municipal Board Expenses.—The estimates for the year ending Oct. 31, 1924, passed by the Ontario Legislature recently, contained the following items for salaries and expenses: Chairman, \$7,000; Vice Chairman, \$4,500; Member of the Board, \$4,000; Supervisor of Telephone Systems,

\$4,000; Secretary, \$3,300; Inspector of Telephone Services, \$2,400; Court Reporter, \$2,000; Consulting Engineer, \$2,000; Clerk, \$1,500; Clerk of Street Railway operations, \$1,500; 2 senior clerk stenographers at \$1,100, \$2,200; 2 clerk stenographers at \$1,050, \$2,100; Traffic Expert, \$900; Experts, \$6,000.

Shaughnessy Building, Montreal.—Senator Dandurand stated in the Senate, recently, in answer a question, that the Government had not entered into negotiations for the purchase of this building; that an offer had been received for its sale, but that no action had been taken.

Railway Operating Revenues, Expenses and Other Statistics.

The table on the preceding page gives the gross earnings, operating expenses, net earnings or deficits, and other operating statistics, for Canadian railways as a whole, for March, compared with March 1922, and separately for the Canadian National and Canadian Pacific Rys. The table on another page gives the revenue, expenses, and net earnings or deficits of the Canadian National, Canadian Pacific, and Grand Trunk Rys. for February, compared with Feb. 1922. These tables show that the Canadian railway industry did not occupy an enviable financial position during the first quarter of the year and the results of operation for that period suggest that railway employees who are looking for wage increases, and numerous agitators looking for freight rate reductions, are engaged in quests for something which is going to be pretty hard to secure.

In February, when the operating ratio for the railways collectively was 106.41 compared with 100.53 in Feb. 1922, the railways carried more freight than in Feb. 1922 and got less for doing it. They carried more passengers than in 1922, and derived a little additional revenue from the service, but not enough to prevent the total gross for Feb. 1923 being less than in Feb. 1922. While the total revenue was less, operating expenses were larger, the Feb. 1923 expenses being \$1,515,323 more than in Feb. 1922, causing an operating deficit of \$1,821,424, and the unfavorable operating ratio mentioned above. The Canadian railway industry has had operating deficits in February for four years, and it is commonly looked upon as a poor month, but the disquieting feature of the situation is that, while it was universally agreed that Feb. 1922 was about as poor a month as could be expected, Feb. 1923 was even worse. The operating statistics for the two large roads show the causes contributing to the poor result secured by the roads as a whole, and an analysis of them shows that both the large systems experienced conditions which contributed to the collective result. On the Canadian National, freight traffic increased slightly, but freight revenue decreased slightly; passenger traffic and revenue increased somewhat, but not enough to wipe out the loss in freight revenue, and with the operating expense increased by 9.4%, the Feb. 1922 operating ratio of 110.58 was exceeded in Feb. 1923 with a ratio of 121.82. On the C. P.R., freight revenues fell off 5.4% and passenger revenue decreased 3%, making a 4% decrease in total revenue, which, in combination with a slight increase in expenses, brought the operating ratio from 93.87 in Feb. 1922 to 98.01.

In March the C.P.R. had to pay out \$178,929 more in operating expenses than in March 1922 to derive gross revenues which were smaller than in March 1922 by \$261,864, the result of this being that net was reduced by \$440,793 for the month. Rate relationships being considered, it seems safe to assume that the C.P.R. hauled as much freight in March this year as in March 1922, and the difference in the results secured does not indicate desirable present conditions in the railway industry. The company's statement for the first quarter of the year, like that for March, also shows a decrease in net, and this despite a healthy increase in gross. January was a good month, but the de-

creases in net earnings in February and March wiped out the January increase. The increase in gross for the three months was \$1,405,247, but operating expenses increased \$1,768,486, and the reduction in net earnings was \$363,238.

The original portion of the present Canadian National system, i.e., the Canadian Northern, Canadian Government, and Grand Trunk Pacific lines had a much poorer month in March 1923 than in March 1922. The March 1923 gross earnings were \$964,442 less than in March 1922, and operating expenses were \$250,524 more, the months operating deficit, \$2,194,411, being \$1,214,965 more than in March 1922. Like the C.P.R. the original C.N.R. lines had a fine month in January, when the operating loss was but \$1,156,377, compared with \$2,223,162 for Jan. 1922, but in Feb. the operating loss was \$2,971,377 compared with \$2,375,829 in Feb. 1922, and this, in combination with the March results mentioned above resulted in the operating deficit for the first three months of 1923 being \$743,728 more than the first three months of 1922.

The Grand Trunk portion of the Canadian National system had a much better March than either the original Canadian National line or the C.P.R., this applying both to the G.T.R. system as a whole and to its Canadian lines. For the whole system, the gross revenue increase, while accompanied by an increase in operating expenses, was greater than the latter, with the result that net earnings were increased substantially. For the first quarter also, the G.T.R. system shows improved net earnings compared with the first quarter of 1922. This however does not apply to G.T.R. lines in Canada; as while in March net earnings for the Canadian lines were \$224,255 more than in March 1922, for the first three months of 1923 the net was \$307,745 less than in the same period of 1922.

The lesson to be derived from a study of the figures presented is obvious. The revenues derived by the railways for the performance of transportation service are not sufficient to bear a proper relationship to the expense of providing the service. The first part of 1922 was a trying time for the railway industry, but the first quarter of 1923 had even less favorable results. It may be said that trade conditions in February and March were not such that good traffic resulted, but more traffic was handled in Feb. 1923 than in Feb. 1922, and it is not likely that the March 1923 traffic was much, if any, smaller than that of March 1922. Preliminary statements for April and the first part of May show that the railways have been deriving larger gross earnings than in the corresponding periods of last year, which is a favorable sign; how great a proportion of those gross earnings will go to swell the net, however, remains to be seen. It is to be hoped that it will be larger than in the immediate past.

It must surely be evident to people who are agitating for rate reductions in various parts of the country, that as things stand the railway industry is in no position to grant them, and it should be equally evident to railway employees who seek higher wages, that, with present transportation rates the railways cannot grant them. Railway transportation is a commodity which must be made just as cheap as it possibly can be,

for the benefit of all industries, and railway employees must not bear, through lower wages, an undue share of railway deficits, but everyone should recognize, that transportation cannot be furnished at less than cost over any considerable period of time. There is a limit to the speed with which railway operating efficiency, as marked by improving equipment and methods secured only with great capital expenditure, can increase, and efforts to reap the benefits of increasing operating efficiency, in advance of the time when such increase has become a reality, will tend to prevent it becoming a reality. This country is just beginning to get on its feet, industrially and economically speaking; but the railways are getting altogether too small a share of the prosperity which is very hesitatingly making itself evident, and for the simple reason that railway, industrial and individual prosperity are interrelated and move together if wage increase and rate reduction agitation act to postpone the coming of reasonably prosperous times for the railways, it will most certainly be found to have the same result for all concerned.

Transportation Events of Twenty-Five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for June, 1898.

J. W. Swan appointed Official Photographer, G.T.R.

C.P.R. starts building baggage cars without platforms or hoods.

General Baggage Agent Quick, G.T.R., issues revised rules and regulations.

Construction started on first 35 miles of Winnipeg and South Eastern Ry.

Atlantic & Lake Superior Ry. opened from Metapedia to New Carlisle, Que.

E. D. Boswell, President, Temiscouata Ry., dies suddenly at Riviere du Loup.

G. A. Browne succeeds Alex. Milloy, as Traffic Manager, Richelieu & Ontario Navigation Co.

G.T.R. promulgates new operating rules, practically those of American Railway Association.

C.P.R. adopts consolidation locomotive, with compound cylinder, as standard for freight service.

G.T.R. notifies agents to stop taking large amounts of U.S. money, as bankers will not accept it.

C. E. A. Carr, Superintendent, London Street Ry., also appointed Superintendent, Montreal Park & Island Ry.

Mackenzie, Mann & Co. withdraw from contract with British Columbia Government, to build railway from coast to Teslin Lake.

Wm. Mackenzie, of Toronto, goes to England to finance Ontario & Rainy River, Winnipeg, and South Eastern & Dauphin Railways.

Intercolonial Ry. converts 3 passenger cars into dining and restaurants cars, with counter for passengers not wanting to sit down to a dining car meal.

J. Osborne, Assistant to Vice President, C.P.R., devoting considerable time to rolling stock matter, with oversight of shops at Farnham, Montreal and Perth.

E. A. James, theretofore Chief Dispatcher, C.P.R., Winnipeg, appointed Superintendent, Winnipeg to Brandon, and tributary branches, succeeding J. Murray, appointed Track Inspector, lines west of Fort William.

Canadian Pacific Railway Co's Annual Meeting.

The C.P.R. Co's 42nd annual meeting at Montreal, May 2 was presided over by Lord Shaughnessy, Chairman of the company. E. W. Beatty, K.C., in moving the adoption of the report for the calendar year 1922, which was published fully in Canadian Railway and Marine World for May, said:—

The active business conditions which developed at the end of last year have continued during the first three months of this year, involving a moderate increase in gross earnings over the same period of 1922. Traffic would undoubtedly have been much larger, and a freer movement would have ensued, were it not for the extraordinarily severe winter, particularly in Canada. These conditions were accentuated in traffic consequences by the slowness of the return of Canadian cars from the United States and embargoes placed by our connecting U.S. railways due to unsatisfactory conditions on their lines. With the termination of winter there has been an appreciable improvement in traffic, which is being felt by all Canadian companies. The net results during the first three months were of course, seriously affected by the severe weather conditions under which the company's operations were conducted.

As intimated in the annual report, the results of the operations for 1922 were, under the circumstances, satisfactory, especially in view of the adverse business conditions which existed during practically the first nine months of the year. The imposition of the lower scale of rates, under The Crow's Nest Pass Act, of necessity materially reduced the revenues from the grain traffic, which would have been extremely disappointing were it not for the extraordinarily heavy movement during the fall months in consequence of the large crop. It is apparent, however, that these rate reductions have had results not fully appreciated by Parliament when re-enacting the legislation, in that they have contributed to an uneven rate structure, which can only be removed when operating costs are lower and traffic heavier, and when removed will have to be in such a way as to first relieve that traffic which has not as yet experienced equivalent lower rates. If the suggestion made by the transportation companies last year had been adopted, freight rate reductions could then have been proceeded with, as circumstances warranted, in an orderly and uniform way, and without any dislocation of or discrimination against commodity traffic generally.

It is gratifying to note that the prospects for the immigration into Canada of the class of colonists that is so urgently needed to assist in developing the country's natural resources are much brighter than they have been in the past two or three years, and heavier traffic from Great Britain and northern Europe is indicated by the largely increased western movement on the company's ships during the first four months of this year. The agreement lately completed between the Imperial and Dominion Governments for joint action under the Empire Settlement Act justifies the expectation of still greater numbers of colonists from Great Britain. The countries of northern Europe, particularly Switzerland, Holland, Denmark, Norway and Sweden, which were neutral during the war and which, therefore, suffered no loss of man-power, owing to war activity, and from which emigration dur-

ing the war ceased, find themselves overpopulated and Switzerland and Holland have already found it necessary to follow the lead of Great Britain in voting public money to aid in the emigration of their nationals. The Government has recently, through the removal of restrictions which prevented the entry into Canada of citizens of certain countries, opened the door to the admission of immigrants of the highest type, men not only trained to agriculture but artisans thoroughly skilled in their crafts, with a reputation for hard work and thrift which will place almost beyond question their success in Canada. I feel strongly that citizens of these countries may be assimilated into Canadian life with great advantage to this country. We have, in the past, obtained a large proportion of our colonists from the United States, but the general farming conditions, there particularly in the western portions of the U.S., in common with portions of western Canada, have not been entirely favorable during the past two years, and these conditions have checked the flow of agricultural colonists to western Canada. A careful survey of existing conditions lately completed justifies the expectation that we can now hope to again stimulate a steady influx to Canada of desirable colonists from the U.S., but this is naturally dependent upon improved agricultural conditions there. The system lately inaugurated, of obtaining from Great Britain and Northern Europe qualified farm laborers to assist Canadian farmers in carrying on their operations, is proving successful, and already some thousands of farm laborers have been obtained to fill applications filed by western Canadian farmers on a basis of wages and employment which warrants the hope that our western farmers will be enabled to produce their crops at a less cost than has been possible in the past, with the class of itinerant labor available from time to time. In spite of the slowness which has marked this country's grappling with the problems of immigration generally, a slowness which has been in marked contrast to the energetic and forward policies of other portions of the Empire, some progress has been made, and the conditions today are more satisfactory and more hopeful than at any time during the past four years.

The shareholders are aware of the proposed retirement of the company's note certificates on July 10 next, though they do not mature until March 2, 1924. The moneys required to effect the retirement of these certificates have been provided without any additional financing being necessary, and, upon it being accomplished, the deferred payments on lands and townsites, a portion of which have been held for the special investment fund, will be released for the company's general purposes. I have no doubt that it is as gratifying to the shareholders as it is to the directors that the retirement of these certificates will be effected without dislocation to, or strain upon, the company's finances.

The shareholders will, I feel, be also very gratified that the physical condition of the property has been thoroughly well maintained, in spite of manifold difficulties under which the company's operations have been conducted in the past few years. As I pointed out on previous occasions, this has been possible only through the provision in former years

of ample facilities, including rolling stock and motive power, and the extraordinarily high standard of maintenance to which the properties were brought by the expenditure of large amounts of money when financial and traffic conditions were favorable.

The operations of your steamships is becoming increasingly important, the company now having 15 passenger ships in regular service on the Atlantic and 4 on the Pacific, and 12 freight ships on both oceans. The prospects for improved business, particularly on the Atlantic, are good, and that on the Pacific, notwithstanding the acute competition which exists, should show progress during this year, especially if economic conditions in China and Japan become more favorable. Your company has been in the Pacific trade for over 30 years and bears a very high reputation in the Orient. The expansion of Canada's trade with China and Japan is of great importance, both to the country and to the company, and it is to be hoped that the Government and Canadian commercial interests will not overlook these opportunities, to which other countries appear to be so keenly alive.

With the completion of the consolidation of the Grand Trunk and the Canadian National Rys., the railway situation of Canada, which has over many years past been so disorganized, has now settled into a condition in which the wisdom of the policies adopted by former governments can be tested, and it can be ascertained whether they can be successfully administered, and without further exhaustive demands upon the country's exchequer. In this situation, and its effect upon transportation companies generally, your company is, of course, vitally concerned, and upon the extent to which political interference is eliminated or reduced will depend in a large measure the result of the experiment. If the chief executive of the National Railways, and his tried and able assistants, are permitted to administer the properties as a private enterprise would be administered, the people of this country, will, in a short time, know exactly what prospects of success confront their venture into public ownership. If, on the other hand, political considerations prevail, and a free hand is not given to these administering officers, there can be but one result, viz., the increasing of the country's financial burdens, which are already onerous enough to give grounds for apprehension.

As is always the case where a drastic departure from conditions previously existing, either in Canada or elsewhere, is made, new situations arise and new competitive methods are adopted, and it is scarcely to be expected that an appeal should not be made to sentiment by those who ask for support to the National Railways, but I do not anticipate that these appeals would succeed to the extent of being detrimental to the interests of this company, as they would involve a forgetfulness of the history of the country and the extent to which private enterprise, whether commercial, industrial or other, have contributed to the country's advancement. Fundamentally, private property and private enterprise constitute, in no less degree than public property and public enterprise, the wealth and business of the nation. Their interest is no less a national interest, and entitled in all respects to the same

measure of protection and favor at the hands of the Government. It makes little or no difference that the private enterprise may be in part or even entirely the property of British or foreign investors. Canada must for a long time depend upon foreign capital and must continue to afford it the same privilege as domestic capital. I do not mean to suggest that private enterprises which have been over ambitious in their conception have not failed, because they have, but in the main the prosperity and progress of the country have been contributed to by individual initiative and enterprise to a greater extent than in any other way. It must, of necessity, follow, that if the country is to expand in its commercial and industrial development, reliance must be placed upon individual and corporate enterprise. This in turn involves the support of British and foreign capital, a support which I would consider might conceivably be slow in forthcoming were it thought that political or government influence were such that the integrity of capital investment were jeopardized. I have, as yet, seen no indication that the Government of the day desires to take any other attitude than a judicial and impartial one as between the National Railways and this company, and it is of great importance that it should not, if the credit of Canadian enterprises is to be maintained, and foreign capital successfully invited to its support and expansion.

This company is Canada's largest property owner and largest tax-payer. No other corporation or citizen has a greater interest in the national welfare, nor contributes, I think, more to its advancement. Its railway was projected and constructed for the purpose of carrying out one of the terms of Confederation, viz., the construction of a transcontinental railway connecting the railways of eastern Canada with the seaboard of British Columbia, and the contract with the Dominion Government contains a provision for its perpetual operation. It can therefore justly claim to be in the truest sense a national work.

The purposes for which it was projected have been more than fulfilled. Thousands of miles of other lines have been added to the original undertaking, uniting the provinces of Canada; most of them pioneer lines, anticipating settlement and providing transportation facilities for remote districts. By its steamships it has provided for the foreign trade of Canada, and by its colonization work it has been the means of attracting many thousands of settlers. Its success in all these directions has brought other less direct, but at the same time substantial, benefits to Canada in the attraction of foreign capital and foreign enterprise.

Your directors lost their oldest colleague in the death of Mr. Angus in September last. He was the last survivor of the first board of directors of the company, and the value of his services over a period of 41 years can scarcely be over-estimated. As his term of office would have expired at this meeting, it will be necessary to elect a successor, and your directors have recommended the election of F. W. Molson, whose name will be added to the ballots when they are distributed.

The shareholders will be glad, though not surprised, to know that the morale of the Company's officers and men remains high and that their loyalty and efficiency are, as always, unquestioned.

The report was adopted, also the fol-

lowing resolution:—

Whereas it is in the view of the directors expedient that portions of the undermentioned branch lines be constructed in the near future, viz:—Kipp-Relaw Branch, Kipp to Bow River, 22 miles; Archive-Wymark Branch, Mileage 25 to 50, 25 miles; Tuffnell-Prince Albert Branch 50 miles. It is therefore resolved that the directors are authorized to proceed with the construction of the said portions of the said branch lines when in their opinion conditions warrant, and that to aid in their construction and equipment the directors are hereby authorized to issue and dispose of consolidated debenture stock to such an amount as they may deem expedient, but not exceeding in respect of any of the lines the amount which the company is or may be empowered by statute to issue.

The retiring directors, Sir Edmund Osler, Sir Herbert Holt and Col. F. S. Meighen were re-elected and F. W. Molson was also elected a director.

At a meeting of the board held immediately after the shareholders' meeting, Lord Shaughnessy was re-elected Chairman of the Company, E. W. Beatty, President, and Grant Hall, Vice President, and the following were appointed the executive committee:—E. W. Beatty, Grant Hall, Sir Herbert S. Holt, Sir Vincent Meredith, Bart., Sir Augustus M. Nanton, Sir Edmund B. Osler, Lord Shaughnessy.

The C.P.R.'s New Land Policy.

E. W. Beatty, K.C., President, C.P.R., made the following announcement May 10:—"The Canadian Pacific Ry. is at all times, accurately apprised of the tenor of the national mind, because it is, in itself, one of the largest land owners in the west, because, as a national organization, it is vitally interested in preserving prosperity throughout the Dominion; and because it knows from past experience that its acts have constituted precedent. It unfortunately knows that in the western provinces, increasing farm costs, together with low prices obtainable for farm products, have seriously affected those farmers not definitely and firmly established in the operations. The present position is due to several causes. During the war the high prices realized for farm produce, and bountiful crops obtained in 1915-16, induced expenditures by farmers for extra equipment, and increased land holdings, which, since the decrease in value of farm produce, without a similar decrease in wages or cost of living, together with crop failures in some districts, has resulted in a rapidly increasing burden of debt, and in the case of some 30,000 farmers holding land under contract for purchase from the company—through no fault of their own—they find themselves behind in their payments, and a certain amount of discouragement and depression has resulted, which, if unchecked and unremedied, must inevitably spread wider, breeding a spirit of pessimism with its many attendant evils.

"The Canadian Pacific has always been the pioneer in providing favorable terms for the colonization of its lands in the west, particularly in connection with the terms under which their lands have been sold, in the preparation of ready made farms, the advance of livestock to settlers loans made to them, and the aid granted through its agricultural and development departments. It is clear that the new plan will do much to re-establish confi-

dence in the west, retain settlers who are now proposing to leave, and stimulate immensely the immigration of desirable agricultural colonists. Briefly, the plan is to take the indebtedness of the farmers who now have contracts with the company, rewrite their contracts and spread the present indebtedness over 34 years, on an amortization plan. The settler will pay the same amount annually for 34 years, and upon completion of the 34th payment receive title to the land; he is assured that no annual payment of interest and principal combined will exceed 7% of the cost of the farm. The plan will absorb his total indebtedness in easy payments, allowing him sufficient from profits to provide both the comforts and enjoyments of life for his family.

"The future of Western Canada, in fact, of Canada as a whole, is dependent upon greater population. If farmers were even fairly well satisfied with their conditions, it would greatly facilitate the securing of more desirable settlers. There is at present a considerable exodus from the west, which is practically nullifying the efforts of the C.P.R. and the Government to encourage new peoples to come in. The loss of people to the country is a loss to Canadian business in general, affecting manufacture, commerce, transportation, etc. To get desirable immigrants we must have fairly well satisfied settlers. Under the new C.P.R. plan, farmers will now be able to be successful upon their holdings, and the Government and the railways will be in a position to encourage prospective settlers to take up unsold or unoccupied farm lands. In Great Britain, the United States and other countries from which desirable immigration is ready to flow, a marked stimulus to land settlement will, without doubt, result from the introduction of the new policy as outlined."

Freight Car Location on Canadian Railways.

The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on May 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, as follows: Number of cars owned, 209,295; home cars on Canadian foreign lines; 11,545; home cars on U. S. lines, 55,589; home cars on home roads, 142,161; Canadian owned foreign cars on home lines, 9,855; U.S. owned foreign cars on home lines, 30,569; total cars on lines, 182,585; per cent on lines to total owned, 87.2; deficiency on lines to total owned, 26,710; home cars in bad order, 13,151; foreign cars in bad order, 360; total cars in bad order, 13,511; per cent in bad order, 7.4; privately owned U.S. cars on lines, 2,333; privately owned Canadian cars on lines, 992.

The figures given above are smaller than those for some time past. This is due to the elimination of statistics of the Central Vermont, Michigan Central, Pere Marquette and Wabash lines from the reports, in accordance with an understanding reached by the Railway Association's sub-committee on car service on April 11.

Some Recent Developments of the Railway Motor Coach.

By C. E. Brooks, Chief of Motive Power, Canadian National Railways.

In commencing this paper the writer must ask for lenient consideration, as the subject named is not only in the early stages of development, but also covers such a large field and variety of equipment that it is necessary to curtail descriptive matter as far as possible and to make a certain number of rather bald statements unadorned by detail.

The motor coach is not a new departure in railway work, but is instead a branch of the work which on most railways had sunk back, from a promising start 15 years ago, into obscurity, due essentially to high maintenance and operating costs, and to the general idea that the motor car was a toy only. During the past three years the subject has been actively revived as a result of: Firstly: The ever increasing encroachment of the motor bus on railway earnings. Secondly: To the improvement in the design of the motor and its appurtenances. Thirdly: To the idea which the automobile is gradually giving the public, namely, that it is not necessary to sit on a plush seat

main line trains. (4) To connect small summer resorts, golf clubs, etc., to branch line or through main line service. (5) To handle milk of a limited amount to a distributing or connecting point. (6) To provide connections to small suburbs.

Among the first real developments of the motor coach was the gas-electric car, the use of which spread rapidly fifteen years ago, but which, unfortunately, did not solve these problems successfully, on account of the high maintenance cost of the heavy duty gasoline motor driving the generator, the very uncertain service, the complications of the equipment, and the great weight of the motor coach itself. Indications are that the gas-electric system, with a modern gas engine generating plant, is making another bid for this class of work, and a brief description of such a unit is given farther on in this paper. About the same time steam units, having very considerable weight, and all the complications of the locomotive, appeared, but were discarded for

of 15 to 25 miles per hour, including stops. Consider a 5 mile run between stops, 1 minute for stops, acceleration from 0 to 30 m.p.h. in 2 minutes on level track; 30 to 35 m.p.h. at end of third minute, an average speed of 35 m.p.h. for the next $3\frac{1}{4}$ miles, and half minute to travel 0.21 mile, and come to a stop, means that in order to run 5 miles and make one stop, the elapsed time is 10.9 minutes, or an average schedule speed, including stops, of $27\frac{1}{2}$ m.p.h. This allows nothing for loss of time on gradients, slow orders, etc.

Generally speaking, class A units have been gasoline driven, and the experience of many railways points to this class of equipment being an economical and lasting development, which will be improved to the point of high grade automobile reliability within a very short time. Already, in many places, these cars have retrieved business which had been lost to bus lines on the highways, and also to the private owned car, and it has been the usual thing to find pas-



Self-propelled Steam Passenger Car, Canadian National Railways.

in order to travel short distances.

In order to enter into a discussion of present day developments, it will be necessary to briefly outline the service requirements, and in doing so the writer must be pardoned if he presents the motor coach as a "unit car," and not a train of cars, or a driving car hauling a trailer. The latter conditions may be possible on small interurban, or suburban, lines, but as a practical railway condition it is not being considered by many large railways. The reason for this is that up to the present time it has not generally been found to be economical to replace a necessary train service with a motor coach hauling one or more trailers, on account of motor capacity limitations.

On the other hand, high train mile costs for small returns have forced railway officers to turn to the motor coach for relief in the following classes of service: (1) To give a frequent passenger service on sparsely settled branch lines, or parts of main line adjacent to market towns or junction points. (2) To connect junction points, on important main lines, with the town or small city situated within a few miles of the main line. (3) To give a group of towns, situated on a main line or important branch lines, a frequent connecting service over and above through

much the same reasons as the gas-electric car. Present day developments are generally to provide for traffic requirements, which, for the purpose of discussion, are sub-divided as follows:

Class A—A seating capacity of from 24 to 40 persons, and provision for approximately 100 sq. ft. of baggage space. (Note: In some classes of service the baggage space is given up and seating accommodation substituted.) The light weight of such a car to be from 18,000 to 30,000 maximum, or in other words, not to exceed 750 lb. per single seat (with baggage space) or 500 lb. per seat if no baggage space is allowed. Smaller cars have been made, and are in daily use, but the rapid development of traffic, after cars are put into service, indicates that the above mentioned sizes are reasonable limits.

Class B—Units seating from 40 to 60 passengers, and providing for baggage space, minimum 100 sq. ft., maximum 200. While the trend of construction has resulted in this class of car weighing from 800 to 1,200 lb. per single seat, it is thought that the weight must be kept down to the same limits as prescribed in class A above, in order to get any fuel economy and keep maintenance costs at a reasonable figure.

Speed Requirements.—Schedule speeds

senger traffic develop to a marked extent after a service has been instituted. The failures have been rather heavy, due to conditions described later in this paper, to the over-exacting requirements of timetables, and to non-realization of the limitations of the gasoline motor. For the purpose of description class B units may generally be sub-divided as follows: (1) Storage battery; (2) H.p. steam, oil fired boiler; (3) Heavy duty gas engines; (4) Gas-electric.

Class A Cars—The Gasoline Engine Driven Motor Coach.—For cars described as class A, weighing approximately 30,000 lb. light weight, the general practice has been the use of the high grade truck engine—4 cylinder—and running at a maximum speed of approximately 1600 r.p.m., developing a maximum of 70 h.p. Wherever this type of engine has been used, it has transmitted its power through clutches, transmissions and universals, to gears, most of which are of standard truck or even heavier design.

A general description of a typical power plant, such as mentioned above, is as follows: Engine, 4-cylinder $4\frac{3}{4}$ x 6 in.; pressure oiling system; pump water cooling system; primary and secondary transmission; primary ratio first speed, 4 to 1, third speed, 1 to 1. Secondary increases the ratio from 26 m.p.h., for

normal engine speed, to 35 m.p.h. The first provides for ruling grade, and the second for level track conditions.

To a much less extent, the automobile type six-cylinder engine of the following general description has been experimented with: Engine, 6-cylinder $3\frac{1}{2} \times 5$ in.; pressure oiling system; gear ratio 4.7 to 1 between engine and wheel; nominal engine speed at 30 m.p.h., 1,450 r.p.m.; horse power developed, 50 at 2,200 r.p.m.; maximum speed, 2,200; pump, water cooling system. In general its power has been transferred through standard automobile clutches, transmissions, etc., which are used with the same type of engine in automobile service.

In so far as the actual power plant is concerned, it is the opinion of many that the automobile engine has, in almost every way, demonstrated its superiority over the truck engine for class A cars, and for general service, as described in the first part of this paper, due to the following main reasons: (1) Ability to run over rated speed without serious loss of balance and consequent excessive vibration; (2) Economy under light load conditions. Number 1 undoubtedly embraces conditions which are vital to the successful maintenance of any machine or engine, and it is the writer's intention to attempt to explain this from the everyday point of view, derived from experience, rather than from the dynamics of the problem.

Practically any high grade automobile engine designed for a rated engine speed of approximately 1,450 at 30 m.p.h. with a gear ratio between 4 to 1, and 5 to 1, may be driven at engine speeds of 2,200 and car speeds from 50 to 60 m.p.h., without any noticeable serious vibration. Experience indicates that a relative flexibility cannot be expected from the truck engines, for any length of time, without serious engine trouble, possibly resulting in a complete break down of the service. When a motor coach is being operated on a railway where there are schedule connections to make, and where there are meeting points, designated by train orders, and by the time card, it is certain that, regardless of the framing of a schedule, which should not develop an engine speed over that coinciding with the rated speed of 35 m.p.h., the operator will frequently exceed this by 15 or 20 m.p.h., in order to meet the operating requirements of the service after a delay of any kind. No such parallel exists in highway work, with either the automobile or the truck, but is such an accepted fact on a railway, that the only safe course is to provide the type of power plant which will meet this condition daily without breaking down; in other words, the power plant must be moved out of the sphere of ordinary usage, and into what might be called the outer edge of racing conditions. Railway gradients even accentuate this condition, as there is little, if any, opportunity for letting the engine cool off, as there is on the highway. The automobile engine has been designed, not only for easy and economical low engine speed conditions, but also for those outlined in the last paragraph above, and the experience of several railways in this country, with a number of cars operating under extremely different conditions, seems to bear this out, which leads to the conclusion that the light weight high speed gas engine is a satisfactory power plant for the light weight cars described as class A.

Class B Cars—(1) The Storage Battery Car.—The general dimensions and description of a typical unit are as fol-

lows: Car: Interior arrangement, to suit purchaser; weight, 60,000 lb.; length, 53 ft.; trucks, 2-4 wheel standard M.C.B. axles, except that journals are fitted with roller or ball bearings; electric motors, etc., 4-25 h.p. 250/300 volt, mounted with a gear ratio of 16 to 91, Standard series, and parallel controller and circuit breaker, installed at each end, and in baggage compartment; there are voltmeter, amp. hr. meter, underload circuit breaker and switches for control of air compressor and lighting. Storage batteries, 250 cell, capacity 450 a.h. amp. hrs. at 300 v or 135 k.w.h.; (Note 580 a.h. have been obtained with a minimum of 150 volts). Charging, d.c. 250 or 500 volts may be used for charging and the car is equipped with switches for arranging the battery cells in either series or parallel. Normal rate of charge 90 amps. Time required for a normal full charge 5 to 7 hours. Higher rate of charging may be followed provided temperature of battery does not exceed 115° F. Radius of operation, maximum of 140 miles, on a full charge, figuring on level or rolling grade. Recommended not to exceed 100 miles or to get a boosting charge. Consumption of power 35 watt hrs. per ton mile. Acceleration $\frac{1}{2}$ m.p.h. per second. Maximum speed, 45 m.p.h. on level track. As the car weighs approximately 60,000 lb., the figure of 35 watt hours per ton

point which may make steam power the most satisfactory unit car power, and it may be well to consider these defects more in detail, as they appear to exist in modern equipment.

(1) Insufficient boiler capacity is a defect directly coupled with excessive weight of equipment. Boiler plants of approximately 70 boiler h.p. nominal rating have been applied to cars with a total net weight in running order of from 50,000 lb. to 60,000 lb., providing for 100 sq. ft. of baggage space. The total live load will bring this equipment up to a gross weight of approximately 65,000 lb. or a load of 650 lb. per boiler h.p. Experience indicates that for a boiler of this capacity the weight should be reduced by approximately 15,000 lb. and the writer has no hesitation in saying that this should be possible, as the entire power plant may be carried on the leading (driving) truck and the rest of the body lightened proportionately. Total absence of vibration should be a very great advantage in lightening the car equipment. Practically all the first cars of continental make indicated that high pressure and high superheat were necessary, in order to provide for a gear ratio sufficient for starting, and at the same time for a piston speed of 800 ft. per minute at 40 m.p.h. The engine developed to meet these conditions has no doubt



Gasoline Motor Passenger Car, Canadian National Railways.

mile gives a consumption of 1.05 k.w.h. per car mile—level track and normal conditions.

General.—Within the before mentioned radius of operation this car has been extremely satisfactory, and is being operated successfully, under low temperature conditions, with no appreciable trouble. The tractive effort of 2,400 lb. makes it possible to use a trailer, if necessary. Cost per car mile, including all maintenance and transportation charges, power, etc., 17c. The maintenance has been extremely light, and all indications are that the life of the batteries will be 8 to 10 years at least.

(2) **Steam Cars.**—The steam power plant was probably one of the first tried, of any kind of power, for self-propelled cars, but unfortunately its development has not kept pace with requirements. Medium pressure boiler plants of 300-400 boiler pressure, with comparatively low superheat (100° F.) were introduced to a considerable extent in continental practice several years ago, but the use of this type of car has not developed, due principally to excessive weight of the equipment, the inefficiency of the boiler plant, and the general complications of the equipment. Recent developments indicate that while the seriousness of these defects has been noted, and improved, they have not yet been overcome to the

been a great mechanical success, but the boiler plant supplying it has not yet been developed to the point where it can exceed the schedule previously outlined, even under the most favorable conditions. The causes of this deficiency appear to be due to: (1) Insufficient header volume, resulting in carrying over an emulsion into the superheater units, with a consequent total loss of superheat and excessive water consumption, and (2) Unequal distribution of heat to all generating units, resulting in steam pockets, thereby destroying both circulation and evaporative qualities.

The problem of providing sufficient surface condenser for hot weather conditions, coupled with protective appliances which will be operated by thermostat in cold weather, has not been solved, with the result that under maximum conditions the water loss is as high as 45 lb. per car mile, necessitating replenishing at frequent intervals, with subsequent loss of time.

The automatic control of the oil flame has been highly developed, but is not yet perfected. Generally speaking, this automatic feature must have two distinct functions: (1) To cut off or reduce fuel supply when maximum b.p. is reached, and (2) To cut off fuel under low water conditions. The first named is undoubtedly perfectly developed, but the second

is not due to the varying quality of the steam coincident with the conditions (maximum load) which most often causes low water.

The least considered of all conditions in connection with the steam car is probably the comfort of the operator, and in this respect this type of equipment is unpopular, on account of the extreme heat, which may be overcome, and also the noise of the oil flame. The latter is by far the most serious, and is apparently impossible to control when using high velocity jets of steam for atomizing.

Space does not permit a further study of the steam plant, but the following general data of a steam car now being tested may be of interest:—

Space required for boiler plant.....	640 sq. ft.
Heating surface.....direct	385-sq. ft.
Gross weight of car.....	60,000 lb.
Net weight of complete power plant	
without oil and water.....	13,000 lb.
Quantity of water supply.....	200 U.S. gall.
oil.....	180 U.S. gall.
Oil rate per car mile average.....	1.0 gall.
Boiler pressure.....	300 lb.
Superheat (average).....	200° F.
Engine dimensions.....	6½ bore 8 in. stroke
Gear ratio between crank shaft and axle.....	1 to 1.46

(3) The Heavy Duty Gas Car.—Dimensions and description: Length, 55 ft.; weight, 60,000 lb. loaded; engine dimensions, 6-cylinder—6¾ in. stroke; power, 116 h.p., at 800 r.p.m.; 225 h.p. at 1,600 r.p.m. Transmission, 4 speeds forward, 3 reverse. Geared to give 56 m.p.h. forward at 1,400 r.p.m. in high, and 37 in third speed. This class of car has not been tested to the point where any accurate data may be given, but it is evident that gas consumption will be at least twice that of a class A car per car mile.

The problem of handling through transmission and clutch the mechanical drive from a heavy duty gas engine of possibly 200 horse power has not yet been solved, unless it is through the medium of the oil transmission, so successfully used in navy work. The extreme complication of this transmission or magnetic control makes it doubtful at the present time whether gas power plants will successfully exceed 70 horse power.

(4) The Gas Electric Car.—Earlier in this paper mention has been made of the gas-electric car, which came into prominence about fifteen years ago, and which has been practically discarded, for reasons mentioned, namely, unreliable power plant and general complication of equipment. The first mentioned cause of failure has undoubtedly been overcome, and reliable constant speed units are in general use for generating purposes. If it were possible to eliminate the starting troubles when using types of engines suited for low grade and cheap fuels, there would be no doubt about the general use of this type of equipment, on account of unit power costs. The difficulties mentioned are such an important factor in the successful operation of a motor coach in certain localities that we must necessarily turn to the gasoline engine for generating power.

The gas-electric system provides double ended control, and an efficient starting torque, but still retains all the complications of a dual power plant. The general data pertaining to a modern gas-electric plant is as follows: Size of car, 55 ft. length, 10 ft. width; seating capacity, 54, with 100 sq. ft. of baggage space; weight, loaded, 65,000 lb.; engine, 6-cylinder, governor controlled, bore 7 in., stroke 8 in., developing 150 b.h.p. at 900 r.p.m., driving a 100 k.w. 700 volt generator, which in turn drives two motors on forward truck. Fuel consumption, esti-

mated, 0.25 gall. per mile. It is thought that there may be a possibility of a smaller capacity constant speed gasoline engine (the equal of average running power consumption approximating 25 horse power for cars weighing 60,000 lb. loaded) driving a generator charging a limited battery capacity. Theoretically this might provide the starting torque desired, and at the same time eliminate the undesirable features of the large power plant, but it could not be an economic consideration where cheap power could be purchased.

The Ball and Roller Bearing.—As it is impossible, in the space of a paragraph or two, to even partially cover the question of low friction bearings, it is the intention to briefly indicate why the ball or roller bearing has been one of the most important factors in the development of the motor coach and may possibly be a greater factor in future railway developments in other equipment. Exhaustive tests indicate that the ball bearing has reduced starting friction, under summer conditions, to approximately 15% of that of plain bearings, or in other words has reduced friction of approximately 20 lb. per ton to 3 lb. per ton. At the same time average rolling friction at speeds up to 30 miles per hour has been reduced by approximately 40%, or from 3.6 lb. per ton to 2.2 lb. per ton.



Electric Storage Battery, Passenger Car, Canadian National Railways.

Experience in this country indicates that the ball bearing is suitable for class A cars, but that designed areas and sizes for industrial work should be at least doubled for railway work, due to excessive shocks and side thrusts. It is not possible at this time to say whether side thrusts or vertical rail shocks are more destructive, but it is certain that for poor rail conditions the bearings should have a side thrust capacity of 100% of vertical load. For class B equipment, it may be necessary to use the roller bearings for vertical loads, with special bearings for side thrusts.

Transmission and Type of Drive for class A gas driven and class B (heavy duty gas driven).—While it has been advocated in this paper that the automobile engine is most suitable for the light motor coach, it is also admitted that experience indicates that standard automobile transmission, clutches, universal connections and driving gears are entirely inadequate for motor coach service, and are the cause of probably 75% of the breakdowns. In this respect, the appliances which have been developed as counter parts of the truck engine are generally much superior, due to greater size and strength per h.p. transmitted than automobile parts. The argument has been advanced that the parts are designed for the engine, and will han-

dle all the power developed by same, but such are not sound, on account of the greater inertia to be overcome at starting, requiring a momentary torque much in excess of anything experienced in automobile work. There is also the condition in this country, and the northern states, of having to operate cars in snow storms, resulting in clutch slippage, and shocks to transmission, much in excess of that experienced in automobile service.

The method of transmitting the power to the wheels has been generally as follows:—

(1) Through a standard transmission to one driving axle, which supports the entire two-wheel rear truck, and which can move in a vertical plane only. While this is the simplest method of driving, it is not the opinion that it will ever be generally acceptable to the railways, as railway experience indicates that safety and good riding qualities are almost proportionate to the number of wheels in the trucks. This is particularly applicable to cars operating on cheaply maintained lines.

(2) To both axles of front four-wheel truck, by gearing and universal connections, from a transmission located behind the truck. Experience on some railways is showing that this method of transmitting the drive is very successful, and although the number of universal

connections is not reduced, the shafts are all short, and the entire driving forces are removed from the passenger carrying part of the cars, thereby reducing vibration.

(3) To a transmission located about the center of the car, and from there to nearest axle of each four-wheel truck, or to both axles of two-wheel trucks. The advantage claimed for this method of drive is that the entire weight of the car is available to give good adhesion (where the trucks are two-wheel type), but general experience indicates that this is not necessary, and is harder on the engine than an arrangement where part of the momentum of rotating parts may be taken up by slippage. Where four-wheel trucks are used this method gives better adhesive qualities than connecting to both axles of one truck, but seemingly not sufficient to warrant the extra complication of transmission.

(4) To the leading axle of rear four-wheel truck. The chief advantage of the drive to the rear truck is that the engine may be aligned in such a manner as to have its shaft center line pass through the center line of main driving axle, thus reducing wear on universals and friction to a minimum. The disadvantage is that it necessitates the use of one or more supplementary bearings, between the engine and the point where

the drive shaft is coupled to the front universal. The maximum lateral motion of a truck of 48 in. wheel centers and 18 ft. truck centers on an 80 ft. radius curve is shown by road check to average $\frac{3}{4}$ in. at a radius from center of 24 in., so that it is apparent that the swing of the truck has but little effect on the universals. The torque arms supporting the housings of such an arrangement should have both vertical and lateral swing. Only when the load on main axle is not sufficient for adhesion it may be conceived that driving power acts on the second axle. Under ordinary conditions transmitting power to the second axle generates no more friction than that due to the weight of rotating parts.

Methods of transmitting power from the front axle to the rear axle of rear truck may be sub-divided as follows:—

(a) Chain drive has the advantage of rapid wear, noise, and the complication of shields and covers, which more than overcome the advantage of the straight drive to the rear truck.

(b) Gear drives to the second axle no doubt appear the best mechanical means of transmitting power, but it has

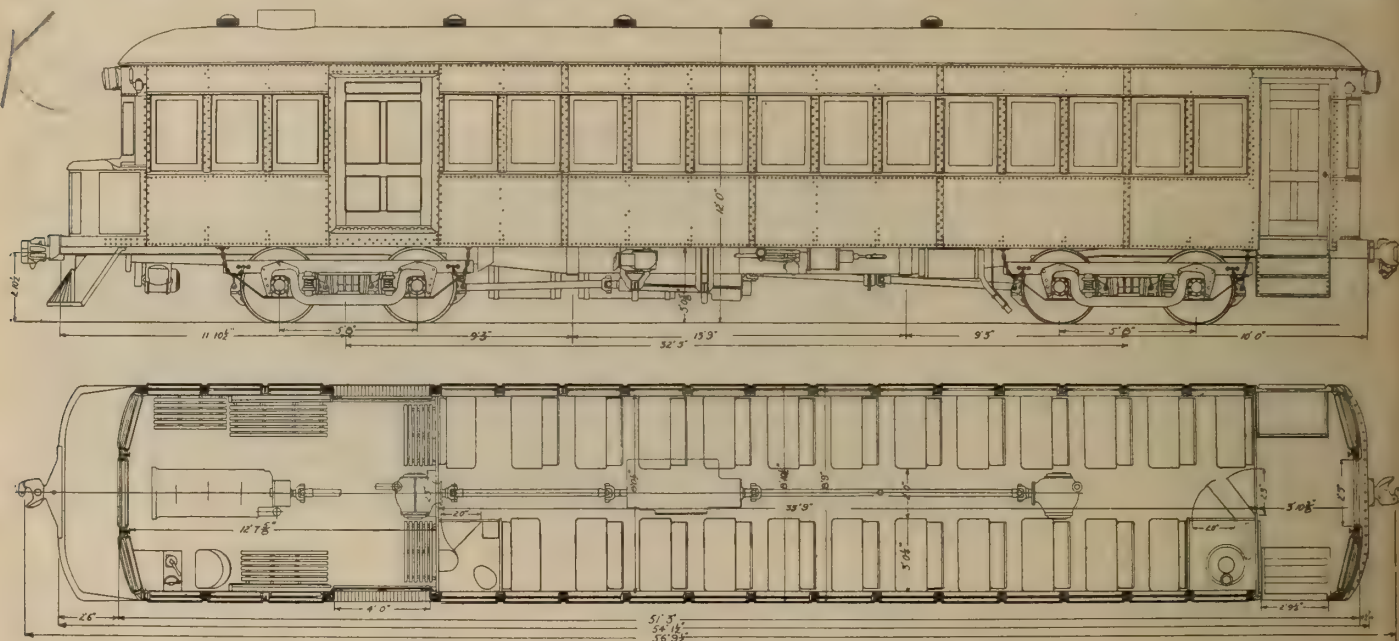
light weight) gas engine driven by automobile type engine 6-cylinders with the following general characteristics and limiting conditions:—1.6 h.p. per 1,000 lb. light weight of car at engine speed of 2100 r.p.m., giving a car speed of 35 to 40 m.p.h. Rolling friction 2.2 per ton weight on rail, and wind resistance of 5 lb. per square foot cross sectional area of car at 40 m.p.h. Weight of car per passenger seat maximum 750 lb. Weight of car per maximum h.p. 600 lb. Gear ratio between engine and wheel for ruling grades not exceeding 1.25%, 4.7 to 1. (In hard operating conditions this may be increased to 5.5 to 1).

Class B cars.—It is difficult to come to a general conclusion with regard to this class of equipment, as it appears that only one class of car has actually passed out of the experimental stage. One of the Canadian railways has found the battery car to be a thoroughly reliable and economical unit to operate, provided that the schedule will permit of charging time. Severe weather conditions have had but little effect on the operation, and the simplicity of the power

The foregoing paper was read before the American Society of Mechanical Engineers at its railway session in Montreal recently.

Discussion on Hudson Bay Railway.

F. W. Cowie, Consulting Engineer, Montreal Harbor Commission, in addressing the Engineering Institute of Canada's Montreal branch recently, referred favorably to the Hudson Bay Railway, and the ocean route thence to Liverpool, arguing that by using that route Western farmers would obtain cheaper rates for their grain, and that the European markets would be much nearer than by present transportation routes. These observations aroused considerable discussion, the opinion expressed being generally against the route. A. D. Swan said that the cost of building the railway and the necessary facilities would be heavy; the season would be short, and the cost of operation would be in excess of other routes, so that the estimate of a 24c rate per bushel from Saskatoon to Liverpool was too low and he



Heavy Duty, Gasoline Motor Passenger Car, Canadian National Railways.

with it all the disadvantages of rapid wear, due to difficulty of adjustment of contact, and the maintenance of extra universals.

(c) Side rods and cranked wheels, in similar manner as locomotive driving wheels. Side rod drive to the second axle, while with many other locomotive developments is said to be crude and inefficient, in actual practice is a thoroughly reliable and easily adjusted and inspected arrangement, and is operating successfully at high and low speeds, and with no appreciable friction.

(5) Miscellaneous, including oil transmissions still being experimented with.

Summary.—In summarizing, the writer realizes that in dealing with such a subject there is no doubt a very great difference of opinion amongst railway men regarding what will fulfil the requirements of the service best. It is apparent to any engineer that there will be important developments in railway motor cars, both in so far as design and field of service are concerned, and therefore the conclusions which we may note here may be considered as preliminary only.

Class A cars (30,000 lb. maximum

controlling devices eliminates any chance of opposition from the operators.

The chief obstacles in the development of this type of units is first cost, and in some regions high power costs, but it is felt that the great advantage of double ended operation, without complication, more than offsets any serious disadvantages.

In conclusion it seems safe to say that there is a fairly large field for the motor coach in railway work, and that it will not be developed from without, but rather from within, slowly, conservatively, by motor manufacturers and railway engineers, as the travelling public will never tolerate from the railway companies the difficulties and disappointments which have been visited on them personally by the automobile manufacturers. The railway engineer, to do his part in this problem, must be familiar, not only with operating conditions, but also with the labor problems which are sure to arise in such a development, making it necessary and advisable to give consideration to the employee operating this equipment, and to the public using it.

believed would be as high as 40c or 50c a bushel. He favored the development of a route via Vancouver. H. Holgate was in favor of improving the St. Lawrence navigation route so that large grain boats from the upper lakes could reach Montreal. G. H. Duggan said that every dollar that had been expended by the Government on the Hudson Bay Ry. and on the proposed terminals at Port Nelson had been wasted, and the sooner the whole thing was dropped and forgotten the better it would be for Canada.

Liquor Transportation on Canadian National Rys.—On motion of H. H. Stevens, Vancouver Center, B.C., the House of Commons passed an order recently for a copy of all correspondence, letters, telegrams and other documents passing between the Prime Minister, the Minister of Railways, and H. R. Grant of Sydney Mines, N.S., or other persons, having reference to the transportation of liquor, over Canadian National Rys. or other lines under the control of the Canadian National Rys., into Nova Scotia.

Birthdays of Transportation Men in June.

Many happy returns of the day to:

Thomas Ahearn, President, Ottawa Electric Ry., Ottawa, Ont., and Honorary Councillor, Canadian Electric Railway Association, born at Ottawa, Ont., June 24, 1855.

F. F. Backus, General Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Rochester, N.Y., June 4, 1860.

W. C. Bowles, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born there, June 3, 1875.

J. H. Boyle, Superintendent, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Waterloo, Que., June 26, 1869.

H. W. Brodie, Assistant Passenger Traffic Manager, C.P.R., Montreal, born at Fredericton, N.B., June 8, 1874.

G. W. Coburn, Resident Engineer, C.P.R., Brandon, Man., born at Upper Melbourne, Que., June 24, 1877.

E. P. Coleman, General Manager, Dominion Power & Transmission Co., Ltd., Hamilton, Ont., born at Taunton, Mass., June 14, 1867.

W. S. Cookson, Manager, Tariff and Ticket Bureau, Canadian National Rys., Montreal, born at Port Jervis, N.Y., June 12, 1871.

E. L. Cousins, Consulting Engineer, Toronto Harbor Commission, Toronto, born there, June 11, 1883.

A. Craig, City Passenger Agent, C.P.R., Hamilton, Ont., born there, June 5, 1884.

W. Crowe, Locomotive Foreman, Canadian National Rys., Wainwright, Alta., born at Fergus, Ont., June 12, 1871.

J. M. Davidson, Division Engineer, Canadian National Rys., Winnipeg, born at Glasgow, Scotland, June 4, 1877.

Edward de la Hooke, Secretary-Treasurer, Canadian Ticket Agents' Association, London, Ont., born at Chichester, Sussex, Eng., June 29, 1842.

Capt. C. P. Disney, Assistant Bridge Engineer, Central Region, Canadian National Rys., Toronto, born at Montreal, June 11, 1887.

Knowlson Elliott, District Freight Agent, C.P.R., Edmonton, Dunvegan & British Columbia Ry. and Central Canada Ry., Edmonton, Alta., born at Gorrie, Ont., June 26, 1884.

J. M. R. Fairbairn, D.Sc., Chief Engineer, C.P.R., Montreal, born at Peterborough, Ont., June 30, 1873.

R. H. Fish, General Superintendent, Southwestern Ontario District, Central Region, Canadian National Rys., Toronto, born at Oakville, Ont., June 12, 1873.

M. Fitzgerald, Special Representative, C.P.R., Yokohama, Japan, born June 7, 1879.

A. A. Goodchild, General Storekeeper, Eastern Lines, C.P.R., Montreal, born at Peckham, London, Eng., June 3, 1866.

W. C. Guthrie, Superintendent, Schreiber Division, Ontario District, C.P.R., Schreiber, Ont., born at Arnprior, Ont., June 15, 1876.

L. R. Hart, General Agent, Rail and Ocean Traffic, C.P.R., Boston, Mass., born at Fairport, N.Y., June 3, 1877.

J. A. Heaman, Assistant Chief Engineer, Western Region, Canadian National Rys., Winnipeg, born at Memphis, Tenn., June 3, 1874.

T. M. Hyman, Superintendent, Montreal Car Shops, Canadian National Rys., Montreal, born near Bristol, Eng., June 12, 1885.

Major R. B. Jennings, Division Engineer, Montreal District, Central Region,

Canadian National Rys., Montreal, born at Paris, Ont., June 29, 1888.

M. W. Kirkwood, General Manager, Grand River Ry., and Lake Erie & Northern Ry., Galt, Ont., born at Cheltenham, Ont., June 8, 1877.

L. Lavoie, Purchasing Agent, Canadian National Rys., Toronto, born at Rimouski, Que., June 22, 1879.

R. S. McCormick, Chief Engineer and General Superintendent, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., born at Quaker City, Ohio, June 22, 1873.

S. J. McLean, M.A., LL.B., Ph.D., Assistant Chief Commissioner, Board of Railway Commissioners, Ottawa, born at Quebec, June 14, 1871.

G. K. McNab, Port Agent, Canadian Government Merchant Marine, St. John, N.B., born at Montreal, June 8, 1896.

C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Chatham, Ont., June 7, 1862.

James Manson, Assistant to the Vice President, C.P.R., Montreal, born at Thurso, Scotland, June 8, 1863.

W. E. Massie, Mechanical Superintendent, Niagara, St. Catharines & Toronto Ry., St. Catharines, Ont., born at Elora, Ont., June 5, 1880.

L. Mulkern, Division Freight Agent, C.P.R., North Bay, Ont., born at London, Ont., June 18, 1871.

W. M. Neal, General Superintendent, Algoma District, C.P.R., North Bay, Ont., born at Toronto, June 20, 1886.

R. P. Ormsby, Secretary, Canadian National Rys., Montreal, born at Arklow, Ireland, June 26, 1869.

J. E. Pinault, General Superintendent, Canada & Gulf Terminal Ry., Mont Joli, Que., born at Rimouski, June 24, 1884.

F. R. Porter, Foreign Freight Agent, Canadian National Rys., Toronto, born at Stratford, Ont., June 13, 1875.

F. Price, Chief of Car Service, Canadian National Rys., Montreal, born there, June 11, 1864.

L. J. Reyecraft, Solicitor, Manitoba and Saskatchewan Districts, C.P.R., Winnipeg, born in Orford Tp., Kent County, Ont., June 20, 1868.

J. R. Shaw, Passenger Agent, Ocean Traffic, C.P.R., Manila, Philippine Islands, born at Montreal, June 28, 1871.

J. L. Simpson, Agent, C.P.R., Port McNicoll, Ont., born at Mount Forest, Ont., June 9, 1866.

H. H. Smith, Car Accountant, Canadian National Rys., Toronto, born at Quebec, Que., June 14, 1872.

F. W. Thompson, Chairman, Canadian Car Demurrage Bureau, and Canadian Freight Association, Western Lines, Winnipeg, born at Toronto, June 14, 1873.

L. O. Tremblay, District Passenger Agent, Rail and Steamship Lines, C.P.R., North Bay, Ont., born at Calumet Island, Que., June 19, 1885.

N. Van Wyck, General Purchasing Agent, Canada Steamship Lines, Montreal, born at Hamilton, Ont., June 29, 1883.

V. G. R. Vickers, ex-Manager, Foreign Department, and Superintendent Atlantic Division, Dominion Express Co., now Vice President, The Holden Co., Montreal, born at Toronto, June 1, 1866.

A. E. Warren, General Manager, Western Region, Canadian National Rys., Winnipeg, born at Taunton, Eng., June 9, 1874.

Walter White, Trainmaster, Canadian National Rys., Palmerston, Ont., born at

President Beatty Urges Continuance of C.P.R.'s Proverbial Courtesy.

E. W. Beatty, K.C., President, C.P.R., has issued the following circular letter to all officers and employees: "From its inception the company has enjoyed an enviable reputation for courtesy to its patrons. Inculcated in the early days when the company had to struggle for its existence, it has proved beyond question a most important factor in the steady success of the company in every field of competition. We will be called upon in the future to meet competition as keen as we have encountered in the past, and I cannot impress upon you too strongly the maintenance of this tradition. Canadian Pacific courtesy and efficiency must continue to be uppermost in the thoughts of all officers and employees. The personal touch that costs so little, and means so much, when it is sincerely shown, will in a great measure enable us to maintain the supremacy we now hold. Every patron must be made to feel that we have his personal interest at heart; that we appreciate his patronage; that he will receive our personal attention in the smallest details that may appeal to him, and that he will receive a quality of service from the Canadian Pacific that he cannot hope for elsewhere. Courtesy and civility hall-mark efficiency, and it must be the aim of everyone associated with the company, from the highest officer to the most humble employe, to cultivate this trait. The good opinion of a single patron, who feels that he has enjoyed any special consideration at our hands, that may in the smallest degree have contributed to his comfort or benefit, is the best advertisement the company can have. The fact that a representative of the Canadian Pacific has shown his personal interest and consideration is passed on from one person to another, and the expression of such experiences, multiplied by many instances, means everything to the welfare and continued success of the company's enterprises. I therefore earnestly request you to use your best efforts to foster and promote this spirit. Let us continue to enjoy in the future, as in the past, the excellent reputation earned by the company in this respect, and with your hearty and whole-souled co-operation I feel sure that the company will continue to enjoy the preference over its competitors which it has so long maintained."

C.P.R. Lake Helen Summer Camp.—The C.P.R. is, a press report states, going to establish a summer camp on Lake Helen, near Nipigon, Ont. It is said that it will consist of a central building to be used as dining room, dance hall, offices, kitchen, etc., together with 6 double and 9 single permanent bungalows, and 7 canvas houses. The camp will be reached by a road from a new station to be built about a mile east of Nipigon. It is expected that the camp will be ready for tourists by July 1.

Railway Ties for Japan.—The Japanese s.s. Kohnan Maru recently loaded 800,000 ft. of ties for maintenance work on the Imperial Japanese Ry. They were cut on the Saanich Peninsula, and transported over the British Columbia Electric Ry., to St. Lawrence Street, Victoria, whence they were transferred to Ogden Point for shipment. The order was placed through Vancouver Harbor Trading Co.

Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 378. April 13.—Amending uniform rules governing the determination of visual acuity, color perception, and hearing of railway employes.

General order 379. April 4.—Amending rules relative to inspection of locomotives and tenders, general order 289.

380. May 16.—Authorizing Canadian National Ry. to cancel arrangement in tariff C.R.C. no. E-4411, with regard to milling-in-transit on peas, and that right be reserved to any interested party, prepared to substantiate claim that peas should be given milling in transit rate, to apply to Board for order requiring railway companies to amend tariffs accordingly.

381. May 13.—Declaring that the word "traffic" in the first line of sec. 345 (1) (a) of the Railway Act, 1919, should be read as though preceded by the word "freight."

33,537 to 33,543. April 13.—Declaring that for the present, Canadian National Ry. crossings, just east of Lyndon station; half a mile east of Aultsville station; east of Beachville station; east of Thamesville station; west of Oakville station; east of Grimsby station; and east of Jordan, Ont., are protected to the Board's satisfaction.

33,544. April 14.—Amending order 33,145, Nov. 24, 1922, fixing rates, in pursuance of an agreement dated Dec. 23, 1915, to be paid to the London Railway Commission by Michigan Central Rd., by changing effective date of 5-year period from Dec. 23, 1920, to Jan. 1, 1921.

33,545. April 14.—Authorizing British Columbia Public Works Department to build highway crossing over C.P.R. at mile 17.65 from Cranbrook, B.C.

33,546. April 16.—Authorizing Brantford & Hamilton Electric Ry. to enter upon J. S. Coker's lands and remove hedge and trees obstructing view at crossing of Stone Road, just east of Cainsville, Ont.

33,547, 33,548. April 16.—Declaring that for the present, Canadian National Ry. crossings of Parkdale Ave., Ottawa, and Strange St., Kitchener, Ont., are protected to the Board's satisfaction.

33,549 to 33,551. April 17.—Ordering Canadian National Ry. to make alterations and additions to bells and wigwags at crossings of Francis, Brock and Amelia Sts., Fort William, Ont.

33,552. April 11.—Authorizing British Columbia Public Works Department to make highway crossing over Esquimalt & Nanaimo Ry. on Lockner Road, Cassidy, Vancouver Island, B.C.

33,553. April 17.—Approving relocation of C. P.R. station at Congress, Sask.

33,554. April 16.—Approving clearances of umbrella roofs, overhead passage and doorway to C.P.R. shed 28 on Quebec Harbor Commissioners' track, Quebec, Que.

33,555. April 16.—Authorizing City of Brantford, Ont., to build reinforced concrete arch bridge connecting Colborne St. with Colborne St. West, across the Grand River, cost of superstructure of approach to be paid by Lake Erie & Northern Ry.

33,556. April 16.—Authorizing Michigan Central Rd. to extend its tracks across First Ave., St. Thomas, Ont.

33,557. April 20.—Ordering that speed of Canadian National Ry. trains over highway crossing just west of Lyster station, Ont., be limited to 10 miles an hour.

33,558. April 21.—Approving proposed diversion of Niagara, St. Catharines & Toronto Ry. across new Welland Ship Canal, lock 1, at Port Weller, Ont., diamond crossing of Welland Ship Canal Construction Ry. and interlocking plant installed at the crossing of N. St. C. & T. Ry. to carry its traffic over diverted line, under construction, at speed not exceeding 8 miles an hour; and ordering that inner guard rails be laid on deck of temporary trestle bridge, and slow sign boards erected at beginning of diversion, on each side of canal crossing.

33,559. April 17.—Ordering that Canadian National Ry. crossing of Victoria Ave., Niagara Falls, Ont., be protected by watchman between 7 a.m. and 6 p.m. daily.

33,560 to 33,564. April 18.—Approving supplements to Bell Telephone Co.'s agreements with Garthby Local Telephone, Wolfe county, Que.; Home Telephone Co., York and Ontario counties, Ont.; Soulanges Rural Telephone Co., Soulanges and Vaudreuil counties, Que.; Fordwich Rural Telephone Co., Huron and Perth counties, Ont.; Belmont Telephone Co-operative Association, Middlesex and Elgin counties, Ont.

33,565. April 18.—Ordering C.P.R. to build farm crossing for Orsias Parent, Sturgeon Falls, Ont.

33,566. April 18.—Amending order 25,540, Oct. 17, 1916, requiring that crossing of Riverdale Park, Toronto, by Canadian National Ry. and G.T.R., where foot bridge crosses Don River, to be protected by flagman between 8 a.m. and 12 p.m.

from May 1 to Oct. 31 each and every year, by ordering the protection to be daily.

33,567. April 20.—Ordering that earth obstruction to the view just west of C.P.R. and Canadian National Ry. crossing of Eglinton Ave., York Tp., Ont., be removed, and wigwag signals installed on each railway in addition to automatic bells.

33,568. April 20.—Declaring that for the present, the C.P.R. crossing just east of Lonsdale station, Ont., is protected to Board's satisfaction.

33,569. April 23.—Amending orders 31,876 and 33,007, re half interlocker at C.P.R. and Peterborough Radial Ry. crossing of George St., Peterborough, Ont.

33,570. April 24.—Authorizing Vancouver Harbor Commissioners to remove 250 ft. of British Columbia Sugar Refining Co.'s south track at west end, and ordering them to lay track on north side of the company's warehouse at Vancouver.

33,571. April 24.—Approving road diversions of the Vancouver, Victoria & Eastern Ry. at Coal-mont, B.C.

33,572. April 24.—Approving revised location of portion of Interprovincial & James Bay Ry., mile 4.35 to 5.94, Ville Marie spur, Que.

33,573. April 23.—Ordering Canadian National Ry. to build siding adjoining provincial highway in Lot 28, Con. 1, Dumfries South Tp., Ont.

33,574. April 20.—Approving supplement 1 to Bell Telephone Co. agreement with the Mud Lake Rural Telephone Co., Renfrew county, Ont.

33,575. April 25.—Authorizing Kettle Valley Ry. to build spur for Reineth & Furu, Glen Walker, B.C.

33,576. April 25.—Authorizing Michigan Central Rd. to build spur for Ontario Public Highways Department, on Lot 5, range south of middle road, Tilbury West Tp., Ont.

33,577. April 23.—Authorizing Canadian National Ry. to remove its station agent at Merid, Sask., caretaker to be appointed.

33,578. April 24.—Declaring that Canadian National Ry. crossing west of diamond at Welland, Ont., is protected to Board's satisfaction.

33,579. April 24.—Declaring that for the present, C.P.R. crossing just west of Chesterville station, Ont., is protected to Board's satisfaction.

33,580. April 20.—Authorizing British Columbia Public Works Department to make highway crossing over C.P.R. at mile 11.36, south of Revelstoke, B.C.

33,581 to 33,591. April 20.—Approving supplements to Bell Telephone Co.'s agreements with Mink Lake Rural Telephone Co.; Donegal Telephone Co.; Grattan No. 7 Telephone Association; North Algona Tp. Telephone System, Renfrew county, Ont.; Caradoc-Ekfrid Telephone Co., Middlesex county, Ont.; Dore Telephone Co.; Augersburg Telephone Association, Renfrew county, Ont.; Springbank Telephone Co., Huron and Wellington counties, Ont.; Wroxeter Rural Telephone Co., Huron county, Ont.; Wilberforce Rural Telephone Co., Lower Bonaventure Telephone Co., Renfrew county, Ont.

33,592. April 24.—Authorizing New York Central Rd. to withdraw its 3.45 p.m. train, Montreal to Valleyfield, required by order 33,207, Dec. 11, 1922, during the life of the summer time table, effective June 24.

33,593. April 23.—Authorizing C.P.R. to operate over crossing of Canadian National Ry. at Allenby Jct., Que.

33,594. April 27.—Ordering C.P.R. and Canadian National Ry. to build jointly, or by either if agreed upon by the other, interchange tracks at Owen Sound, Ont.

33,595. April 28.—Authorizing British Columbia Electric Ry. to connect with Vancouver & Lulu Island Ry. at 4th Ave., Vancouver, B.C., with leave to abandon passenger service from intersection of V. & L. I. Ry. at 4th Ave., to present station on Granville St. bridge, and demolish that station.

33,596. April 27.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to operate from Edmonton to Smith, Alta., at 25 miles an hour; from Smith to McLennan at 20 miles an hour; and without speed restriction from McLennan to Spirit River, excepting from mile 287 to 307, 20 miles an hour, and mile 352 to 357, 25 miles an hour.

33,597, 33,598. April 30.—Declaring that for the present, first crossing east of Tilbury station, Ont., and crossing of Main St., Brighton, Ont., over Michican Central Rd., are protected to Board's satisfaction.

33,599. April 30.—Declaring that for the present, Canadian National Ry. crossing near Norman station, Man., is protected to Board's satisfaction.

33,600. April 30.—Declaring that for the present, Pere Marquette Ry. crossing near Darrell flag station, Ont., is protected to Board's satisfaction.

33,601. April 30.—Authorizing Canadian National Ry. to build across and divert highway at mile 32.1 Sanudo Sub-division, n.w. ¼ sec. 36, Tp. 56, Range 7, west 5th meridian, Alta.

33,602. April 27.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to operate over its Grand Prairie Branch from mile 0 to 50.19, at speed not exceeding 25 miles an hour.

33,603. April 28.—Authorizing Canadian National Ry. to make highway across its railway

in s.w. ¼ sec. 36, Tp. 38, Range 4, west 3rd meridian, Sask.

33,604. April 28.—Approving agreement between Bell Telephone Co. and Lievre River Telephone Co., Labelle and Ottawa Counties, Que.

33,605. April 28.—Approving Canadian National Ry. standard and joint freight mileage tariff C.R.C. no. E-608.

33,606. April 28.—Ordering Canadian National Ry. to install wigwag signal in addition to bell already provided at first crossing west of Humber River bridge, Weston, Ont.

33,607. April 28.—Declaring that for the present, Canadian National Ry. crossing at Bar River station, Ont., is protected to Board's satisfaction.

33,608, 33,609. April 28.—Approving Bell Telephone Co. agreement with Sandwich South Tp., Ont. and St. Angele de Laval Rural Telephone Co., Nicolet County, Que.

33,610. April 30.—Authorizing Canadian National Ry. to build spur for Northern Forests Products, Ltd., at milepost 12.66, Grismore, B.C.

33,611. April 30.—Authorizing Esquimalt & Nanaimo Ry. to build its Courtenay to Campbell River and Duncan Bay extension across highway at mile 48.85, Comox District, Vancouver Island, B.C.

33,612, 33,613. April 27.—Approving location and details of Dominion Atlantic Ry. proposed stations at Paradise and Clementsport, N.S.

33,614. April 30.—Approving Canadian National Ry. standard freight mileage tariff C.R.C. no. W-325, containing Pacific and Prairie scales.

33,615. April 30.—Authorizing C.P.R. to build additional spur for Backus Brooks Co., Kenora, Ont.

33,616. April 28.—Approving Canadian National and Canadian Northern Ry. bylaws of April 16, 1923, authorizing their officers to prepare and issue tariffs of tolls.

33,617. May 1.—Authorizing City of Brantford, Ont., for 6 months, to build temporary crossing at rail level over Lake Erie and Northern Ry. at Lorne Bridge.

33,618. May 1.—Authorizing Railways and Canals Department to install temporary diamond in Niagara, St. Catharines & Toronto Ry., at Port Weller, Ont.

33,619. April 30.—Authorizing C.P.R. to remove station agent at Iddlesleigh, Alta., caretaker to be appointed.

33,620. May 2.—Approving agreement between Bell Telephone Co. and Rodrigue Lapointe, operating in L'Assomption County, Que.

33,621. May 2.—Authorizing Michigan Central Rd. to rebuild gates at points where it and Pere Marquette Ry. cross Graham St., West Lorne, Ont.

33,622 to 33,627. May 2.—Approving Bell Telephone Co. agreements with Nicolet Telephone Co., Nicolet County, Que.; George Mason, Parry Sound, District, Ont.; Eganville & Brudenell System, Renfrew, Ont.; Chinguacousy Tp., Ont.; Mining Telephone System, Simcoe County, Ont. and King Telephone Co., York County, Ont.

33,628. May 4.—Approving plan of proposed Canadian National Ry. station at Fort Fraser, B.C.

33,629. May 4.—Declaring that for the present Esquimalt & Nanaimo Ry. crossing of Rosehill Ave., Nanaimo, B.C., is protected to the Board's satisfaction, and ordering that scrub obstructing view be cleared away by June 1 in each and every year.

33,630. May 2.—Approving agreement between Bell Telephone Co. and Brown Corporation, Champlain County, Que.

33,631, 33,632. May 7.—Approving supplements to Bell Telephone Co. connecting agreements with South Diagonal Telephone Co., Grey County, Ont.; and St. Marys, Medina & Kirkton Telephone Co., Huron, Perth, Middlesex and Oxford Counties, Ont.

33,633. May 7.—Declaring that for the present, C.P.R. crossing near Perth station, Ont., is protected to Board's satisfaction.

33,634. May 7.—Declaring that for the present, British Columbia Electric Ry.'s crossing near Lulu Island station, B.C., is protected to Board's satisfaction.

33,635. May 7.—Declaring that for the present, Canadian National Ry. crossing near St. Louis station, Ont., is protected to Board's satisfaction.

33,636. May 8.—Authorizing Canadian National Ry. to build spur for John Lucas & Co., York Tp., Ont.

33,637. May 7.—Approving supplements to connecting agreement between Bell Telephone Co. and Cambray Telephone Co., Victoria County, Ont.

33,638. May 8.—Amending order 33,545, April 14, 1923, authorizing British Columbia Public Works Department to cross C.P.R. at mile 17.65 from Cranbrook, B.C., to read "mile 17.65 from North Star."

33,639, 33,640. May 7.—Approving Bell Telephone Co. agreements with Belvidere Telephone Syndicate, Sherbrooke County, Que.; and Quebec Farmers Telephone Co., St. Hyacinthe and Bagot Counties, Que.

33,641. May 8.—Approving C.P.R. plan at automatic signal protection of tracks to be rearranged at crossing at Tichborne, Ont.

Alberta Domestic Coal and the Ontario Market.

In preceding issues of Canadian Railway and Marine World, attention was called to the transportation difficulties in the way of the proposed bringing of domestic coal from Alberta to Ontario and to the action taken by Alberta coal operators, the Alberta and Ontario Governments to get a favorable rate from the railways, and it was stated that Sir Henry Thornton, President, Canadian National Rys., had undertaken to make enquiries to determine the most favorable rate that could be given. On May 5, Sir Henry telegraphed Senator J. S. McLennan, chairman of the Senate committee on Canadian fuel supply, as follows: "After careful deliberation Canadian National Rys. are able to quote rate of \$9 per ton, on the average, for Alberta coal, moving in trainload lots from the coalfields of that province to Ontario. It is understood that in naming this rate it will be applicable only during the months of May, June and July, as prior to May adverse weather conditions materially affect the cost of movement, and after Aug., our equipment is needed for transportation of grain. Similar consideration will also of course be given to the rates on coal from the maritime provinces. It is also to be understood that coal operators at shipping points, and distributors in Ontario, will co-operate with the railway company to achieve the common object, as I am sure it will be their desire so to do."

On learning of the extent of the reduction offered, western mine operators expressed dissatisfaction with it, and declared that with such a rate, they could not compete in the Ontario market. G. R. Pratt, Fuel Engineer for the Alberta Government, stated in order to compete with U.S. anthracite, a \$6 rate would be necessary, that he would advise Alberta coal operators to refrain from trying to develop the Ontario market and that further efforts would be made to have the rate reduced to \$6. Premier Greenfield, of Alberta, was reported as having stated that he would use his influence to have the rate reduced to \$6 and that he was prepared to go to Ottawa and Montreal to take the matter up with Sir Henry Thornton and others, but Sir Henry was subsequently reported as saying that the \$9 rate was the lowest which the Canadian National Rys. could make.

The House of Commons has also had a committee looking into the fuel question, under the chairmanship of W. E. Carroll, Liberal M.P. for Cape Breton South and Richmond, N.S., and some of the testimony taken by it in connection with the proposed development of the Ontario market by the Alberta operators is of interest. J. Errington, a mining engineer with experience in Alberta, stated that transportation was the only difficulty in the way of developing the Ontario market. While he admitted that Alberta coal does not contain as many B.t.u.'s per pound as U.S. anthracite, he claimed that more heat could be got out of it, because ordinary furnace temperatures do not allow the anthracite gases to undergo complete combustion, while the Alberta domestic coal burns perfectly. Howard Stutchbury, Alberta Trade Commissioner, stated that he did not want the railways to haul coal at a loss, but claimed to have figures to show that they could haul coal at \$6 a ton and make money. M. J. Butler, formerly

Deputy Minister of Railways and Canals, appeared before the committee to explain a letter he wrote about the fuel situation, which was published in Canadian Railway and Marine World for April, and explained that he had figured only on solid trainload movements, with the empties returning likewise in solid trains. Questioning showed that he was assuming carloads and trainloads which are out of the question, as intimated in our comment in our April number. His theoretical assumption of fifty 100-ton cars, 5,000 net tons, 7,500 gross tons, was shown to be away without question beyond the bounds of immediate possibility.

D. Crombie, Chief of Transportation, and E. P. Mallory, Director, Bureau of Statistics, Canadian National Rys., appeared before the committee on May 15, and was examined as to transportation costs and the method by which the C.N.R. president arrived at \$9 as the lowest rate which could be given. Mr. Crombie showed that calculations had been based on a train of 2,720 gross tons, 1,800 net, made up of 50 cars at 36 tons a car, and also showed by exact calculation which cut expenses as fine as they could be cut, and made no charge for traffic expense at all, that the lowest cost at which such train could be handled would be \$3.772 per train mile. Figuring on 4,252 miles, which allowed for the return of the cars empty, on account of the preponderance of east-bound traffic, this came to \$16,038 for the movement or \$8.91 a ton. He showed, by another set of figures, that if only 40 ton cars were used and with these loaded to the maximum capacity, 46 tons, the cost of movement would come to \$8.34. A lot of discussion ensued, in the course of which members of the committee did not refrain from asking the witnesses many questions about rates, not realizing the distinction between traffic and operating department functions, and in which locomotive tractive effort, grades, car capacity and track and bridge capacity figured prominently. The stupendous amounts which would have to be spent for cars and for bridge strengthening, etc., to approximate conditions on the Virginian Ry., which, as Mr. Crombie pointed out, is a special type of road, built and equipped for a special purpose, viz.: hauling coal, were emphasized, and it was pointed out by the witnesses that the Alberta domestic coal has to be shipped in box cars, so that the provision of large capacity gondolas would not help matters any.

W. B. Lanigan, General Freight Traffic Manager, C.P.R., appeared before the committee on May 16, and gave details as to the method by which he had arrived at a cost of \$9.90 a ton to haul Alberta coal to Toronto. His calculations, which were of a most thorough and convincing nature, were based largely on car mile costs, which he figured as \$230 from Lethbridge to Toronto bringing the cost of moving a 46-ton car of coal to \$457.70, providing for empty car mileage at a rate of 45% of total car mileage, a figure derived from experience. He showed the theoretical nature of any calculations based on the assumption of being able to operate solid trainloads of coal, and explained thoroughly the functions of yards and switching operations and the variation of locomotive hauling capacity on different

divisions. He also explained a few things about the car situation, and showed that there are not likely to be as many box cars in the west in May and June as there are popularly supposed to be, due to traffic movements. These empties, he explained, drift west throughout the summer, after being repaired at Angus shops, Montreal, and are handled so that by Aug. 15, the required number will be on western lines. He believed that if box cars were started east with coal in May, June and July, it would be doubtful whether many of them would be back to the west and in good repair when they would be required for the grain movement. While he agreed with the proposition that a railway may sometimes put in a losing rate, to develop a territory and secure future traffic, he declared that a railway should not be asked to carry traffic at less than cost, and that he would certainly hesitate about recommending a large capital expenditure for equipment to handle a traffic with the prospects of the Alberta coal traffic. Regarding Mr. Butler's observations on the operation on the Virginian Ry., he showed the kind of road it is and the conditions it operates under, and by demonstrating the absurdity of comparing conditions on the Virginian with those in this country, justified his remark that while he did not consider Mr. Butler "absolutely carried away", he did, as a matter of fact, consider him impractical.

The Senate committee, while developing much information in connection with the country's coal deposits, and the use of substitutes for anthracite, did not get information beyond that above given in connection with transportation. H. Stuchbury's testimony, however, made it plain that the Alberta people have no expectation of ever getting their bituminous coal into Ontario, but hope to market only their domestic coal there. He stated that the domestic variety will not stand trans-shipment well, and that therefore he would not recommend a combined lake and rail movement. He also stated that gondolas or open top cars are not suitable for its movement, and that while it will store well under cover, it cannot be kept in the open for any length of time. He described how it had taken the domestic market in Winnipeg away from U.S. anthracite, and stated that with a \$6 rate it would do the same in Ontario.

After studying the evidence presented before the two committees, and reading the opinions given by various persons, we see no reason to change the opinion expressed in our April issue, shortly after the matter was first brought to the fore. There is no doubt but that the Alberta domestic coal is a good household coal—the commission investigating it in Toronto stated it to be very satisfactory, and were of opinion that at \$12.50 a ton to the consumer it would drive U.S. anthracite at \$15.50 out of the market—but the simple fact of the matter is that it has to be brought too far to reach the Ontario market. We would certainly be glad to see it secure the market, but with transportation conditions such that U.S. bituminous is being used as far west as Winnipeg, and even as far as Broadview, Sask., and with other conditions as they are, the chances of the Alberta operators realizing their ambitions do not under the circumstances appear favorable.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Steamship Lines Ltd.—N. FAHEY, heretofore chief clerk, Export and Import Freight Department, Toronto, has been appointed Solicitor, Export and Import Department, there.

C. E. HUNT, heretofore chief clerk, Freight Department, Toronto, has been appointed Solicitor, Freight Department, there, vice E. C. Boland, whose appointment as District Freight Agent, Toronto, was announced in our last issue.

P. J. PEER, heretofore City Passenger Agent, Hamilton, Ont., has been appointed District Passenger Agent, there.

SIR HENRY THORNTON, President, Canadian National Rys., has been elected a director of Canada Steamship Lines.

Canadian Government Merchant Marine.—C. H. IRELAND, who was secretary to the late Hon. W. C. Kennedy, Minister of Railways and Canals, has been appointed an Assistant to General Manager, C.G.M.M., at Montreal.

Canadian National Railways.—ARNOLD ARONOVICI, heretofore Continental Manager, Great Eastern Ry. of England, has been appointed by the President, Sir Henry Thornton, as General Agent, C.N.R., at Paris, France, reporting to W. D. Robb, Vice President, Insurance, Lands, Express, Telegraphs, Colonization, Development, etc., Montreal, with respect to all matters relating to colonization and development in connection with the C.N.R. interests in Canada, and to the European Traffic Manager, Wm. Phillips, in London, Eng., upon all matters relating to traffic. A Paris press cablegram says that the Hotel Scribe has been bought for 28,000,000 francs (about \$1,848,000), and that the Canadian National Railways will occupy the whole ground floor of the building. The basement will be turned into a moving picture theatre showing Canadian views. It is expected that 25 rooms on the second floor will be taken by the Canadian Trade Commissioner, Lt. Col. Hercule Barre.

W. J. ATKINSON, heretofore Superintendent, St. Maurice Division, Quebec, Que., has been appointed Assistant Superintendent, Quebec Terminals, Central Region, vice J. H. Pakenham transferred. Office, Quebec, Que. The St. Maurice Division has been abolished, and the territory attached to the Cochrane and Saguenay Divisions, Quebec District, Central Region.

G. G. BAIRD, heretofore Collection Manager, Land and Townsites Department, Winnipeg, has been appointed Assistant Land Commissioner. Office, Winnipeg.

F. F. CAREY, heretofore Master Mechanic, St. Maurice Division, Quebec District, Central Region, Quebec, Que., has been appointed Master Mechanic, Levis Division, Quebec District, Central Region, vice R. L. Mitchell, assigned to other duties. Office, Levis, Que.

J. H. DUFF, heretofore Assistant Superintendent, St. Maurice Division, Quebec, Que., has been appointed Assistant Superintendent, Cochrane Division, Quebec District, Central Region. Office, Parent, Que.

Dr. W. A. FERGUSON, heretofore Chief Medical Officer, Canadian Government Rys., Moncton, N.B., has been ap-

pointed Assistant Chief Medical Officer, Atlantic Region, C.N.R. Office, Moncton, N.B.

D. McK. FORD, formerly of the President's office, Toronto, has been appointed Office Assistant to Director of Purchases and Stores, at Montreal.

H. G. HANNA, formerly Auditor of Passenger Receipts, C.N.R., Toronto, has been superannuated.

C. L. HARRIS, heretofore Relieving Superintendent, Maritime District, Atlantic Region, has been transferred to the Chief of Transportation's staff at Montreal.

J. M. KERR, Master Mechanic, Saguenay Division, Quebec District Central Region, Quebec, Que., has had his jurisdiction extended from Viaduc to Fitzpatrick, Que., inclusive.

R. E. LAIDLAW has been appointed Solicitor. Office, Toronto.

J. F. LEIGHTIZER, heretofore locomotive man, Moncton, N.B., has been appointed acting Master Mechanic, Island Division, Atlantic Region, vice Peter McQuaid, retired on the Provident Fund. Office, Charlottetown, P.E.I.

J. S. McADAM, heretofore Trainmaster, Ottawa Division, Eastern Lines, G.T.R., Ottawa, Ont., has been appointed Trainmaster, Beauharnois, Cornwall, Hemingford, Rouses Point and Massena Subdivisions, St. Lawrence Division, Montreal District, vice E. S. Cooper, on leave of absence. Office, Montreal.

J. D. MORTON, formerly Special Auditor, C.N.R., Toronto, has been superannuated.

H. A. PALMER, formerly Property Commissioner, G.T.R. lines east of Detroit and St. Clair Rivers, at Montreal, has been appointed Right of Way Agent, Central Region. Office, Toronto.

J. H. PAKENHAM, heretofore Assistant Superintendent, Bridge Subdivision, and Quebec Terminals, Levis Division, Quebec Terminals, Saguenay Division, Quebec District, Central Region, Quebec, Que., has been appointed acting Trainmaster, Alexandra, Hammond and Vanleek Subdivisions, St. Lawrence Division, Montreal District, Central Region, vice J. S. McAdam, transferred. Office, Coateau Jct., Que.

C. S. PUSHIE, Relieving Superintendent, Atlantic Region, is acting as Superintendent, Island Division, Maritime District, Atlantic Region, during the absence of T. B. Grady, on two months leave. Office, Charlottetown, P.E.I.

J. J. RICHARDSON, heretofore Division Engineer, St. Maurice Division, Quebec District, Central Region, Quebec, Que., has been appointed Division Engineer, Cochrane Division, Quebec District, Central Region, vice A. H. Willett, transferred. Office, Cochrane, Ont.

W. H. ROACH, Master Mechanic, Cochrane Division, Quebec District, Central Region, Cochrane, Ont., has had his jurisdiction extended to Fitzpatrick, Que., exclusive of shop.

J. SCHOFIELD, heretofore Architect (Building Standards), Toronto, has been appointed Architect, Engineer of Standards Office, Operation and Construction Department. Office, Montreal.

H. THRUPP, heretofore clerk, has been appointed chief clerk to Division Freight Agent, Prince Rupert, B.C., vice H. McEwan, whose appointment as Division Freight Agent there was announced in our last issue.

J. A. TRUDEL, heretofore Assistant Superintendent, Levis Division, Levis,

Que., has been appointed Assistant Superintendent, Saguenay Division, Central Region. Office, Quebec, Que.

A. H. WILLETT, heretofore Division Engineer, Cochrane Division, Quebec, District, Cochrane, Ont., has been appointed Division Engineer, Nipigon Division, Northern Ontario District, Central Region. Office, Hornepayne, Ont.

Other appointments made in connection with the co-ordination of the Canadian National Rys. consequent on the amalgamation of the G.T.R., are given on another page of this issue, under "Further Co-ordination of G.T.R. with Canadian National Rys."

Canadian Pacific Ry.—H. A. AMY, heretofore Division Master Mechanic, Ottawa Division, Quebec District, Ottawa, Ont., has been appointed Division Master Mechanic, Smiths Falls Division, Quebec District, vice R. McAdam, appointed Division Master Mechanic, Ottawa Division, Quebec District. Office, Smiths Falls, Ont.

W. J. ANDERSON, Travelling Freight Agent, London, Ont., is acting District Freight Agent, there, vice H. G. Buchanan, District Freight Agent, acting District Freight Agent, Toronto.

V. BEARDMORE, heretofore fitter, Chapleau, Ont., has been appointed Locomotive Foreman, Webbwood, Ont., vice P. Pincombe, appointed Locomotive Foreman, Cartier, Ont.

H. G. BUCHANAN, District Freight Agent, London, Ont., is acting District Freight Agent, Toronto, vice G. C. Cochlan, deceased.

A. S. FRASER, heretofore Roadmaster, Broadview, Sask., has been appointed Roadmaster, Wynyard Subdivision, Saskatoon Division, Saskatchewan District, vice P. Sevvick, transferred. Office, Saskatoon, Sask.

A. HART has been appointed acting Roadmaster, Hardisty Subdivision, Saskatoon Division, Saskatchewan District, vice M. Bourne, Roadmaster, transferred. Office, Wilkie, Sask.

O. HIBBERT has been appointed Roadmaster, from Markinch section at mile 68, to Neudorf, Lanigan Subdivision, Saskatoon Division, Saskatchewan District. Office, Lipton, Sask.

T. LEES, has been appointed District Engineer, Alberta District, vice H. Rindal. Office, Calgary, Alta.

J. U. LEMIEUX, heretofore stenographer, city freight office, Quebec, Que., has been appointed Contracting Freight Agent, there, as reported in our last issue.

R. McADAM, heretofore Division Master Mechanic, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Division Master Mechanic, Ottawa Division, Quebec District, vice H. A. Amy, appointed Division Master Mechanic, Ottawa Division, Quebec District. Office, Ottawa, Ont.

W. J. McKAY, heretofore Assistant Locomotive Foreman, Chapleau, Ont., has been appointed Locomotive Foreman there, vice H. Smith, appointed Locomotive Foreman, John St., Toronto.

A. G. MURDOCH has been appointed Roadmaster, Expanse Subdivision, Moose Jaw Division, Saskatchewan District. Office, Assiniboia, Sask.

P. PINCOMBE, heretofore Locomotive Foreman, Webbwood, Ont., has been appointed Locomotive Foreman, Cartier, Ont., vice J. St. Louis, who has been given work as hostler there.

J. H. SHEAHAN, heretofore Road-

master, Winnipeg, has been appointed Roadmaster at Bassano, Alta., vice J. R. Padgett, transferred to Construction Department.

H. SMITH, heretofore Locomotive Foreman, Chapleau, Ont., has been appointed Locomotive Foreman, John St., Toronto, vice J. H. Wilson, appointed Division Master Mechanic, Sudbury Division, Algoma District, Sudbury, Ont.

J. STEWART has been appointed Roadmaster, from Markinch section, mile 68, to Lanigan, also of the Naicam Sub-division, Saskatoon Division, Saskatchewan District. Office, Lanigan, Sask.

E. TREMBLAY, heretofore fitter, North Bay, Ont., has been appointed Assistant Locomotive Foreman, Chapleau, Ont., vice W. J. McKay, appointed Locomotive Foreman there.

C. A. WHEELER, heretofore Division Master Mechanic, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed District Master Mechanic, Quebec District, vice Capt. A. H. Kendall, M.C., resigned. Office, Montreal.

J. H. WILSON, heretofore Locomotive Foreman, John St., Toronto, has been appointed Division Master Mechanic, Sudbury Division, Algoma District, vice C. A. Wheeler, appointed District Master Mechanic, Quebec District, Montreal. Office, Sudbury, Ont.

Roberval-Saguenay Ry.—Capt. A. H. KENDALL, M.C., heretofore District Master Mechanic, Quebec District, C.P.R., Montreal, has been appointed Manager, Chicoutimi Pulp Co., and has supervision of the company's mills at Chicoutimi and Val Jalbert, Que., the Saguenay Light & Power Co., and the Roberval-Saguenay Ry. Office, Chicoutimi, Que.

Reduction in Rates on Grain for Milling and Export.

The Canadian National and Canadian Pacific Rys. announced, on May 10, that, effective May 15, rates on milling-in-transit grain, and flour, from lower lake ports to the Atlantic seaboard, for export, would be reduced by $2\frac{1}{2}c$ per 100 lb. We are officially advised that this action was taken on the strength of representations made to the railways, by the milling interests, to the effect that very keen competition was being met in the European market, and that its object was to afford assistance to the milling industry. Some time ago the Dominion Millers' Association and the Canadian National Millers' Association asked the Dominion Government to review the Board of Railway Commissioners' decision, in the case concerning flour arbitraries over wheat for export, which was unfavorable to the millers, the matter being heard by a sub-committee of the Privy Council on April 19, 1922. An order in council was passed, Oct. 27, 1922, dismissing the petition. Subsequently the Dominion Millers' Association sent a deputation to Ottawa to request a re-opening of the case, and although it received further consideration, no reversal of judgment was obtained. F. C. Cornell, Secretary, Canadian National Millers' Association, is reported, in a Montreal press dispatch, as having expressed the milling interests' satisfaction with the relief offered by the railways, on their own initiative.

Monctonians' Occupations.—A recent enumeration of the City of Moncton, N.B., shows that of 6,763 employed persons, 3,473 were engaged in transportation work in some form or other.

President Beatty on Immigration, Etc.

E. W. Beatty, K.C., President, C.P.R., was the principal guest at the Hamilton, Ont., Chamber of Commerce annual dinner recently. He referred to a number of matters affecting the development of Canada and transportation interests, and said one of Canada's needs is what he would term a "balanced immigration" which would supply industries and farmers with the best available help. Canada has been tardy in proceeding to frame its immigration policy as compared with other parts of the Empire. If Canadians believe in Canada they must know that it can support more than 9,000,000 people and that it will require more than that number to support it. Certain agencies had, to a considerable extent, counteracted the propaganda of despondency; Canadians are regaining faith in themselves; immigrants are coming forward in increasing numbers, and many more will continue to come, consequent upon the increasing confidence and optimism which is being manifested. Removal of certain government restrictions is another factor conducive to the entry of the best type of immigrants. In connection with industrial development it is essential that Canada ensure the entry of skilled artisans. It is economically unsound to count on recruiting industrial labor from an agricultural population or from agricultural immigration. Even if the agricultural immigrants remain on the land it is questionable whether it would be the best thing for Canada to confine immigration of male labor to this class. Farmers require an enlarged home market for their produce, and this can only be secured through building up Canada's industrial and commercial population. Hence the necessity of a balanced immigration. For all classes the burden of taxation is too heavy, and Canada must move in the direction of decreasing the tax burden on the population.

Turning to transportation matters Mr. Beatty said that for the past four or five years no railway in Canada could be said to have secured a reasonable return on the capital invested, or to have secured an adequate margin of earnings to ensure proper participation in the country's development. The Canadian National Rys. burden on the taxpayers would be lightened as the railway progressed and succeeded. The same factors which would contribute to the Canadian National's success would make possible the C.P.R.'s greater success.

The General Eastern Passenger Agents' Association, to the number of 60, visited Montreal, May 3, as guests of the C.P.R., having travelled from New York by New York Central and Delaware and Hudson Lines, they were taken on a trip round the city by the Canadian Transfer Co.'s motor vehicles and were guests at a luncheon at the Place Vigor Hotel, at which G. E. I. Ussher, General Passenger Traffic Manager, C.P.R. presided. Some of the party returned to New York the same evening via the Delaware and Hudson, while others went to Quebec on a Canadian Steamship Lines trip.

Welland Terminal Facilities.—The Board of Railway Commissioners has recommended the Governor-in-Council to sanction an agreement made July 1, 1922, between the Michigan Central Rd. Co., and the Toronto, Hamilton and Buffalo Ry. Co., for the use by the latter railway company for the M.C.R.'s terminal and other facilities at Welland, Ont.

The Car Situation: Bad Order, Surplus and Shortage.

The Railway Association of Canada has issued a statement showing that, at May 1, out of a total of 182,585 freight cars on Canadian lines, 13,511 were in bad order, or 7.4% of the total. The A.R.A. allowance for bad order cars on a 7% basis would be 12,781, so that the excess over that allowance was 730 cars. The car shortage for one day's loading was 1,360 cars.

The Railway Association has issued the following circular: "There being a lack of uniformity by railways in preparing information shown on R.A.C. form 2, Report of Car Shortages and Car Surpluses, it is recommended to member lines that the shortages shown in this report be based upon the actual daily requirements on date it is prepared, and not upon accumulated orders."

The American Railway Association's Car Service Division reports that, on April 15, the total number of freight cars on U.S. Class 1 railways was 2,280,011, of which 214,051, or 9.4%, were in bad order. Out of 1,051,022 box cars, 88,537, or 8.4%; out of 60,417 refrigerator cars, 6,982, or 11.6%; out of 952,322 gondolas, 99,253, or 10.4%; out of 80,481 stock cars, 7,814, or 9.7%, and out of 93,772 flat cars, 8,487, or 9%, were in bad order. At April 30, on the U.S. class 1 roads, there was a shortage of 13,940 box cars, and of 17,634 coal cars, with a total shortage of 35,282 cars.

United States Railways' Financial Results.

The U.S. class 1 railways, for the first time since the Interstate Commerce Commission fixed the "fair" rate of return on valuation as 5 $\frac{3}{4}$ %, exceeded this return in March, when the railway operating income was \$83,568,473, which is at the rate of 5.84% on an annual basis. In March 1922, the net operating income was \$83,487,078, which was at the rate of 5.96% on the then tentative valuation, but at that time the 5 $\frac{3}{4}$ % rate had not been set, the previous rate set by the Commission being to all intents and purposes 6%.

For the first three months of 1923, net operating income was \$183,124,865, an increase of 13.98%, compared with the first three months of 1922. This was representative of a rate of return on tentative valuation of 5.13%, compared with 4.60% in the first three months of 1922.

The U.S. class 1 roads in March provided freight transportation to the extent of 39,000,000,000 net ton miles: an increase of 19% over the figures for March 1922, and a record for any March. As car loading is now running at a high figure, and as heavy traffic is looked for during next autumn, the U.S. railways' prospects seem more favorable at present than they have for some time past.

G.T.R. Officials' Gratuities Enquiry.—F. T. Congdon, K.C., who was appointed by the Dominion Government, on April 20, as a commissioner to enquire into the bonuses, or gratuitie, given certain G.T.R. officials, full particulars of which were published in Canadian Railway and Marine World for May, has resigned, the reason being given ill health, and F. H. Honeywell, barrister, Ottawa, has been appointed to make the enquiry instead.

The British Columbia and Alberta Rate Appeal and the Pacific Grain Route.

British Columbia's and latterly Alberta's, dissatisfaction with the Board of Railway Commissioners' decision in the equalization of rates cases has been dealt with fully in previous issues of Canadian Railway and Marine World, to the point where, as noted in the May issue, the case was discussed in the House of Commons on a motion introduced by J. A. Clark, Conservative M.P. for Burrard, B.C. The latest information available is to the effect that the Dominion Cabinet will not hear the appeal till the present session of Parliament is over, but British Columbia and Alberta are giving their case all the publicity possible and making it appear as favorable as they can. Following the Winnipeg Board of Trade's decision to oppose the appeal, the Vancouver Sun, which has been among the British Columbia Premier's strongest backers in demanding rate equalization, published a full page advertisement in which it claimed that the rate on grain from Grande Prairie, in the Peace River district of Alberta, to Vancouver, 1,182 miles, is 29c. a bush.; and from Calgary to Fort William, 1,253 miles, it is 15½c. a bush., from Calgary to Vancouver, 640 miles, it is 15c. a bush., and from Edmonton to Fort William, 1,240 miles, it is but ½c. more, or 15½c. a bush. The Sun then asked: "Do Winnipeg business men want Grande Prairie settlers to pay 29c. a bush. for hauling their grain 1,182 miles westward to Vancouver, when a fair charge based on eastbound rates would be 14c.? Do Winnipeg business men want the farmers of Calgary and Edmonton districts to pay 15c. a bush. for hauling their grain to Vancouver, when a reasonable rate, based on eastbound charges, would be 9c.? What other construction could be placed on the Winnipeg Board of Trade's action in asking Premier Bracken to oppose the west's appeal for a removal of discriminating rates like those above given?"

A Winnipeg press despatch of May 11, credited Isaac Pitblado, K.C., who has been retained by the Winnipeg Board of Trade to oppose the B.C. appeal, with stating that British Columbia is unjustly accusing Winnipeg of trying to hurt B.C. interests, as Winnipeg is not going to fight the B.C. appeal on commodity rates, but is going to oppose it only in so far as class and distribution rates are concerned, i.e., only in connection with rates which would cut into Winnipeg's business as a distributing center for western territory. He was also quoted as saying that Premier Oliver is mixing the commodity rates with class and distributing rates, in the statements he is broadcasting, for propaganda purposes.

A large delegation from Edmonton also met Premier King and several other ministers at Ottawa on May 8, and presented a memorial signed by officers of about 200 boards of trade and endorsed by the Alberta Government, urging the immediate development of a second grain outlet, via the Pacific Coast, and the erection of storage, cleaning and hospital elevators at Edmonton. The memorial stated that even under existing rail rates the breaking point of the eastbound and westbound routes for grain is about the center of Saskatchewan, which means that approximately 100,000,000 bush. of grain can be moved out more economically via the Pacific than via the Atlantic. The delegates pointed out that although the Government has

already given evidence in its faith in the westbound route, by providing for an increase of 2,500,000 bush. in the terminal elevator facilities at Vancouver, that was only a start towards providing the facilities needed, among which they claimed should be those desired at Edmonton. The Premier promised that the Board of Grain Commissioners would be asked to report on the advisability of going ahead with the development asked for.

Arguments for reduced grain rates to the Pacific coast, and for the erection of elevators at Edmonton were advanced by J. M. Imrie, of the Edmonton Journal on May 9, before the House of Commons Committee appointed to enquire into agricultural conditions. He stated that the use of a new all-year-round route to the west would have a wholesome competitive influence upon transportation charges via the eastern route, and that in that way the agricultural industry of eastern Saskatchewan, Manitoba and Eastern Canada would benefit to a great extent. He said that under present tariffs there is a potential saving to Alberta farmers of 7c. a bush. by sending grain via the western route, and that if the grain rates were equalized there would be an additional saving of from 2 to 6c., the extra benefit varying with the individual farmer's location. He claimed that on the Canadian National Rys., there are heavier grades for eastbound traffic than there are for westbound traffic through the mountains, a thing difficult for eastern people to understand, and he stated that, although he is not an expert in railway economics, he was unable to see any excuse for higher westbound rates than the eastbound ones so far as the C.N.R. is concerned. He said that he considered a second well-established outlet for grain imperative, and thought that the establishment, on a permanent basis, of the western route would, by creating competitive transportation conditions, by extending harvesting operations over a longer period, and by preventing the rush to dump wheat on the market during the period of Great Lakes navigation, give the farmers a better price. He claimed there should be interior reservoirs for grain at Edmonton as at Calgary. At present, when a farmer ships wheat to Vancouver, he does not know if it will grade good enough for export or not; if it does not, the former is taxed another 10c. a bush. in additional freight rates, due to the domestic rate being that much higher than the export rate, and in addition has his wheat in Vancouver in a very poor domestic market, but with elevators at Edmonton and a grading system established, the farmer would not be taking the chance which he now does in shipping west, because his grain would be graded as Edmonton, and if rejected as unfit for export, he would have it in a good domestic market, or be in position to reach one.

The British Columbia and Alberta people are leaving no stone unturned to influence opinion favorably on their demands for rate equalization and more elevator and grain marketing facilities for the western route. Of course, they are not advancing as arguments any of the factors which caused the mountain differential to be applied in the first place, or any of the considerations which influenced the Board of Railway Commis-

sioners to give the decision it did. As against the arguments advanced by the B.C. and Alberta people there must be weighed the arguments that investigation has demonstrated that the cost of operation per car mile is 56.77% higher in B.C. than on the prairies; that the present eastbound freight rates from B.C. are lower than those over U.S. lines from Seattle and other U.S. Pacific coast ports; that westbound rates into B.C. are lower than on U.S. railways for corresponding hauls, and that B.C., in virtue of her location adjacent to the Pacific, is the recipient of many favorable rates which other localities are denied. The B.C. and Alberta people do not advance as rate equalization arguments, the fact that 100 lb. of apples may be shipped from Vernon, B.C. to Toronto, 2,409 miles, for \$1.50, while it costs \$1.76 to ship the same 100 lb. from Annapolis Royal to Regina, 2,303 miles.; that the rate on canned fish from Vancouver to Montreal, 2,882 miles, is \$1.05, and from Halifax to Regina, 2,516 miles, it is \$1.69, or that Vancouver receives many commodities from the east at lower rates than do many points greater distances inland from the Pacific coast.

After perusing the numerous volumes of evidence covering this case when it was before the Board of Railway Commissioners, the only logical conclusion one can come to is that if the Dominion Cabinet wants to settle the matter on purely economic grounds, and without reference to any political or near-political considerations whatever, its members will be busily engaged in studying the matter, and related facts and theories, for some years. And, for the simple reason that it should be settled purely upon economic grounds, the only body in the country qualified to deal with it is the Board of Railway Commissioners. The House of Commons debate reported in our May issue wherein was mentioned the discovery that J. A. Clark, M.P. for Burrard, B.C., had, presumably unintentionally, on the order paper for some weeks a resolution which proposed extraordinary discrimination against British Columbia, does not detract from the reasonableness of this view.

Canadian Railway Club Officers.

The following were elected at the annual meeting in Montreal, May 8:—President, H. R. Naylor, Assistant Works Manager, Angus shops, C.P.R.; First Vice President, C. E. Brooks, Chief of Motive Power, Canadian National Rys. Second Vice President, J. A. Shaw, Electrical Engineer, C.P.R. Executive committee.—E. R. Battley, Superintendent Motive Power, Montreal District, Canadian National Rys. J. Burns, Works Manager, Angus Shops, C.P.R. W. F. Connal, Mechanical Engineer, Canadian National Rys. J. D. Muir, Assistant Works Manager, Angus Shops, C.P.R. T. M. Hyman, Superintendent Car Shops, Canadian National Rys. G. Whately, Assistant Superintendent, Motive Power, C.P.R. Secretary W. A. Booth, Chief Draftsman Motive Power and Car Department, Canadian National Rys. Treasurer, P. C. Reynolds, Chief Clerk, to Chief of Motive Power and Rolling Stock, C.P.R. The retiring President, T. W. Wilson, Superintendent Motive Power Shops, Canadian National Rys., was presented with a souvenir by A. A. Goodchild, General Storekeeper, C.P.R.

Railway Rolling Stock Orders and Deliveries.

Knox Bros. Ltd., Montreal, has bought 14 standard gauge flat cars from Canadian Equipment Co., 36 ft. long, 60,000 lb. capacity.

Donaston Breakey Ltd., Breakeyville, Que., has received a 4-wheel (0-4-0-T) locomotive, from Montreal Locomotive Works, details of which were given in a previous issue.

Victor Osterberg, Kingston, Ont., has bought a rebuilt, 4-wheeled Vulcan saddle tank locomotive, and 6 four-yard, two-way Western dump cars, all 36 in. gauge, from Canadian Equipment Co.

The Northern Construction Co. has bought a second hand Marion 300 full revolving steam shovel, and a 35 to 40 ton Brownhoist, 8-wheel, double drum, locomotive crane, from Canadian Equipment Co., for power development work in Newfoundland.

Canadian Salt Co., Windsor, Ont., has bought a rebuilt 15 to 17 ton Brownhoist, 8-wheel, double drum locomotive crane, from Canadian Equipment Co. It has a 48 ft. boom, and has been equipped with a new Ontario boiler, 125 lb. pressure, by John Inglis Co., Toronto.

Schroeder Mills and Timber Co., Pake-sley, Ont., has bought a second hand, 40-ton, 4-wheeled Pennsylvania switching locomotive, from Canadian Equipment Co. It has a separate tender, is of standard gauge, cylinders 17 x 24 in., 18,865 lb. tractive power, 80,200 lb. in working order.

Grenville Crushed Rock Co. has bought an Osgood model 73 railway type steam shovel, second hand, and 20 second hand 16 cu. yd. air dump cars, from Canadian Equipment Co., for some rip-rap work along the C.P.R., where it parallels the St. Maurice River, near Shawinigan Falls, Que.

Imperial Oil Ltd. has bought a second hand Baldwin, 4-wheel, saddle tank locomotive, 52 tons, from Canadian Equipment Co. It is standard gauge, 103,000 lb. in working order, cylinders 17 x 24 in., 180 lb. working pressure, steam brakes, automatic couplers, electric headlights front and rear, 23,100 lb. tractive power, with boiler built to Ontario specifications.

P. Lyall and Sons Construction Co. has bought a standard gauge, saddle tank, 0-4-0 locomotive, 37 tons, 15 x 24 in. cylinder, and 12 twelve-yard air dump cars, second hand, from Canadian Equipment Co., for its contract on Welland Ship Canal.

Solvay Cement Co. has ordered a 4-wheel switching (0-4-0) locomotive from Montreal Locomotive Works. Following are the chief details:—

Gauge	4 ft. 8½ in.
Weight, total	80,000 lb.
Wheel base, total	7 ft.
Cylinders, diar. and stroke	14 x 22 in.
Driving wheels, diar.	40 in.
Driving journals	7 x 8 in.
Boiler, type	Radial stay, straight top
Boiler pressure	190 lb.
Firebox, length and width	46½ x 59½ in.
Tubes, no. and diar.	111 2 in.
Tubes, length	11 ft. 8 in.
Heating surface, tubes	675 sq. ft.
Heating surface, firebox	60 sq. ft.
Heating surface, total	735 sq. ft.
Grate area	16.2 sq. ft.
Tractive power	17,400 lb.
Factor of adhesion	4.6
Tank, type	Saddle
Capacity, water	1,700 gal.
Capacity, coal	1,600 lb.

The Dominion Coal Co.'s steel hopper coal cars, to be used on the Sydney and Louisburg Ry., 100 of which have been

built by Eastern Car Co., as mentioned in our last issue, have the following dimensions,—length inside, 30 ft. 0¼ in., width inside 9½ ft., height from rail to top of frame, 10 ft. They will have a carrying capacity of 100,000 lb., but each car is designed to carry 120,000 lb. The bodies are all steel, and in general the A.R.A. design is maintained, as well as its standards and specifications. They are self cleaning, with the usual hopper and floor sheets, and with 4 dump doors, operated in pairs from the car sides. The trucks are A.R.A. standard arch bar design, with the following specialties,—Simplex brake bolsters, National journal boxes, A.R.A. axles, 5½ x 10 in., cast iron wheels 33 in. diar. 750 lb. each, Cardwell G-11-A draft gear, A.R.A. forged yoke and Westinghouse 10 x 12 in. air brake equipment. The cars are claimed to be the first built in Canada for which all material has been produced in Canada, they being designed, using all rolled sections and plates within the limits of the rolling capacity of the British Empire Steel Corporation, of which the Eastern Car Co., is a constituent. The specialties mentioned, as well as miscellaneous materials are also made in Canada. The company is having another 100 of these cars built to the same specifications for delivery later this year.

Canadian Pacific Railway.

The C.P.R.'s order, given the Eastern Car Co., as stated in Canadian Railway and Marine World for April, should have been referred to as 300 41-ft. flat cars, not 300 freight cars.

The C.P.R., between April 12 and May 14, ordered the following rolling stock from its Angus shops, Montreal: 1,000 steel underframe, double sheathed box cars, 36 ft. long; 300 steel frame automobile cars, 40½ ft. long; 7 steel snow ploughs. The decision to place these orders was mentioned in our last issue. The company has also bought a Jordan all steel ballast spreader.

Canadian National Railways.

Rolling stock had been received up to May 21, as follows,—589 box cars, part of order for 1,000, numbered 428,000 to 428,999; 100 Hart ballast cars, nos. 99,500 to 99,599, order completed, from Canadian Car and Foundry Co.; 100 hopper cars, nos. 119,550 to 119,649, order completed, from Eastern Car Co.

Since the information given in Canadian Railway and Marine World for May, was received, orders have been given as follows: Canadian Locomotive Co., 10 six-wheeled switching locomotives; Canadian National Rys. shops, Port Huron, Mich., 15 milk cars; and Canadian Car & Foundry Co., 6 steel first class cars, increasing the order then mentioned to 41. It was intended originally to build 6 of these cars at the old G.T.R. shops at Port Huron, Mich.

The House of Commons, on motion by Mr. Meighen, leader of the Opposition, passed an order recently for a return showing all orders for equipment placed by the Canadian National Rys. since Oct. 4, 1922, including orders for cars of different kinds, separately stated; for locomotives of different kinds, separately stated, with prices in each case, or basis of prices, and comparison of such prices with last prices at which similar goods were ordered; the said return to contain also names of firms, and location of

factories, with whom orders have been placed, and where same are to be filled; also showing all correspondence and requisitions between officers of the companies, and any member of the Government referring to the necessity for such orders.

It was stated in Canadian Railway and Marine World for February that 1,000 thirty-ton steel frame box cars were to be converted into stock cars, and 50 box cars into cabooses, at the C.N.R. shops at Moncton, N.B., and details of the work to be done were given in our March issue. It was stated early in May that the conversion of 750 of the freight cars into stock cars would be done by Canadian Car & Foundry Co., at its Amherst, N.S., works, instead of at the C.N.R.'s Moncton shops, intimation to that effect having been given in a telegram to Amherst by H. J. Logan, M.P. for Cumberland, N.S. We are officially advised that 500 30-ton box cars are to be converted at Amherst into stock cars, and that 500 30-ton steel underframe box cars are to be converted into stock cars at the C.N.R. Moncton shops. The 50 box cars, which it was first announced would be converted into cabooses at Moncton, are to be converted at Amherst.

Following are chief details of the 10 six-wheeled switching locomotives, ordered from Canadian Locomotive Co.:—

Weight in working order	175,900 lb.
Wheel base, engine	11 ft. 6 in.
Wheel base, engine and tender	46 ft. 1½ in.
Heating surface, firebox	167 sq. ft.
Heating surface, tubes and flues	1,778 sq. ft.
Heating surface, total	1,945 sq. ft.
Driving wheels, diar.	56 in.
Driving wheel centers	Cast steel
Driving journals, diar. and length	9½ x 12 in.
Cylinders, diar. and stroke	22 x 26 in.
Boiler, type	Radial stayed, extended wagon top
Boiler pressure	190 lb.
Tubes, no. and diar.	178 2 in., 28 5½ in.
Tubes, length	12 ft. 4 in.
Valve gear	Baker
Fire door	Franklin butterfly
Superheater	Superheater Co. Schmidt type A
Power reverse gear	Ragonnet
Headlight	Pyle National 14
Adjustable driving box wedges	Franklin
Cylinder lubricator	Detroit automatic sight feed
Packing	King
Automatic grease cellars	Franklin
Inspirators	Hancock E. A. lifting type, 5,000 gals. capacity
Boiler check	Hancock vertical with stop valve
Air brake	Westinghouse E.T.
Steam heat	Leslie type A.C.
Sanders	Hanlon
Safety valves	World
Tender, weight loaded	131,850 lb.
Tender frame	Commonwealth
Draft rigging	Miner
Radial buffer	Economy
Brake beams	Buffalo
Brake shoes	Diamond S
Tank, type	Water bottom
Tank, capacity, water	5,000 imp. gals.
Capacity, coal	9 tons
Tender truck, type	4-wheel equalizer
Truck wheel diar.	33 in. chilled cast iron

Large Coal Orders.—The C.N.R. has ordered from the British Empire Steel Corporation over 1,000,000 tons of coal to be shipped by water, principally to Levis, Quebec, and Montreal, the order involving an expenditure of between \$5,000,000 and \$6,000,000. The C.N.R. also expect to use about 75,000 tons of New Brunswick coal, this year and purchases have been made from Minto Coal Co., Welton & Henderson, Rothwell Coal Co., Miramichi Lumber Co., and Harvey Welton. In this connection it is stated that a spur line of some five miles is to be built, to give connection between the C.N.R., at Chipman, and the Minto district.

Further Co-ordination of G.T.R. With Canadian National Railways.

Finance and Accounting Work.

Effective May 1, important changes were made in regard to the financial and accounting work. Corporate financial matters, payments, etc., are being handled at the general offices in Montreal, under the General Treasurer and the General Comptroller. The entire revenue accounting is being done in Montreal under the General Auditor of Revenues.

A regional treasurer, and a regional comptroller, have been appointed for each region, with offices at Moncton, N. B., for the Atlantic Region; at Toronto for the Central Region and at Winnipeg for the Western Region. The operating accounts particularly applying to the respective regions are now dealt with through the regional comptrollers' offices, and disbursements are made through the regional treasurers' offices. Each regional treasurer reports to the General Treasurer at Montreal, and each regional comptroller reports to the Assistant General Comptroller at Montreal.

All freight, railway and ticket agents pay their receipts into local banks for transfer to a bank at regional headquarters.

Finance and Accounting Department Appointments.

James A. Yates, General Treasurer, has announced the following:—

Geo. F. Ancrum, heretofore Assistant Treasurer, G.T.R., to be Treasurer, C. N.R., handling headquarters and subsidiary companies' accounts. Office Montreal.

Legal Department Appointments.

R. H. M. Temple, Regional Counsel, Western Region, Winnipeg, has announced the following:—

J. N. Brooks, to be Assistant General Claim Agent, Western Region, Winnipeg.

J. H. Parkinson, to be Assistant to General Claim Agent, Western Region, Winnipeg.

Thos. Nichol, Winnipeg; O. H. Wickland, Saskatoon, Sask.; S. Taylor, Edmonton, Alta.; Wm. Johnson, Duluth, Minn.; and Wm. J. McRae, Virginia, Minn., to be District Claims Agents.

Passenger Traffic Department Appointments.

H. H. Melanson, General Passenger Traffic Manager, has announced the following rearrangement of staff, in respect to mail, baggage and milk service.

G. D. LeBlanc to be General Baggage Agent, Atlantic Region, vice G. C. Allen, assigned to other duties, Office Moncton, N.B. The position of Assistant General Baggage Agent, Moncton, to be abolished.

L. L. Grabill, General Baggage Agent, Central Region, Toronto, has had his jurisdiction extended to include all lines in the Central Region.

H. M. Spence to be General Baggage Agent, Western Region, Office, Winnipeg. The position of Assistant General Baggage Agent, Winnipeg, has been abolished.

E. M. McDonald continues as Assistant General Baggage Agent, lines, Jasper, Alta., and west, including Canadian National, Pacific coast services, Western Region, reporting to General Baggage Agent, Western Region, Winnipeg. Office, Vancouver, B.C.

The general baggage agents report to their respective general passenger agents on baggage and mail traffic, and to the

Manager of Passenger Service Bureau, Montreal, on matters pertaining to royal mail service.

The Manager of Passenger Service Bureau, Montreal, in co-operation with regional passenger traffic officers, has general supervision over baggage and mail traffic for the system.

C. W. Johnston, Passenger Traffic Manager, has announced the following:—

W. J. Gilkerson, heretofore General Agent, Passenger Department, G.T.R., Minneapolis, Minn., to be General Agent, Passenger Department G.T.R., and C.N.R., Boston, Mass., vice W. R. Eastman, whose appointment as Assistant General Passenger Agent, G.T.R., and General Western Passenger Agent, C.N.R. Chicago, Ill., was announced in our last issue.

L. L. Grabill, General Baggage Agent, Central Region, has announced the following, with approval of R. L. Fairbairn, Manager, Passenger Service:—

W. P. Corking, heretofore chief clerk, General Baggage Department, G.T.R., Toronto, to be District Baggage Agent, C.N.R., with territory, Province of Ontario, and also Suspension Bridge, Black Rock and Buffalo, N.Y. Office, Toronto.

T. P. Mooney, heretofore Baggage Agent, G.T.R., Montreal, to be District Baggage Agent, C.N.R., with territory Province of Quebec, Riviere du Loup, Monk and west, not including Riviere du Loup, and lines in New England and in New York State, south of Montreal, Office, Montreal.

G. E. Weeks, heretofore clerk in charge of baggage matters, General Passenger Agent's office, G.T.R. Western Lines, Chicago, Ill., to be District Baggage Agent, C.N.R., with territory, lines west of Detroit and St. Clair Rivers, in Michigan, Indiana and Illinois, Office, Chicago, Ill.

From May 1, train and station records, reports and statements of mail, baggage and milk traffic are forwarded to the district passenger agent of the territory.

H. R. Charlton, Manager, Advertising Bureau, has announced the following:—

W. C. Riddell, heretofore Advertising Agent, Quebec and Ontario Lines, Toronto, to be Advertising Agent, Central Region, Office, Toronto.

A. H. Lindsay, to be Advertising Agent, Atlantic Region, Office, Moncton, N.B.

C. W. Higgins, heretofore Advertising Agent, Western Lines, Winnipeg, to be Advertising Agent, Western Region, Office, Winnipeg.

Changes in Divisions, Central Region.

Circulars have been issued announcing territorial changes as follows, in addition to those published in Canadian Railway and Marine World for May:—

By W. U. Appleton, General Superintendent, Atlantic Region. The St. Quentin Subdivision of the Campbellton Division, Maritime District from Tide Head, N.B., to National Transcontinental Ry. Jct. 105.74 miles, has been transferred to the Edmundston Division, Maritime District, and all operations thereon now come under the jurisdiction of Superintendent F. Griffin, Edmundston, N.B. All accounting and preparation of statistical reports in connection with St. Quentin Subdivision are now handled by the Edmundston Division.

By W. R. Davidson, General Superintendent, Montreal District. The Portland Division of the G.T.R. formerly ex-

tending from Portland, Me., to Island Pond, Vt., 149.52 miles, has been extended from Island Pond to the east yard limit board at Southwark Yard, near Montreal, Que., 140.0 miles, and also to include the old third district between Richmond and Chaudiere, Que., 87.18 miles, and the branch line to Doucets Landing, Que., 35.34 miles, the whole under the jurisdiction of A. B. McNaughton, Superintendent, whose office has been transferred from Portland, Me., to Richmond, Que.

By W. R. Davidson, General Superintendent, Montreal District, Central Region. The old G.T.R. 30th district, between Ottawa, Ont., and Swanton, Vt., 138 miles, including branch from South Indian to Rockland, Ont., 15.96 miles, and from Glen Robertson to Hawkesbury, Ont., 21.02 miles, in addition to the old G.T.R. 4th District, Montreal, Rouses Point and Massena Springs Subdivision, Montreal, to Massena Springs, N.Y., 95.70 miles; the Hemmingford Subdivision, St. Isidore, Que., Jct. Quebec to Moores Jct., N.Y., 2.15 miles; the Beauharnois Subdivision, St. Martins Jct. to Beauharnois, Que., 5.90 miles, and the old G.T.R. 5th District, Montreal to Brockville, Ont., 125.64 miles, are under the jurisdiction of J. J. Connolly, Superintendent, St. Lawrence Division, Montreal District, Central Region, at Montreal.

Superintendent's Divisions, Central Region.

The old G.T.R. lines, now comprised in the Canadian National Rys., Central Region, have been divided into divisions, under superintendents, with headquarters as follows:—Portland Division, Montreal District, A. B. McNaughton, Richmond, Que., transferred from Portland, Me., St. Lawrence Division, Montreal District, J. J. Connolly, Manager, Belleville Division, Montreal District, J. D. McMillan, Belleville, Ont. Allandale Division, formerly Barrie Division, Southwestern Ontario District, W. E. Weegar, Allandale, Ont. Stratford, Ont. London Division, Southwestern, Ontario District, C. Forrester, London, Ont. St. Thomas Division, Southwestern District, H. W. Matthews, St. Thomas, Ont. Detroit Division, Michigan District, T. King, Durand, Mich. Chicago Division, Michigan District, D. T. Crawford, Battle Creek, Mich.

Co-ordination Notes.

In the co-ordination of the G.T.R. with the Canadian National Rys., the whole system has been divided first into regions, then into districts, then into divisions, and then into subdivisions. The old G.T.R. plan of designating subdivisions as districts, with numbers, has been abandoned, and they are now designated by names only.

The old Canadian Northern Ry. yard at Hurdman, Ottawa, has been closed, and the whole yard business for the co-ordinated lines has been concentrated at the former G.T.R. yards, which will effect a considerable saving in operating costs.

D. E. Galloway, Assistant to President; A. J. Hills, Assistant to Vice President, Operation and Construction Departments, and W. S. Harrison, General Auditor of Revenues, arrived in Moncton, N.B., from Montreal, on May 22, a press report stating their object being to look into the question of reimbursing employees who owned their homes, and had to remove to Montreal in consequence of the centralization of accounting there.

Canadian Pacific Railway Construction, Betterments, Etc.

Fredericton Station.—A press report states that plans have been prepared for a new station to be built at Fredericton, N.B., of somewhat similar size and construction to the Sherbrooke, Que., one, and work will be started immediately, with the expectation of having it finished in the autumn.

Lachute Subdivision Bridges.—We are officially advised that the following bridges on the Lachute Subdivision, Quebec District, are being reconstructed:

Bridge 56.8, Kingly Branch.—Existing 37 ft. deck plate girder span to be replaced by a 30 ft. I beam span.

Bridge 60.1, Calumet River.—Existing 50 ft. deck truss span to be replaced by a 50 ft. deck plate girder span.

Bridge 62, La Rouge River.—Existing bridge, consisting of three 150 ft. deck truss spans, to be replaced by three spans of similar type and dimensions, but of heavier structure.

Bridge 64.3, Riviere au Cheve.—Existing 50 ft. deck truss span to be replaced by a 50 ft. half deck plate girder span.

Bridge 67.2, Salmon Creek.—Existing 50 ft. deck truss span to be replaced by a 50 ft. half deck plate girder span.

Bridge 72.8, Salmon River.—Existing 100 ft. through truss span to be replaced by a 100 ft. deck plate girder span.

Bridge 79.17, Papineauville Creek.—Existing 18 ft. deck plate girder span to be replaced by an 18 ft. I beam span.

Bridge 97.6, Trepanier Creek.—Existing 29 ft. deck plate girder span to be replaced by a 25 ft. Bethlehem I beam span.

Bridge 80.1, Trepanier Creek.—Existing 30 ft. deck plate girder span to be replaced by a span of similar type and dimensions, but of heavier structure.

Bridge 84.6, North Nation River.—Existing bridge, consisting of one 150 ft., one 200 ft., and one 100 ft. through truss spans, to be replaced by two 78 ft. and two 53 ft. deck plate girder spans and one 200 ft. deck truss span.

Bridge 89.2, Blanche Creek.—Existing 50 ft. deck truss span to be replaced by a 50 ft. half deck plate girder span.

Bridge 92.7, Blanche River.—Existing 100 ft. through truss span to be replaced by a 100 ft. deck plate girder span.

Bridge 106.1, Blanche Creek.—Existing present 50 ft. deck truss span to be replaced by a 50 ft. half deck plate girder span.

Bridge 109.4, Blanche River.—Existing 100 ft. through truss span to be replaced by a 100 ft. deck plate girder span.

We are also advised that contracts have been let as follows: To McKinnon Steel Co., Sherbrooke, Que., for fabrication of steel for bridges 56.8, 80.1 and 97.6; to Dominion Bridge Co., Montreal, fabrication and erection of bridges 62 and 84.6; and to Canadian Bridge Co., Walkerville, Ont., for fabrication and erection of the other bridges named above, and for the erection of bridges 56.8, 80.1 and 97.6.

Port McNicoll Bridge.—We are officially advised, in connection with a press report that a bridge on the Georgian Bay and Seaboard Ry., near Port McNicoll, Ont., was to be rebuilt, and that the work would involve some changes in the line and the construction of double track overhead bridges at the level crossing, that the matter has been deferred, and that nothing will be done this year.

Regina Terminals.—Tenders were re-

ceived recently for the construction of a cinder pit at Regina, Sask.

Tuffnell-Prince Albert Branch.—D. C. Coleman, Vice President, Western Lines, announced, May 4, that construction would be started in the near future on the first 50 miles of the projected branch from Tuffnell to Prince Albert. Tuffnell is on the Manitoba & Northwestern Ry., at mile 273 from Portage la Prairie, and the line will run northwesterly to Prince Albert. A press report states that the contract has been given to Grant Smith & Co. and McDonnell, Ltd., Vancouver, B.C.

Rosetown Southeasterly Branch.—In 1919 the Dominion Parliament authorized the building of a line from Rosetown, Sask., in Tp. 30, Range 15, West of 3rd Meridian, southerly for 50 miles, then generally easterly for 30 miles to Tps. 20, 21 or 22, Range 10, West of 3rd Meridian. In July, 1919, a contract was let to Canadian Construction Co. for grading 25 miles on this branch, construction to be started at mile 20 from Rosetown, and to proceed southerly. This grading was completed in 1920, and a further distance of 20 miles was graded during 1921. D. C. Coleman, Vice President, Western Lines, announced, May 4, that these two sections of the branch will be completed this year. The starting point of the grading, mile 20 from Rosetown, is at the point of junction with the projected Empress-Milden line.

Wymark-Archive Line.—In 1919 the Dominion Parliament authorized the building of a line from near Archive, on the Moose Jaw Southwesterly Branch, in Tp. 15, Range 27, West of 3rd Meridian, Sask., to near Wymark, on the Swift Current Southeasterly Branch, in Tp. 13, Range 13, West of 3rd Meridian. In July, 1919, a contract was let to the J. W. Stewart Construction Co., Vancouver, B.C., for grading 25 miles, starting from Wymark, which was completed in 1920. A press report states that arrangements are being made for laying track on this section of the line. D. C. Coleman, Vice President, Western Lines, announced, May 4, grading on the second section of this line is to be done this year. A recent press report stated that R. B. Kimball was in Swift Current, Sask., getting men together to start work on this branch, and another one stated that the contract had been given to W. A. Dutton, Winnipeg.

Swift Current Station.—Tenders were received recently for building an extension to the Swift Current, Sask., station, to accommodate a lunch counter service.

Calgary Station.—A press report states that steam and water for heating trains are being installed at Calgary, Alta., station.

Kipp-Retlaw Branch.—D. C. Coleman, Vice President, Western Lines, announced May 4, that further construction would be gone on with the year on that line, so as to carry it to the crossing of the Little Bow River, Alta. Kipp is a station 8 miles west of Lethbridge, and is the starting point of the branch to Aldersyde. Retlaw is a station at mile 57 from the Suffield-Lomond branch. Grading on this line may be delayed somewhat to enable final surveys to be made and arrangements affected for crossing the irrigation canals.

Loop Tunnel Relining.—We are advi-

sed that the relining of the loop tunnel, mile 4.9 Fernie Subdivision, British Columbia District, for which a contract was let recently to Nickson Construction Co., Vancouver, is being done under C. L. Bates, the contractor's engineer. The tunnel, which is over 800 ft. long is on a 10 degree curve. The contract calls for a 10 x 12 in. interior fir timber lining upon reinforced footings, with sand filling space between the old logging and timber and the new timbering of the walls. All surface of the new timber in contact is to be coated with carbolineum; the new timbering is to be jacketed tight to the old timbering, to give 17½ ft. horizontal clearance. After the lining has been completed the track will be lowered about 20 in. to give sufficient overhead clearance, slack grade near each end of the tunnel allowing this to be easily accomplished. Collapsible staging will be used in putting in the new lining, and traffic will be kept open through the tunnel while the work is in progress. An electric light plant and an air compressor were installed preparatory to starting the work.

Shuswap Subdivision Bridge.—We are officially advised that reconstruction of bridges on the Shuswap Subdivision, British Columbia District, has been decided on as follows:—

Bridge 17.77 existing 60 ft. half deck plate girder span to be replaced by a span of similar design and dimensions but of heavier structure.

Bridge 26.5. Existing 101 ft. through truss span to be replaced by a 100 ft. through plate girder span.

Bridge 37.26. Existing 150 ft. through truss span to be replaced by a span of similar design and dimension, but of heavier structure.

Bridge 40.61. Existing 150 ft. through truss span to be replaced by a span of similar design and dimension, but of heavier structure.

Bridge 65. Existing 60 ft. through plate girder span, to be replaced with a 60 ft. half deck plate girder span.

Canadian Bridge Co., Walkerville, Ont., has been given a contract for the fabrication and erection of these five bridges.

Vancouver Car Repair Shops.—In connection with the fire at the car repair shops at the foot of Duke St., Vancouver, B.C., April 11, we are officially advised that the building destroyed was the passenger car repair shop, the damage to the building being about \$25,000, and to equipment about \$70,000. The burned building is to be replaced by a one-story brick veneered structure of the same type and on the same site, the only change proposed being to add 16 ft. to the length, making the new structure 241 ft. x 89 ft. A contract for it has been let to Western Construction Co., Vancouver, and work is to be started immediately. (May, pg. 223.)

Vancouver Delegations at Angus Shops.—A Vancouver Board of Trade delegation, which is on a trip to Great Britain, while in Montreal, on May 11, was entertained by the C.P.R. and various public bodies. The C.P.R. took the party on a special train to the Angus shops, which were inspected, and gave them luncheon in the dining car. Grant Hull, Vice President received the delegates on behalf of the company.

Freight and Passenger Traffic Notes.

The Canadian National Rys. have advanced freight rates on coal, from Northern Alberta Mines to Prince Rupert, B. C., \$1 a ton.

The Canadian National Rys., have withdrawn from the consolidated ticket office at Buffalo, N.Y., and opened an office in the Ellicott Square building, 11 South Division St.

The C.P.R. during the week ended May 7, moved 955 cars of grain, containing 1,172,014 bush., from western points into Winnipeg, against 976 cars and 679, 862 bush. for the corresponding week in 1922.

The Canadian National Rys. moved from western points, during the present season to May 1, to Winnipeg, Man., and Vancouver, B.C., 112,934 cars of grain against 102,379 cars for the same period 1921-22. Of these cars 4,254 were moved to Vancouver.

The Canadian National and Canadian Pacific Rys. are reported to have completed arrangements with the Agriculture Department for icing of cars of cheese in transit between June 4 and Sept 1, the Department will bear the cost of icing a certain number of cars operating to Montreal up to \$8 a car, the balance of the cost to be met by the shippers.

The Canadian National Railways started, on May 13, running trains on Sundays only, between Montreal and Huntingdon and Hemmingford, Que. The train for Huntingdon leaves Montreal at 7.15 a.m. and starts for Hemmingford at 7.35 a.m., the return trains leave Huntingdon at 6.05 p.m. and Hemmingford at 6.15 p.m., reaching Montreal at 8.25 p.m. and 8.10 p.m. respectively.

The Canadian Passenger Association Eastern Lines in 1922 authorized a reduction in fares for week-end trips from the larger centers of population to nearby summer resorts and certain country points. They are in effect from May 1, to Oct 31; tickets being good going Saturday and Sunday, returning Monday. They were put in operation for this season on May 1.

The Canadian National and Canadian Pacific Rys. are issuing return tickets at special fares from points in the east to certain places in western Canada, and from centers in the west to eastern points, as well as to certain tourist centers in the United States. The sale was commenced May 15, and will be continued to Sept. 30, and they are available to make the return trip to Oct. 31.

The Canadian National and Canadian Pacific Rys., have, we are officially advised, in order to encourage immigration from Europe, arranged that, effective from the opening of navigation by the St. Lawrence route, immigrant fares from Europe to points in Canada are substantially reduced. The new fares to Winnipeg and other western points are approximately on the pre-war basis.

The C.P.R. in conjunction with the Minneapolis, St. Paul and Sault Ste. Marie Ry., and its affiliated line the Wisconsin Central Ry., will commence the operation of a daily through train between Vancouver, B.C., and Chicago, Ill., June 10. The train will leave Chicago daily at 9.45 p.m. and will run through the Rocky Mountains in daylight, Vancouver being reached on the fourth morning after leaving Chicago.

The Pacific Great Eastern Ry. has put on a tourist and standard sleeping car service from Squamish to Quesnel, B.C., 348 miles. The train leaves Squamish on the arrival of the steamboat from Vancouver every Monday evening, making the trip to Quesnel in 29½ hours, and returns from Quesnel every Wednesday, making the trip to Squamish in 25½ hours, in time to connect with the morning steamboat to Vancouver.

The Canadian National and Canadian Pacific Ry. put into effect on May 13, general changes of time all over the system for the summer. The two principal alterations in the C.P.R. schedules were mentioned in Canadian Railway and Marine World for May, pg. 225. The Canadian National Prince Edward Island car ferry will make two round trips every weekday, connecting with the through service to St. John, Halifax and Montreal, which will be accelerated; the Quebec-Montreal service is improved, and a new night train each way is put on between Montreal and Toronto, as detailed elsewhere in this issue.

An Edmonton, Alta., press dispatch stated recently that the Canadian National Rys. had slashed passenger fares for commercial travellers, between the east and the west, the cut amounting to about \$15 either way. We are advised that there has been no reduction in commercial travellers' fares and that none is contemplated. The issuance of commercial travellers' tickets was confined formerly locally to the territory east of Port Arthur, and the territory west of Port Arthur. Now, as a convenience to commercial travellers going from eastern Canada to western Canada, and vice versa, the Canadian National and Canadian Pacific Rys. have arranged to issue tickets through between the east and the west, in both directions, at the combined local commercial fares.

The Canadian National Rys. management has announced commodity rates for various products between Prince Edward Island and the mainland, which have hitherto moved on class rates. The commodities affected include building material, lumber and other forest products, live stock, high explosives, cooperage stock, hay and straw, grain, grain products and other farm products, and scrap iron. Coal and fertilizers move between Prince Edward Island and the mainland at the same rates as on the mainland, and class and commodity tariffs applicable locally between points on the island are stated to be on the same or a lower basis than on the mainland. The placing of the products mentioned above under commodity rates, instead of class rates, will make some reductions. The new rates, which came into effect in the early part of May, apply to traffic moving in both directions.

Canadian Railway and Marine World for May stated that the C.P.R. was placing a new passenger train in service between Montreal and Toronto, effective May 13, to be operated as no. 41 westbound, and no. 42 eastbound, and it was pointed out that this addition gave the company five trains each way, nos. 19, 35, 21, 23 and 41 westbound, and nos. 20, 36, 22, 24 and 42 eastbound, all daily except nos. 23 and 24, which are daily except Saturday. The Canadian National Rys. also put on a new passenger train on May 13, operating westbound as no. 21 and eastbound as no. 20. No. 21 leaves

Montreal at 9.30 p.m. and arrives at Toronto at 6.20 a.m.; and no. 20 leaves Toronto at 9.45 p.m. and arrives at Montreal at 6.45 a.m. It carries first class cars, standard sleeping and drawing room and compartment sleeping cars. This addition gives the Canadian National five trains daily between Montreal and Toronto, as follows: westbound, no. 21, as stated above; no. 15, International Limited, leaving Montreal at 10 a.m., and arriving at Toronto at 5.40 p.m.; no. 9, leaving Montreal at 10.05 a.m., and arriving at Toronto at 10.10 p.m.; no. 19, leaving Montreal at 7.30 p.m.; and arriving at Toronto at 6 a.m.; no. 17, leaving Montreal at 11 p.m. and arriving at Toronto at 7.30 a.m. Eastbound, there are no. 29 as stated above, no. 10 leaving Toronto at 7 a.m., and arriving at Montreal at 7.35 p.m.; no. 14, International Limited, leaving Toronto at 9.20 a.m., and arriving at Montreal at 5.40 p.m.; no. 16, leaving Toronto at 11 p.m., and arriving at Montreal at 7.30 a.m.; no. 18, leaving Toronto at 8.30 p.m., and arriving at Montreal at 7.10 a.m. Express business is handled westbound on trains 21 and 19 and eastbound on trains 20 and 18, instead of on separate trains as formerly.

Letter from a Canadian National Railways' Director.

J. H. Sinclair, of New Glasgow, N.S., has written Canadian Railway and Marine World as follows:—In your last issue you give currency to the following questions, asked in the House of Commons by Mr. Baxter, viz.: "Is it true, as reported recently in the public press, that J. H. Sinclair a member of the Canadian National Rys. Board, stated to members of the delegation of the St. John Board of Trade, which attended a conference at Amherst, N.S., that 'it was news to him that Cochrane and Brockville were not to be the western termini of the Atlantic Division, as that was the understanding at the last meeting he had attended,' or words to that effect? If Mr. Sinclair has been substantially correctly reported, why was a matter of such importance dealt with in his absence?" The acting Minister of Railways, Mr. Graham, replied: "The Government has no information as to the correctness of the report in question."

The answer is that the report is not true. I was not present at the Amherst conference. I did not at any time have an opportunity of discussing this matter with the members of the St. John Board of Trade and made no such statement as that referred to in Mr. Baxter's question. I do not regard this report as of sufficient importance to write a letter about, but as it reflects upon my colleagues on the board, it calls for some reply.

Abitibi Transportation & Navigation Co.—The Abitibi Power & Paper Co.'s President is reported to have stated at the annual meeting in Montreal recently that the logging railway which the company had built into its timber limits in Northern Ontario, had been delivering wood since January, and had proved very satisfactory, the work being done at a considerable saving over the former deliveries by water.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alma and Jonquieres Ry.—Work is reported to be progressing satisfactorily on the construction of the 11 miles of railway which is being built by the Quebec Development Co., in connection with its power development project at the Grande Discharge of the Lake St. John, Que. The railway starts from the old Quebec and Lake St. John Ry., now part of the Canadian National Rys., about two miles from Hebertville station, and runs to the power site, crossing Alma Island, which separates the Little Discharge and the Grande Discharge. Three steel bridges are in course of construction. The railway is expected to be ready for operation early in June. The railway will be used principally at first for taking in construction material for the power plant, and by the Quebec Development Co.'s employees. A large village for the officials and men engaged on the construction is being laid out on the bank of the Grande Discharge, about three miles from St. Joseph D'Alma. W. S. Duke, New York, President; Sir William Price, Quebec; and other officers of the company inspected the work on May 11. (March, pg. 118.)

The Brown Corporation, La Tuque, Que. will a press report states, build a spur line to a wharf which it is proposed to erect near there. The estimated cost of the spur is \$16,000. G. W. Boswell, Quebec, is Manager.

Burrard Inlet Tunnel and Bridge Co.—A special meeting of the shareholders, who are representatives of the various municipalities round Burrard Inlet, was called to be held at North Vancouver, B.C., May 31, to authorize the directors to issue \$630,000 of series A bonds in aid of the construction of the projected bridge across the second narrows of Burrard Inlet. A delegation representing the various municipalities interested, waited on the British Columbia Government at Victoria, May 1, and a press report states, it was advised by the Premier that government engineers would examine the plans of the proposed bridge, and if these were approved, the Government would ask the Legislature to vote \$100,000 towards the cost of erection. (May, pg. 205.)

Cowichan Bay Ry.—A press report states that the British Columbia Minister of Railways has approved plans for this projected railway, from Deerholme, on the Esquimalt and Nanaimo Ry., to tide-water, at the head of Cowichan Bay, about 7 miles. The surveys were made in 1922 by D. O. Lewis, formerly Division Engineer on Vancouver Island for the Canadian Northern Pacific Ry. (Jan., pg. 8.)

Edmonton, Dunvegan & British Columbia Ry.—We are officially advised that the Alberta Legislature has provided \$410,000 for an extension of the line for 15 miles westerly from Grande Prairie, to near Lake Saskatoon; and \$331,000 for a 13 mile extension of the Central Canada Ry.—a branch of the E. D. & B. C. Ry.—from Berwyn westerly. These are the two McArthur lines which were taken over by the Alberta Government under an agreement, and handed over to the C.P.R. for operation. The new construction will be done under the Alberta Department of Railways, of which J. Callaghan, formerly Chief Engineer of the railways, is Deputy Minister. H. G. Dimsdale has been appointed engineer in charge of location and construction of

these extensions. Tenders for the work were received to May 21.

A press report states that the engineering party under Mr. Dimsdale started on May 5 to locate the line west of Grande Prairie, which will be the first to be gone on with. (May, pg. 205.)

Esquimalt and Nanaimo Ry.—The company's machine shops at Wellington, B. C., were burned, April 30, the damage being estimated at \$20,000. H. E. Beasley, General Superintendent is reported to have stated that no plans had been prepared for rebuilding, but that there was no intention to concentrate the company's shops at Victoria, as it was necessary to have shops at Wellington to take care of the rolling stock on the up-island portions of the line.

We are officially advised, in connection with the approval by the Board of Railway Commissioners, of revised location of the proposed extension from Courtenay to Campbell River and Duncan Bay, that the survey of the revised location to Duncan Bay was made in 1922 by the company's engineers. The route is a direct one from Courtenay to Duncan Bay, and the location varies from 5 miles at Courtenay to, in some places, half a mile from the east coast of Vancouver Island, according to the contour of the country. The right of way is cleared for the first eight miles, but nothing has been decided about further work. (May, pg. 205.)

Fecunis Limited.—The Ontario Legislature has extended the time within which the company may build its projected railway from the C.P.R. in Dowling Tp., Sudbury District, to the Canadian National Rys. in Wisner Tp. (March, pg. 119.)

Grouse Mountain Scenic Ry.—A press report states that the company is applying to the British Columbia Railways Department for an extension of time for the construction of its projected scenic incline railway to the top of Grouse Mountain, near Vancouver. The charter was granted by the B. C. Legislature in 1911, during which years surveys were made. The plans were fully described in Canadian Railway and Marine World, Nov., 1911, pg. 1061. An extension of time for construction was granted by the B. C. Government in 1913, since when nothing has been heard of the project.

Inverness and Richmond Ry.—During the sittings of the House of Commons Committee which is investigating the coal supply question, a representative of an English syndicate said that development of the coal fields in the Mabou district of Cape Breton Island would be proceeded with if the Dominion Government would provide railway facilities. There is a railway from Point Tupper to Inverness, which is still in the hands of a private company but which might be taken over by the Government, and extended to provide the necessary accommodation. The advantages of the Mabou coal area, it was stated, include a harbor much closer to Montreal than Sydney or Louisburg.

Some 15 or more years ago the Mabou Ry. and Coal Co. built the Mabou and Gulf Ry. from its collieries to Mabou Harbor, 5 miles, and partially graded a line thence to a junction with the Inverness and Richmond Ry., about 3 miles. The company subsequently ceased operations, and for some years past nothing has been heard of it. The Margaree Coal

and Ry. Co. was incorporated by the Nova Scotia Legislature to build a line from the Chimney Corner mines, in part of the same area of Cape Breton Island, but this charter was revoked by the Legislature in 1920. The Inverness and Richmond Coal and Ry. Co. has a charter to build an extension from its present terminus, through the Mabou coal areas, on to Broad Cove, Margaree and Cheticamp.

Michigan Central Rd.—The Board of Railway Commissioners, after hearing the St. Thomas City Council, and the Yarmouth Township Council, in regard to the company's plans for yard extension at St. Thomas, Ont., has authorized the company to lay seven additional tracks across Park Ave., in Yarmouth Tp., as shown on the company's plans, the question of protection and the cost thereof, and any contribution by the M. C. R. toward the betterment of the streets, and the improvement of conditions at the First Ave. subway, to be reserved for further consideration and order. (May, pg. 206.)

Montreal to National Transcontinental Ry.—P. Mercier, Westmount-St. Henri, Que., asked in the House of Commons, recently: "Does the Government intend to connect Montreal with the National Transcontinental Ry., by a branch line; if so, at what date does it expect to begin the necessary work; and if not, would the Government be disposed to grant subsidies to any person or company willing to undertake such work?" The acting Minister of Railways, Mr. Graham, replied: "Parliament voted a subsidy in 1908 for a railway from Montreal to a point on the National Transcontinental Ry., not exceeding 200 miles, and revoked it in 1910. Any application for subsidy which might now be made would be dealt with on its merits, the final decision resting with Parliament."

Pacific Great Eastern Ry.—Work is reported to be nearing completion on the extension of the wharf at Squamish, on which tracks will be laid to permit trains to be run to the end of the wharf to meet steamboats from Vancouver. At present passengers and their baggage have to be transferred from the steamboats to the train by motor cars. (May, pg. 119.)

St. John and Quebec Ry.—A press report states that the New Brunswick Government is considering plans for improving this railway with a view to facilitate the proposal for its being taken over by the Canadian National Rys. The line extends from a junction with the C.P.R. at Westfield Beach, 13.9 miles from St. John, to Centerville, 157.9 miles. One proposal being considered is for the extension of the line to a connection with the National Transcontinental Ry. and another proposal is to build a branch from Meductic, about 40 miles west of Fredericton, to a connection with the proposed Eastern Maine Ry. (June, 1922, pg. 287.)

Timiskaming & Northern Ontario Ry.—The estimates passed at the Ontario Legislature's recent session contained the following items of capital expenditure:

For Year ending Oct. 31, 1923.	
Engineering: surveys and investigations (re-vote, \$3,065.50).....	\$25,000.00
Grading: widening cuts and fills, etc. (re-vote, \$10,500).....	14,000.00
Replacing timber bridges and culverts (re-vote, \$32,000).....	94,115.00
Additional weight of rail and improved fastenings (re-vote, \$25,701.36).....	35,060.00
Additional track material (re-vote, \$61,297.17).....	86,021.75
Snow fences (re-vote, \$1,500).....	9,000.00

Road crossings and signs (re-vote, \$7,887.04)	18,362.15
Roadway buildings (re-vote, \$2,100).....	18,075.05
Water stations (re-vote, \$123.70).....	4,750.00
Fuel stations	7,653.17
Shops and locomotive houses (re-vote, \$1,695.66)	5,000.00
Station and office buildings, etc. (re-vote, \$54,662.60)	180,138.43
Additional yard tracks, sidings, spur tracks (re-vote, \$42,216.60).....	43,295.57
Roadway machines and tools (re-vote)	4,657.50
Shop machinery (re-vote, \$11,339.81).....	15,000.00
Steam locomotives (re-vote, \$13,816.17)	17,816.17
Freight train cars (re-vote, \$651.23) ..	139,615.44
Passenger train cars (re-vote, \$27,026.60)	284,802.81
Work equipment (re-vote, \$2,747.75)	30,546.06
Extension of main line north from Cochrane	1,750,000.00
Telephone circuits, Porquis Jet, to South Porcupine; also iron circuit, Connaught to Hoyle (re-vote, \$3,819.11)	4,885.87

\$2,782,794.97

For the Year ending Oct. 31, 1924.

Main line extension, north of Cochrane, mile 70 to James Bay.....	\$750,000.00
Estimated amount to be advanced re Nipissing Central Ry., for construction of extension from a point on T. & N. O. Ry., at or near Swastika, to Larder Lake, 25 miles, more or less	900,000.00
	<u>\$4,432,794.97</u>

The item for replacing timber bridges and culverts covers the replacing of a number of timber structures. The work will all be done by the railway forces. None of the structures that are to be replaced this year are of importance.

In relaying the main line rail the original 80 lb. A.S.C.E. section is being replaced by 90 lb. A.R.A. type A section. The item for additional weight of rail and improved fastenings covers the additional weight of rail, and the increased cost of continuous joints, which are used in place of ordinary angle bars. Orders for the rails and fastenings were given the Algoma Steel Corporation, several months ago.

The additional track material item covers the cost of additional tie plates, rail anchors, etc. Sellers anchor bottom tie plates have been ordered for this year's requirements.

The station and office buildings item covers an addition to the general office building at North Bay, and the rebuilding of stations and employes' dwellings that were destroyed by forest fires in October, 1922. These buildings are all being replaced by structures similar to those destroyed, except at Haileybury, where a brick station is to be built. The contract has been given to Hill-Clark-Francis, Ltd., Liskeard.

When the main estimates were under consideration, a question was raised on the vote for \$1,750,000 for the extension of the main line north from Cochrane as to whether fair wages were being paid to the men working on it. On the following day the Premier stated he had made investigations and did not think there was any ground for complaint. The pay last summer was 40c an hour, it being impossible to get men at a lower figure. The contractors provided board at \$1 a day, but the men could board themselves if they so desired; a deduction of \$1 a month was made from each man's pay to provide for illness, and the men were protected in the usual way under the Workmen's Compensation Act in case of accident. No complaints had been received from the men.

We are officially advised that some classes of work on the extension from Cochrane to near New Post on the Abitibi River were carried on during the winter; that other classes have been resumed, and that work was being pushed all over the extension. The contract

calls for the completion of the 70 miles, including tracklaying and ballasting, by Oct. 31.

Tenders will be received by the Commission to June 12, for the construction, other than steel work for bridge of the roadbed, ready for all ties and rails, and for the tracklaying, ballasting and fencing, upon the 25 mile branch line, to be built under the Nipissing Central Ry. charter from Swastika, on the T. and N. O. Ry., mile 165.8 from North Bay to Larder Lake. The surveys for this branch are being gone on with.

The Commission will also receive tenders to June 12, for the erection of an extension to its office building at North Bay.

Tenders are expected to be invited about August for the construction of the projected extension from near New Post, on the Abitibi River, towards Moose Factory. (May, pg. 206).

The Victoria Lumber and Manufacturing Co. which has its headquarters at Chemainus, Vancouver Island, B.C., is building 13 miles of a logging railway, from Cowichan Lake, to the Robertson River Valley. The railway starts from Cowichan Lake, the terminus of an Esquimalt and Nanaimo Ry. branch, runs along the south shore of Cowichan Lake, to Bear Lake, and thence up the valley of the Robertson River. It is expected that it will be in operation about Sept. 1. (March, pg. 120.)

Railway Finance, Meetings, Etc.

The Canadian Pacific Ry. Co. has arranged to pay off on July 10, \$52,000, 000 6% note certificates, issued March 2, 1914, which will be about 7 months in advance of the maturity date. Payment of interest on any outstanding will stop after July 10.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—There are said to be still legal difficulties in the way of the payment of the dividends decided upon by this C.P.R. subsidiary. On March 10, 1922, the directors declared dividends of \$2 a share on both preferred and common stock, payable on April 15, 1922, out of accumulated surplus earnings from 1909 to 1919 inclusive, there being no surplus earning in 1921. The dividends declared were made equal on the two classes of stock, because the company's articles of consolidation provide that after preferred and common stock have received 7% each from the earnings of any year, as they had received from the earnings of 1909 to 1919, all further dividends from the earnings of any such year shall be equal on the two classes of stock, share for share. On April 12, 1922, two of the company's preferred shareholders brought suit in the United States District Court for Minnesota, claiming that the preferred stock was entitled to receive the first 7% in dividends declared in any year regardless of the source from which they were to be paid. The court enjoined the company from paying the dividends pending the decision of the suit. On June 26, 1922, the District decided the suit in favor of the company, sustaining the action of the directors. The plaintiffs appealed to the U.S. Circuit Court of Appeals at St. Louis, the injunction against payment of the dividends remaining in effect. Further and similar dividend action was taken by the directors in Dec. 1922, but payment was again held up by the same plaintiffs. Decision of the Court of Appeals is now pending.

Britishers for the Canadian National Railways Service.

Montreal press reports of May 15 stated that Col. N. H. Balfour, formerly in the Great Eastern Ry's service in England, had come out to be an assistant to Sir Henry Thornton, President, Canadian National Rys., and that his work would relate to immigration and colonization. It was also stated that he was accompanied by A. J. Thomas, a son of J. H. Thomas, the English labor M.P.; that he had been in the Great Eastern Ry's. Operating Department for some five years, and that he had been in war service in France under Sir Henry Thornton. The following is reproduced from the House of Commons Debates of May 16: Sir HENRY DRAYTON (West York, Ont.): There is a newspaper dispatch to the effect that Colonel Balfour, formerly an assistant to Sir Henry Thornton in the management of the Great Eastern Ry. of England, has arrived in Montreal to assume the duties here of assistant to Sir Henry in the management of the Canadian National Rys. It is also stated that A. J. Thomas, who as well was a former assistant to Sir Henry Thornton in England, has come to Montreal to take office here. Will the Minister of Railways inform the House whether these statements are correct, and if they are, what Canadians are being displaced? Hon. G. P. GRAHAM, Minister of Railways: I have no information in reference to the matter except what I have seen in the press. Sir HENRY DRAYTON: Will my hon. friend get that information?

The Crowsnest Pass Agreement Suspension.

The parliamentary enquiry into freight rates, and the Crowsnest agreement by a special committee, which took place at Ottawa in 1922, was dealt with fully in Canadian Railway and Marine World, the committee's report being given in full in our July 1922 issue. As then stated a bill was passed in which the committee's recommendations were embodied, one of them being to the effect that the Crowsnest agreement should, except in respect of grain and flour, be suspended for one year from July 6, 1922, with power to the Government to suspend it for a further period of one year, if in its judgment the then existing circumstances should justify such further suspension.

The leader of the opposition, Mr. Meighen, asked in the House of Commons on May 15; "Has the Government yet taken action with respect to the Crowsnest Pass, or so-called Crowsnest Pass, agreement extension? It will be remembered that there was power to order an extension of the temporary arrangement, or so-called temporary arrangement, for one year. Has action been taken to do so?" Premier King replied: "The matter is under consideration. I will give my right hon. friend a reply later".

Shawbridge Boy's Farm and Training School.—E. W. Beatty, K.C., President C.P.R., presided at the annual meeting of this institution held in the C.P.R. board room, Montreal, recently and was re-elected President, F. W. Molson, director C.P.R., and A. D. MacTier, Vice President Eastern Lines, C.P.R., were elected directors.

Serious Damages to Railways by Floods.

Heavy damages and interruptions to traffic were occasioned on C.P.R. lines in New Brunswick and Maine, resulting from heavy rains on April 27, 28, 29 and 30, and consequent melting of snow in the woods. On April 29 tributary streams to the St. John River became very high, followed by the rising of the Aroostook, Tobique, Keswick, Oromocto, and Nerepis Rivers, flowing into the St. John River; the Magaguadavic, Musquash and St. Croix Rivers in Southern New Brunswick, and the Mattawamkeag River and its tributaries in northern Maine.

The St. John River became very high north of Fredericton, and a few days later, after water had fallen in its upper reaches, it rose to a height unprecedented since 1887 in its lower reaches and the estuaries of the Washademoak and Kennebecasis. A series of very high sea tides occurring at the same period added to the high water conditions, by obstructing the discharge of the freshets through the narrow gorge at the Reversing Falls at St. John.

Traffic first became interrupted by damage to pile bridge at mile 78.4 Shogomoc Subdivision, at Bristol, on April 29, caused by logs and driftwood. By late in the evening of April 29, interruptions had occurred between St. John and McAdam, and on April 30, interruptions to traffic were caused on the Aroostook, Tobique, Shogomoc, Gibson, Mattawamkeag, St. Stephen, St. Andrews, Fredericton, and Shore Line Subdivisions.

In addition to numerous places where washouts and bank slides occurred, high water flooded the track for some 6 miles on Aroostook Subdivision; 2½ miles on Tobique Subdivision; 4 miles on Shogomoc Subdivision, north of Woodstock; half a mile on St. Stephen Subdivision; 10 miles on Shore Line Subdivision; half a mile on St. John Subdivision; and 11 miles on Mattawamkeag Subdivision, on the joint section owned by the Maine Central Rd. In all there were more than 100 places where traffic was interrupted or damage suffered.

The most serious damages were at miles 21, 35, 8 and 41.0 on the St. John Subdivision, where washouts occurred which had to be bridged; mile 27.4, St. Stephen Subdivision, where two bridge abutments were undermined; mile 57.7, 91.2 and 103.75, Shogomoc Subdivision, where pile bridges had to be built; miles 33.1 and 36.2, Gibson Subdivision, where the Keswick River cut through and along the roadbed, necessitating temporary line diversions; mile 18, Mattawamkeag Subdivision, washout bridged; and mile 19.1, Fredericton Subdivision, washout bridged.

On the Shore Line, very serious damage was occasioned by the breaking of a hydro electric power development dam on the west branch of the Musquash River. The resulting flood carried away a 119 ft. Howe truss bridge, at mile 65.22, and destroyed the roadbed from mile 64 to 66, and washed track off the roadbed up to mile 67.6.

The lines from St. John to McAdam, and from McAdam to Woodstock, were opened for traffic again on May 2; St. Stephen and Fredericton Subdivisions on May 3; Tobique and St. Andrews Subdivisions on May 4; Shogomoc Subdivision, Woodstock to Aroostook, May 6; Aroostook Subdivision, May 7; Gibson and Mattawamkeag Subdivision, May 8; and Shore Line Subdivision, Stephen to

Lepreau, May 10.

On account of the joint section on the Maine Central Rd. not being re-opened until May 8, through traffic between St. John and Montreal was diverted to the Canadian National Rys. lines, via Moncton, and a large number of steamship specials were handled in this way, in addition to regular St. John-Montreal service. This route was interrupted between 12 noon, May 3, and 1 a.m., May 6, by washouts on the C.N.R. near Rothesay, caused by the high water in the Kennebecasis River and a strong wind washing the roadbed very badly. During this period through traffic from St. John to Montreal was suspended. Connection with the Maine Central Rd. to Boston was restored May 9, but connection with the Maine Central at St. Stephen will be broken for some considerable period, due to the complete destruction of the Washington County Ry's. international railway bridge at Milltown, across the St. Croix River.

The Canadian National Rys. suffered to a less extent. There was a serious washout between College Bridge, mile 11, east of Moncton and Upper Dorchester, mile 14, on May 1, which interrupted main line traffic for 24 hours. There was also serious damage at several points between Hampton, and Rothesay, about 9 miles out of St. John, affecting about a mile of track, which interrupted train service for about 60 hours. Serious damage was done to the St. John and Quebec Ry., particularly between Westfield Beach and Gagetown, on the Centreville Subdivision, and about two miles west of Woodstock, the Meduxnakeag bridge is in such bad shape that it will be some time before the Woodstock-Centreville section can be operated. This bridge consists of three 84 ft. spans, of which the center one has been carried away for 100 ft. from the piers, the piers are badly damaged, and the two spans have been shifted, so that the outside ends no longer rest on their piers. There was also very serious damage to the track at different points on the old Canada Eastern Ry., between Fredericton and Newcastle. A temporary service was provided between Newcastle and McGivney Jct., the point of crossing the National Transcontinental Ry.

The Canadian National Rys. service on the Quebec and Saguenay Ry., from Quebec to Murray Bay, and on the St. Maurice and La Tuque Subdivisions of the National Transcontinental Ry., was suspended for two or three days at the end of April, owing to washouts. On the Quebec-Murray Bay line, no less than 15 washouts were reported; and land slides were reported on the La Tuque Subdivision, and on the old C. N. Ry. About 200 men were reported to be engaged in repairing the damage, and train services were resumed May 1 and 2.

The New Brunswick Coal & Ry. Co's line between Norton and Chipman was entirely under water, and traffic was suspended for several days from May 1.

The Temiscouata Ry. ceased operating south of Edmundston, May 1, owing to washouts, and the carrying away of a bridge at St. Hilaire.

The Quebec Central Ry. is reported to have suspended the operation of several of its trains for two or three days during the same period, on account of floods on the Lake Frontier Subdivision, but no serious damage was occasioned to the roadbed.

During the last 10 days of April train services on the Canadian Pacific and Canadian National Railways, in Manitoba, were considerably dislocated by floods. The most serious damage on the C.P.R. is reported to have been a 500 ft. washout on the main line west of Poplar Point, mile 45 from Winnipeg, which necessitated the operation of transcontinental traffic via Souris. Another serious break was between Portage la Prairie, and Bredenbury, on the Manitoba Northwestern Ry. Damages of a similar character, but not so serious, were reported on a number of subdivisions, on account of which train services had to be suspended or re-routed for several days. Temporary repairs were made and permanent work is now being gone on with. C. Murphy, General Manager, Western Lines, is reported to have stated that the estimated amount of the damage is \$200,000; but that the actual figures might be below this.

The Canadian National Rys. line between Portage la Prairie and McCreary, was flooded to such an extent that traffic was diverted via Neepawa; on the Rapid City Line, a bridge was washed out 4 miles west of Neepawa; traffic on the Winnipeg-Brandon line was suspended for several days; bridges at Morris and St. Jean, on the Winnipeg-Emerson line, were washed out; and on other lines, including the Grand Trunk Pacific, between Winnipeg and Portage la Prairie, the rails were covered to a considerable depth, causing the entire or partial suspension of train services. Traffic generally was reported to have been resumed April 27.

Alberta Coal for C.P.R. Western Lines.

A Calgary press dispatch stated recently that C. Murphy, General Manager, Western Lines, C.P.R., had announced there that the management was considering using Alberta steam coal as far east as Winnipeg, instead of only as far east as Moose Jaw, and that orders would probably be placed for some 200,000 tons. We were officially advised, May 15, that it is expected to store on the Manitoba District, at Winnipeg and divisional points west, during the next four months, approximately 200,000 tons of Alberta coal, and in addition, during those months, Alberta coal will be used currently on the Manitoba district as far east as Winnipeg. This coal will displace United States coal to the extent of about 350,000 tons. The coal will be obtained from Hillcrest Collieries at Hillcrest; West Canadian Collieries at Blairmore, McGillivray Creek Coal & Coke Co., and International Coal & Coke Co., at Coleman; and Canmore Coal Co., Canmore.

The coal, which will be placed on the ground, will be picked up and used during the autumn rush, in order to facilitate the grain movement, by reducing the amount of switching at Fort William, through the smaller quantity of coal which will have to be loaded there during that time for Winnipeg and points west. In addition to the operating advantages, it will mean employment during the summer for a large number of miners, who would otherwise be laid off, and will also give work to C.P.R. employes in moving the coal down to Manitoba.

Railway Wages and Working Conditions in Canada and the United States.

Maintenance of Way Employees.—A dispatch quoted in Canadian Railway and Marine World for May, stated that the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, had given the Railway Association of Canada the required 60 days notice of a desire to enter into negotiations for a revision of the schedule. We are officially advised that nothing definite was specified as to the changes desired. W. Aspinall, Secretary of the brotherhood's central committee, is reported as having said as follows, in connection with the notification given: "The present rate of pay for a trackman in Canada is 36c an hour after the first six months, and 38c after the first year. The present rate for the first 6 months is 30c an hour, but this can be changed at any time, as these employees are not covered by agreement until the end of the 6 months. The present rate for bridgemen is 46c an hour for the first year, this being increased to a maximum of 56c after three years service. Carpenters get 56c an hour for the first year and a maximum of 60c thereafter, and cabinet makers and carpenters doing planing mill work get 70c an hour. Section foremen at intermediate points gets \$4.40 a day, and section foremen in yards get from \$4.55 to \$4.80 a day. These rates are, it is claimed, considerably lower than those now paid on many roads in the U. S., and much less than the rates paid to men in similar classes of work in Canada, and the central committee feels quite justified in asking for increased rates, as the majority of the men represented are the lowest paid class of employees in the railway service."

Shopmen.—Press reports from various points indicate that machinists, boiler-makers, and carmen included in the American Federation of Labor's railway department's division 4, comprising shopmen generally, have been advocating in their local lodges an attempt to secure higher wages, and a return to the working conditions in force prior to the last schedule change. Several locals have passed resolutions, and forwarded them to the division's headquarters in Montreal, asking that action be taken to secure the higher wages and changed working conditions, particularly in regard to overtime rates for Sunday and holiday work. We were officially advised, May 15, that no notice of a desired conference to revise schedules had been received by the Railway Association of Canada.

Canadian National Rys. Pensions.—Canadian National Rys. general officers met representatives of the employees from the whole system at Montreal, May 16, to discuss a pension plan and other matters of interest.

C.P.R. Carmen.—Representatives of C.P.R. carmen met in Montreal during the week ended May 19, to discuss wages, working conditions and policy. More than 40 delegates, representing all C.P. R. lines, attended.

Wages on Timiskaming & Northern Ontario Ry.—J. H. Marceau, Nipissing, stated in the Ontario Legislature, on April 26, that sub-contractors on the T. & N. O. extension from Cochrane were paying inadequate wages, and, by exorbitant charges for board, doctor's fees, transportation, and clothing, etc., sold in the camps, were securing labor for

practically nothing. Hon. Walter Rollo, Minister of Labor, replied that the T. & N. O. Commission had assured him that a fair wage clause would be inserted in all contracts on the work, providing for the payment of wages current in the district. Premier Drury promised to have the matter fully investigated.

U. S. Situation.—The railway wage situation on U.S. lines has been marked, during the past month, by the granting of numerous wage increases, by various roads, and by applications for wage increases by employees on other roads, some of these having got before the U.S. Railroad Labor Board. The Atcheson, Topeka & Santa Fe granted wages increases to its maintenance men and shop laborers, averaging 2½c an hour, and also increased its section foremen's pay. An agreement with the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers was made, by which the increased wages will be kept in effect till May 1, 1924. The Boston & Maine has increased trackmen's wages 3c an hour. The Pennsylvania has increased common laborer's wages in the northwestern region, and in certain other sections, by from 1½c to 3c an hour, but announces that no general increase has been made. The Illinois Central has granted 2c an hour increase to shop machinists, helpers and apprentices. The Buffalo, Rochester & Pittsburgh, and the Philadelphia & Reading, have given increases to trackmen, foremen and certain bridge and building department employees. It is stated that these increases were found necessary, to prevent men from going to outside industries, some of which were offering higher wages for common labor than the railways were.

The U.S. Railroad Labor Board has before it a petition from the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, filed April 25, asking increases in pay per hour as follows: shop and assistant foremen, 15c; section and assistant section foremen, 11c; mechanics, 14c; mechanics' helpers, 8½c; trackmen, 15c; and track laborers, shop laborers and watchmen, 11½c. The application affects more than 100,000 employees on 28 roads. Another application before the Board is from the Brotherhood of Railway Station Employees, asking for an increase of 15c an hour for Boston & Albany Rd. employees. A third application is from an organization representing some 50,000 teamsters, chauffeurs, stablemen and helpers employed by the American Railway Express Co., who want increases of from 10c to 15c an hour. A separate application has been filed with the Board, by the Order of Railroad Expressmen, representing 72,000 express employees on railways all over the U.S., asking for an increase of 10c an hour. Increased cost of living is the reason given for seeking the increases, in all cases.

Canadian National Rys' Employees in Dorchester County.—The House of Commons passed a motion recently, by L. Canno, Dorchester, Que., for a return showing the names of the Canadian National Rys. employees in the County of Dorchester, the dates of their respective appointments, their duties and respective salaries, and on whose recommendation appointment was made.

Railway Earnings.

Canadian National Railways.

Following are total operating revenues, total operating expenses, and net operating revenues or deficits, for the Canadian Northern Ry. System (steam and electric lines), Grand Trunk Pacific Ry., and Canadian Government Rys., the last including the Intercolonial Ry., Prince Edward Island Ry., and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government:—

	Revenue.	Expenses.	Deficit.	Increase or Decrease.
Jan. \$	9,652,600	\$10,808,306	\$1,555,706	\$1,076,307
Feb.	7,764,196	10,724,382	2,960,186	* 575,596
March	8,558,468	10,741,903	2,183,435	*1,200,059
	\$25,975,264	\$32,274,591	\$6,299,327	\$ 699,348
Inc'se	.....	\$ 252,745	\$ 699,348	.....
Dec'se	\$952,093	.....	.....	.....

*Decrease.

Grand Trunk Railway.

Following are total operating revenues, total operating expenses, and net operating earnings, or deficits, of the G.T.R. system, for 1923 and 1922:—

	Revenue.	Expenses.	Net.	Increase or Decrease.
Jan.	\$8,623,348	\$7,937,775	\$ 685,573	\$ 89,768
Feb.	7,942,776	7,582,837	359,939	*836,517
Mar.	10,197,599	8,408,341	1,789,258	613,896
April	10,838,158	7,763,879	3,074,279	2,771,740
	\$37,601,881	\$31,692,832	\$5,909,049	\$2,638,899
Inc'se	\$7,380,705	\$ 4,741,816	\$2,638,889	.....

*Decrease.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross.	Expenses.	Net.	Increase or Decrease.
Jan.	\$13,148,914	\$12,428,888	\$ 720,026	\$ 236,549
Feb.	11,159,865	10,664,371	495,494	*158,994
Mar.	13,585,763	11,606,049	1,979,714	*440,793
April	13,651,494	11,700,615	1,950,879	402,107
	\$51,546,136	\$46,399,923	\$5,146,113	\$38,868
Inc'se	\$2,725,371	\$ 2,686,503	\$ 38,868	.....

*Decrease.

Railway Accidents Throughout Canada.—The number of railway accidents during April, reported to the Board of Railway Commissioners, was 248, in which 20 employees and 43 others were killed, and 24 passengers, 180 employees and 43 others were injured. In "others" are included 4 persons killed, and 19 injured, in 13 highway crossing accidents. In another highway crossing accident, one railway employee was killed. In these accidents, the crossings were unprotected in 8 cases, and protected, 3 by gates, 2 by bells, and 1 by a flagman, and pedestrians were concerned in 2, automobiles and trucks in 6, and other vehicles in 5.

Geo. E. Bunting, Australasian Manager, Canadian National Rys. and Canadian Government Merchant Marine, Auckland, New Zealand, who has been a subscriber to Canadian Railway and Marine World for many years, in renewing his subscription, writes:—"Your publication, which contains much interesting information with regard to railway and marine matters, is greatly appreciated by me down here."

Purchasing for Canadian National Rys.—C. C. Labrie, who has been confirmed in his position as Purchasing Agent, Canadian National Rys., Vancouver, B.C., will buy the Pacific Coast requirements of the railways, the Canadian Government Merchant Marine, Grand Trunk Pacific Coast Steamships and the Prince Rupert drydock, as well as British Columbia lumber for the system.

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TORONTO, CANADA, JUNE, 1923.

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Cost of C.G.M.M. Ships.

The Canadian Government Merchant Marine directors, in their annual report, which is given farther on in this issue, recommend that the capital cost of the ships to be retained in the fleet be reduced to what may be considered present replacement value, as was recommended by the previous directors in their 1921 report, and state that construction cost of ships of the types in the fleet is now in the neighborhood of \$50 per d.w. ton. The ships were built as a war measure at very high prices, and could never begin to earn any interest on their cost, in fact, last year the whole fleet was not able to even earn operating expenses, entirely apart from interest, depreciation, etc. When the ships were turned over by the Government to the Canadian Northern Ry. directors for operation, they were charged up to Canadian Government Merchant Marine, Ltd., at cost, and Canadian Railway and Marine World never could understand why the then President, D. B. Hanna, and his colleagues, consented to this being done, and we are of the opinion that it would have been much better had they refused to manage the ships, loaded down as they were with such impossible capitalization. The building of the ships under the war conditions existing at the time, was perfectly justifiable, but it was badly managed, orders being placed under the authority of the then Minister of Marine without any regard to the trade in which the ships were to be employed, and without consultation with the people who were to operate them, with the result that many of the ships are absolutely unsuitable.

The Heavy Railway Burden.

The burden which the Dominion assumed, when it required the Canadian Northern and Grand Trunk Rys., was strikingly illustrated by Finance Minister Fielding, in his recent budget speech, during which he said that, for the year ended March 31, there was a surplus of \$37,589,000 of ordinary revenue over ordinary, capital and special expenditures, but that \$92,190,000 which had to be advanced for railway deficits, and \$6,080,720 for Canadian Government Merchant Marine deficit, caused an addition of \$49,293,086 to the public debt. For the fiscal year ending March 31, Mr. Fielding estimated a surplus over ordinary, capital and special expenditures of about \$14,100,000 and that a deficit of over \$73,000,000 in the railways, and \$1,500,000 in the Merchant marine, would have to be provided for, making a still further addition to the public debt of \$60,400,000. It is no wonder that President Beatty, of the C. P.R., representing the largest taxpayer in the country, earnestly hopes that the Canadian National Rys. may be successful, and that his company's taxation, to assist in paying deficits, may be reduced.

A Doubtful Project.

At London, Eng., from cablegram of May 22, read:—G. R. Hall Caine, Independent M.P. for East Dorset, announced in a speech at Poole tonight that he is sailing next Wednesday for Canada to negotiate with the Dominion Government for the construction of 200 miles of railway to open up new country for settlers. He holds out hope of valuable orders for the British steel industries, which, if received, will be a big factor

in relieving unemployment in Great Britain."

When Mr. Caine proposes to build a railway with English capital and without any authority from the Dominion it is hardly likely that he will succeed in his proposed negotiations at Ottawa. The Dominion railway Committee are such that prlkier subsidies are not to be expected for some time. The hope of valuable orders for the British Steel industries is mythical. Canadian mills can supply all the rails and accessories required in that country.

The Financial Vice Presidency, Canadian National Railways.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, has resigned his other positions of Vice President of Canadian National Ry. Co., and Vice President of Finance, Canadian National Rys., in charge of Finance and Accounting Department, but remains a director of the C.N.R. Co. He was appointed by the Dominion Government, on Nov. 5, 1917, as a member of the Canadian Northern Ry. Co's directorate, the jurisdiction of which was extended subsequently over the Canadian Government Rys., the National Transcontinental Ry., and the Grand Trunk Pacific Ry., and in Aug. 1922, the Government appointed him a director of the G.T.R. Co. On Oct. 4, 1922, when the new directorate for the Canadian National Rys., including the Canadian Northern, the Canadian Government, the Grand Trunk and the Grand Trunk Pacific Rys., was appointed, headed by Sir Henry Thornton, Major Bell was included, and at the first meeting of the combined boards on Oct. 10, 1922, he was elected Vice President, and Vice President of Finance, of each of the companies. On Jan. 5, 1923, the Dominion Government passed an order in council, at Sir Henry Thornton's request, placing Major Bell's services at the Canadian National Rys' disposal for about three months.

The following statement was issued at the C.N.R. head offices in Montreal, on May 22: "Major Graham A. Bell, C.M.G., Vice President in charge of finance and accounts, Canadian National Rys., will return to his office as Deputy Minister of Railways and Canals, Dominion Government. Major Graham Bell was loaned to the Canadian National Rys. under order in council. From this date the office of Vice President in charge of finance and accounts will remain unfilled, and these departments will be for the time being under the direction of the President. The report, emanating from Ottawa, to the effect that Sir Henry Thornton was considering the appointment of an American to this post, and had conferred with certain friends in the United States with that object, is entirely without foundation."

Prior to the issuing of the statement quoted above, the position of Vice President of Finance, C.N.R., the salary attached to which is \$25,000 a year, was offered to Lorne W. Mitchell, formerly Treasurer, Canadian Northern Ry., who resigned a few years ago to become General Auditor, T. Eaton Co., Toronto, but he declined to accept it. It is said, however, that efforts are being made to get him to reconsider the matter.

Major Bell issued a circular in April, announcing D. E. Brown, Chief Assistant to the Vice President of Finance, as the ranking official next to himself in the Finance and Accounting Department.

Mainly About Railway People Throughout Canada.

Sir W. M. Acworth, who was one of the royal commissioners appointed by the Canadian Government in 1916, with H. L. Drayton, then Chairman of the Board of Railway Commissioners for Canada, and A. H. Smith, President, New York Central Rd., to enquire into a report on Canadian railways, has, according to a Vienna dispatch, been appointed Director of Austrian Railways, which have been placed under the League of Nations' control.

Harry Freeman Alward, who has been appointed Regional Counsel, Atlantic Region, Canadian National Rys., Moncton, N.B., was born in Salisbury Parish, Westmoreland County, N.B., Sept. 8, 1873, a son of Abram Alward, Legislative Librarian for New Brunswick, and was educated at Petitcodiac, N.B., and New Brunswick University, Fredericton. He became an attorney in 1900, and a barrister in 1901, and has practised at Fredericton, Port Elgin and Sackville, N.B. In 1904 he was appointed Assistant Law Clerk, Railways and Canals Department, Ottawa; 1904, Law Clerk, and later, Departmental Solicitor. In 1913, he was appointed General Solicitor, Canadian Government Rys., Moncton, N.B., and from Dec. 1, 1918, to Feb. 1, 1923, was General Solicitor, Canadian National Rys., there.

Edward Arnold, who has been appointed General Freight Claim Agent, Canadian National Rys., Montreal, was born at Kingston, Ont., Aug. 26, 1864, entered railway service in 1880, and to April 10, 1923, was, consecutively, telegraph operator, relieving agent; travelling freight claim agent, Chicago, Ill., and Battle Creek, Mich.; Freight Claim Agent, G.T.R., Montreal. From 1913 to 1916, he was Vice President and President, Freight Claims Association, now American Railway Association Section 7, and has served on several of that section's committees. His chief recreation is the study of bird life, and he is a member of the American Ornithologist Union, New York, and the Cooper Ornithologist Club, San Francisco.

Thomas M. Arthur, who died at Toronto, May 20, aged 62, was on the C.P.R. engineering staff in its early days, and was later engaged on the Duluth, Mesaba and Northern Ry's Iron Mountain Division, afterwards becoming a building contractor in Toronto.

E. W. Beatty, K.C., President, C.P.R., sailed from Quebec, May 14, on the s.s. Empress of Scotland, for Great Britain and the continent, and expects to return to Montreal about the end of June, after completing a tour of the company's European offices. He has resigned as Chancellor of Queens University, Kingston, Ont., on account of pressure of business.

Gordon Murray Beatty, who died in Toronto, Jan. 29, left an estate valued at \$1,036,437, to be divided equally between his two brothers, E. W. Beatty, K.C., President, C.P.R., Montreal; Dr. H. A. Beatty, Chief Medical Officer, Eastern Lines, C.P.R., Toronto, and his sister Miss M. H. Beatty.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, returned to his office in Ottawa, about the middle of May, after a short enforced absence owing to illness.

Mrs. Graham Bell, wife of the Deputy Minister of Railways and Canals, and her sons, have returned to Ottawa, after spending some time in California.

E. N. Bender, General Purchasing Agent, C.P.R., Montreal, and his daughters, have gone to their country house, at Dorval, Que., for the summer.

R. Carr-Harris, at one time lecturer in civil engineering at the Royal Military College, Kingston, Ont., and later, at Queen's University, there, died at Bathurst, N.B., May 13, aged 79. From 1865 to 1870, he was engaged on survey and construction work on the Intercolonial Ry., and subsequently was assistant to a district engineer of that railway. He was later engaged as Divisional Engineer of Surveys of the C.P.R. in British Columbia, and from 1876 to 1877, was in charge of C.P.R. construction work between Thurso and Lachute.

George C. Cochran, District Freight Agent, C.P.R., Toronto, died at Milwaukee, Wis., May 4, from complications following influenza, contracted while visiting in Chicago in February. He was born at Port Huron, Mich., Nov. 27, 1876, and entered railway service Aug. 28, 1891, since when he was, to Sept. 30, 1895, customs and general clerk, G.T.R., Port Huron, Mich.; Oct. 1, 1895 to June 1, 1900, customs agent, G.T.R., Port Huron; June 2, 1900 to July 1, 1902, rate inspector, Trunk Line Association, Port Huron; July 2, 1902 to June 1, 1906, customs agent, G.T.R., Port Huron; June 2, 1906 to Feb. 1, 1907, Travelling Freight Agent, Lackawana and Grand Trunk Line, Chicago, Ill.; Feb. 2, 1907 to Aug. 1, 1908, Import Freight Agent, C.P.R., Chicago, Aug. 1, 1908 to Oct. 9, 1915, Export Freight Agent, C.P.R., Chicago; Oct. 10, 1915 to Dec. 31, 1922, District Freight Agent, C.P.R., Chicago; and from Jan. 1, 1923, District Freight Agent, C.P.R., Toronto.

D. C. Coleman, Vice President, Western Lines, C.P.R., Winnipeg, and Mrs. Coleman, visited Montreal and Ottawa early in May.

Thomas Cooper, who has been appointed Assistant Superintendent, Investigation Department, Central Region, Canadian National Rys., Toronto, was born in London, England, March 7, 1887, and entered railway service in Jan. 1911, since when he has been, to 1913, assistant agent, Sellwood, Ont., freight clerk, car accountant, telegraph operator, ticket agent, cashier and relieving agent, Canadian Northern Ontario Ry.; 1913 to 1916, constable, Investigation Department; 1916 to 1918, Special Agent, same department; 1918 to March 16, 1923, Assistant Chief Special Agent, same department, Canadian Northern Ry., latterly Canadian National Rys., Toronto. As some of the details mentioned in our May issue were incorrect, the foregoing is published.

Senator Nathaniel Curry, Chairman of the Board, Canadian Car & Foundry Co., and Mrs. Curry, who spent the winter in Bermuda, returned to Montreal, recently, and then spent a short time at their country house, Greenbank, Tidnish, N.S.

W. P. Hinton, formerly Vice President and General Manager, Grand Trunk Pacific Ry., is President of Athabasca Petroleum Products, Ltd., which is stated to have applied for incorporation in Alberta, to build an extraction and refinery plant on tar sand leases near McMurray.

John M. Egan, who was the first General Superintendent of the C.P.R., at Winnipeg, in 1882, died suddenly, May 9, at Dixon, Ill. He was born at Springfield, Mass., March 26, 1848, and

entered railway service in May 1863, since when he was, to April 1867, machinist apprentice, Illinois Central Rd., Amboy, Ill.; April 1867 to April 1868, clerk in freight office, and from July to Dec. 31, 1869, clerk in Engineer's office, same road; Jan. 1, 1870 to Jan. 1877, consecutively, clerk, Engineer's Department, Assistant Engineer, Division Engineer, and Chief Engineer's Assistant, Northern Missouri Rd.; Jan. 1877 to Dec. 1881, Chief Engineer, Assistant Superintendent, Superintendent, consecutively, Southern Minnesota Rd.; Jan. 1, 1882 to Sept. 1, 1886, General Superintendent, C.P.R., Winnipeg; Sept. 1, 1886 to Feb. 1888, General Superintendent, St. Paul, Minneapolis and Manitoba Ry.; Feb. 1888 to Sept. 9, 1890, General Manager, Chicago, St. Paul and Kansas City Ry.; Sept. 9, 1890 to May 1, 1894, President and General Manager, same road; March to Nov. 1896, Assistant to President, Lake Superior and Ishpeming Ry., Marquette, Mich.; Nov. 1896 to April 1900, Vice President, Central of Georgia Railway and Ocean Steamship Co.; April 1900 to 1904, President, same company. He was also at various times President, Ocean Steamship Co., and of the company which built the Union Station, Kansas City, Mo.; Vice President, Brazil Rd. Co., and President, Metropolitan St. Ry. and Kansas City Light & Power Co.

S. W. Fairweather, who was appointed Assistant to Director, Bureau of Economics, Canadian National Rys., was born in New Brunswick, April 30, 1892, was educated at Acadia University, and graduated from McGill University, Montreal in civil engineering in 1916. He entered railway service in 1911, and was, to 1914, consecutively, tapeman, rodman and instrument man, C.P.R., in Nova Scotia; 1916 to 1923, Assistant Engineer, Department of Railways and Canals, in connection with Prince Edward Island car ferry, Quebec Bridge consulting engineer's staff, and the G.T.R. arbitration.

D. B. Hanna, ex-President, Canadian National Rys., and A. J. Mitchell, ex-Vice President, Finance and Accounting, Canadian National Rys., who left Toronto, in the middle of April, to spend several weeks in Europe, are expected back early in June.

Wm. Hawkins, police magistrate, of Acton Village, Ont., who died there recently, aged 83, was the first station master there, on the Toronto, Grey and Bruce Ry., when it was built as a narrow gauge line about 50 years ago.

W. H. Holland, who died in Toronto, May 18, aged 75, was a member of the location survey party for the first section of the C.P.R., west from Prince Arthur's Landing, (now Port Arthur), and continued in the service until 1883, when he removed to Toronto, and went into the insurance business.

S. J. Hungerford, Vice President, Operation & Construction Departments, Canadian National Rys., who has removed from Toronto to Montreal, has leased the late James Ross' house, 91 Westmount Boulevard.

Captain Albert Henry Kendall, M.C., who has been appointed Manager, Chicoutimi Pulp Co., Saguenay Light and Power Co., and Roberval-Saguenay Ry., was born at Aspatria, Cumberland, England, April 4, 1878, and completed his apprenticeship with the Canada Atlantic Ry., Ottawa, Ont., in June

1901, and, has been, from June 1901 to March 1902, machinist, C.P.R., Revelstoke, B.C.; March 1902 to Aug. 1903, Locomotive Foreman, C.P.R., Nakusp, B.C.; Jan. to Dec. 1903, General Foreman, C.P.R., Revelstoke, B.C.; Dec. 1903 to Dec. 1904, Locomotive Foreman, G.T.R., London, Ont.; Dec. 1904 to Dec. 1913, leading hand, general erecting shop, Angus shops, C.P.R., Montreal; Dec. 1913 to April 1915, General Foreman, C.P.R., North Bay, Ont.; April 1915 to Aug. 1916, Assistant Works Manager, Angus shops, C.P.R., Montreal; Aug. 1916 to Jan. 1917, Master Mechanic, Ontario District, C.P.R., Toronto; Jan. 1917 to Sept. 1919, in military service as captain, No. 1 section, Skilled Railway Employees, and later transferred to the 58th Broad Gauge Operating Company, British Expeditionary Force in France, and was awarded the Military Cross in the latter part of 1918, for superintending evacuation under heavy fire, and keeping lines running until the last moment; Sept. 1919 to May 1923, Master Mechanic, Quebec District, C.P.R., Montreal.

Hon. W. C. Kennedy, M.P., Minister of Railways and Canals, who died at Naples, Florida, Jan. 17, after a long illness, left an estate valued at \$645,228. The will, after giving some small legacies, totalling \$10,000, provides that half of the residue goes to the widow, in addition to house and contents at Windsor, Ont., and of the balance, four-fifths is divided among four sisters, and the remaining fifth between a nephew and a niece.

Sam King and Mrs. King of London, Ont., celebrated the fiftieth anniversary of their wedding at their home there on May 17, both being in very good health. He was born at Thetford, Norfolk, Eng., Sept. 12, 1853, and entered railway service Oct. 16, 1876, since when he has been, to Sept. 12, 1881, car builder; Sept. 12, 1881 to April 1, 1882, car inspector; April 1, 1882 to Feb. 22, 1887, draftsman and clerk; Feb. 22, 1887 to March 1, 1889, General Foreman (position abolished); March 1, 1889, to July 1, 1890, Shop Foreman, G.T.R., London, Ont.; July 1, 1890, to May 1, 1896, Foreman, Bonaventure Station, G.T.R., Montreal; May 1, 1896 to July 23, 1897, Assistant to Superintendent, Car Department, G.T.R., Montreal; July 23, 1897 to Aug. 1, 1900, Master Car Builder, Middle and Northern Divisions, G.T.R., London, Ont.; Aug. 1, 1900 to Oct. 1, 1904, Master Car Builder, Intercolonial Ry., Moncton, N.B.; Oct. 1, 1904 to Nov. 1, 1906, Assistant Master Car Builder, C.P.R., Montreal; Nov. 1, 1906 to Jan. 1, 1911, Superintendent Turcot car shops, Canadian Car and Foundry Co., Montreal; Feb. to Oct. 1917, Managing Director, National Steel Car Co., Hamilton, Ont.; Oct. 1917 to Feb. 1919, retired; Feb. to Oct. 1919, Managing Director, National Steel Car Co., Hamilton, Ont.; at which date he retired from active business. Between 1911 and 1917, when he decided to retire, he was pressed into service in various ways for short periods, and in 1912 was engaged by the Dominion Government in taking an inventory and valuing the Intercolonial and Prince Edward Island Rys. cars.

Robert Everett Laidlaw, who has been appointed Solicitor, Central Region, Canadian National Rys., Toronto, was born at Durham, Ont., Oct. 3, 1891, and from 1911 to 1915, was a student in the Faculty of Applied Science, University of Toronto, and graduated with the degree of B.A.Sc.; 1915 to 1916, Assistant Cost Engineer with Interstate Commerce

Commission on valuation of Michigan Central Rd., Detroit, Mich.; 1916 to 1919, law student, Osgoode Hall, Toronto; 1919 to May 1, 1923, barrister and solicitor, with McCarthy and McCarthy, Toronto. In 1922 he was appointed lecturer in engineering law to the students in civil engineering, Faculty of Applied Science, University of Toronto.

Lieut.-Col. R. W. Leonard, C.E., St. Catharines, Ont., formerly Commissioner, National Transcontinental Ry., is giving Queen's University, Kingston, Ont., 12 acres of land to be used in connection with its extension plans.

D. O. Lewis, formerly Assistant Engineer, Maintenance of Way, Canadian National Rys., Toronto, and latterly with the Engineering Corporation, Ltd., Vancouver, B.C., has severed his connection with that company, to engage in civil engineering practice, specializing in railways, wharves, timber and concrete structures, and the mechanical handling of materials.

A. D. MacTier, Vice President, Eastern Lines, C.P.R., Montreal, who sailed from St. John, N.B., on April 24, on the s.s. Empress of Britain, with Mrs. MacTier, for a visit to England and Scotland, are expected back in Montreal about June 7.

J. D. McDonald, whose retirement from railway service was announced in our last issue, was born at Toronto, Aug. 27, 1885, and entered G.T.R. service in 1868, since when he has been, to 1870, messenger, Toronto; 1870 to 1875, Assistant Ticket Agent, Toronto; 1875 to 1896, Ticket Agent, Buffalo, N.Y.; 1896 to May 1902, City Passenger and Ticket Agent, Buffalo; May 1902 to Mar. 1, 1911, District Passenger Agent, Toronto; Mar. 1, 1911 to Oct. 1918, Assistant General Passenger Agent, Chicago, Ill.; Oct. 1918 to May, 1919, Assistant General Passenger Agent, Eastern Regional District, U.S. Railroad Administration, Chicago; May 1919 to Mar. 1, 1920, General Passenger and Baggage Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Chicago; Mar. 1 to Aug. 2, 1920, General Passenger Agent, Western Lines, G.T.R., Chicago; Aug. 2, 1920 to Mar. 31, 1923, General Passenger and Baggage Agent, G.T.R., and General Western Baggage Agent, Canadian National Rys., Chicago. A circular issued by H. H. Melanson, General Passenger Traffic Manager, Canadian National Rys., said:—"J. D. McDonald, General Passenger Agent, Chicago, who has had a continuous service with this company of more than 54 years, will retire effective March 31, 1923, after which he will participate in the benefits of our superannuation fund. During his long period of association with the company, he acquired the goodwill and respect of all our officers and staff, and it is the earnest wish of his confreres that, for many years, he may enjoy his release from the cares of business."

C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines, C.P.R., and Mrs. McPherson, left Winnipeg early in May, to visit Toronto, Montreal and St. John, N.B.

Sir Donald Mann, ex Vice President, Canadian Northern Ry., left Toronto early in May for England.

Thomas Marshall, Manager Traffic Department, Toronto Board of Trade, who has also been appointed Secretary-Treasurer, Ontario Associated Boards of Trade and Chambers of Commerce, entered railway service, Aug. 1882, since when he has been, to March, 1883, operator, Northern and North Western Ry.,

Elmdale, Ont.; Apr. 1883, to Dec. 1885, operator and ticket agent, same road, Allandale, Ont.; Jan. 1886, to Sept. 1887, relieving agent, same road; Mar. 1887, to June, 1899, chief clerk, Traffic Manager's office, Lake Erie and Detroit River Ry., Walkerville, Ont.; July, 1899, to Nov., 1901, Assistant General Freight and Passenger Agent, same road; Dec. 1901 to Jan. 1904, General Freight Agent, same road; Feb. 1904 to Jan. 1905, General Agent, Pere Marquette Rd., London, Ont.; Jan. to July, 1905, Division Freight Agent, same road, London, Ont. He was, from July, 1905, to May 1, 1912, Secretary-Treasurer and from May 1 to June, 1912, Chairman, Canadian Freight Association, Eastern Lines, and in June 1912 was appointed Manager, Traffic Department, Toronto Board of Trade.

R. C. Morgan, Superintendent, Winnipeg Terminal Division, C.P.R., who has been on leave of absence for some months, acting as General Manager, Reid Newfoundland Co., St. John's Nfld., left there May 2, for Winnipeg via New York, with Mrs. Morgan, after she had been in the St. John's Hospital for 7 weeks, in consequence of having fallen on ice and breaking a leg. He will resume his duties as Superintendent, Winnipeg Terminal Division, C.P.R., June 1.

H. R. Naylor, Assistant Works Manager, Angus Shops, C.P.R., Montreal, whose paper on steel car construction, read before the American Society of Mechanical Engineers, at its Montreal meeting recently, is published elsewhere in this issue, was born at Hull, Eng., Aug. 30, 1885, educated at the Municipal Technical School there, and served an apprenticeship in general engineering with the North Eastern Ry. in its Hull shops. He entered C.P.R. service in Dec. 1907, since when he has been, to Feb. 1909, pattern maker, Angus shops, Montreal; Feb. 1909 to March 1911, draftsman, Angus shops; March 1911 to April 1912, steam heat inspector, Eastern Lines Montreal; April 1912 to Oct. 1913, General Car Foreman, Passenger Car Shops, Toronto; Oct. 1913 to June 1915, Divisional Car Foreman, Eastern Division, Montreal; June 1915 to Oct. 1919, Supervisor of Construction Work, Angus shops, and for the latter portion of that time, engaged in statistical work in the Chief Mechanical Engineer's office, Montreal; Oct. 1919 to March 1920, General Foreman, in charge of freight car work, Angus shops, Montreal; and from March 1920, Assistant Works Manager, Angus shops.

Leslie Richard Parry, who has been appointed Sleeping and Dining Car Agent, Canadian National Rys., Prince Rupert, B.C., was born at Sydney, Australia, Jan. 26, 1887, and entered transportation service in March 1911, since when he has been, to June 1917, successively, second class steward, second steward, s.s. Prince George; second steward, acting chief steward, s.s. Prince Rupert; chief steward, s.s. Prince Albert, Grand Trunk Pacific Coast Steamship Co.; June 1917 to Feb. 1923, Commissary Agent, same company, Prince Rupert, B.C.

J. G. Scott, formerly General Manager, Quebec and Lake St. John Ry., and Great Northern Ry. of Canada, Quebec, Que., has been appointed a member of the royal commission to investigate all branches of the grain trade in Canada.

Osborne Scott, whose appointment as General Passenger Agent, Western Region, Canadian National Rys., east of Jasper, Alta., including Duluth, Winnipeg and Pacific Ry., Winnipeg, was announced in our last issue, was presented

with a grandfather's clock and an antique armchair, May 4, by the staff at Vancouver, B.C., where he had been General Passenger Agent, C.N.R., for some time.

Hon. W. J. Shaughnessy, K.C., director, C.P.R., was a passenger on the s.s. *Empress of Scotland*, which sailed from Quebec, for England, May 14.

Thomas Short, station master, Canadian National Rys., Ottawa, Ont., died there April 26, aged 43, after a long illness. He had been in G.T.R. service for a number of years and had been station master at Ottawa since the erection of the central station, in 1912, previous to which he had been at Hamilton, and London, Ont.

V. Irving Smart, who has been appointed Special Engineer, Bureau of Economics, Canadian National Rys., Montreal, was born at Brockville, Ont., Feb. 14, 1876, and graduated from Queens University in 1897. From 1897 to 1898 he was engaged on surveys for the Dominion Government; 1900 to 1902, Assistant Engineer, Illinois Central Rd.; 1902 to 1904, Assistant Signal Engineer, same road; 1904 to 1905, Signal En-

gineer, Chicago and Eastern Illinois Rd.; 1905 to 1907, Engineer Maintenance of Way, same road; 1907 to 1914 Professor of railway engineering and operation, McGill University; 1914 to 1917, Vice President and General Manager, General Railway Signal Co.; 1917 to 1920, consulting engineer, Montreal; 1920 to 1923, Consulting Engineer, Department of Railways and Canals, in connection with the G.T.R. arbitration. While at McGill University and with the General Railway Signal Co., he made investigations and recommendations for improvement in operating conditions on the Intercolonial Ry., between Truro and Moncton; on the C.P.R., between Montreal and Farnham, Farnham and Megantic, and Guelph Jct. and London; and on Canadian National Rys., between Fort Francis and Winnipeg. Mr. Smart has recovered recently from an attack of scarlet fever.

Lady Thornton, wife of the President, Canadian National Rys., who, as mentioned in our last issue, had spent a short time at Algiers, underwent a slight operation in London, Eng., towards the end of April.

Traffic Orders by Board of Railway Commissioners.

Milling in Transit Arrangement on Peas.

General order 380. May 16.—Re application of Canadian National Ry. Co., for authority to cancel the arrangement erroneously published, effective Feb. 1, 1923, in Tariff C.R.C. no. E-4411, with regard to milling in transit arrangement on peas. Upon hearing the application at Ottawa, May 15, the applicant, the Toronto and Montreal Boards of Trade, the Canadian Manufacturers' Association, Cannery Seeds, Ltd., and H. Murton, Ltd., being represented, and what was alleged,—the board orders that the applicant be authorized to cancel the said arrangement in the said tariff; and that the right be reserved to any interested party, prepared to substantiate the claim that peas should be given the milling in transit rate, to apply to the Board for an order requiring the railways to amend their tariffs accordingly.

Reduced Rates and Free Transportation.

General order 381. May 12.—Reduced rates and free transportation, and the interpretation of the word "traffic" in the first line of sec. 345 (1) (a) of the Railway Act, in its relation to the remainder of the said subsection. Upon hearing the matter at Ottawa, Feb. 20, 1923, the Railway Association of Canada, the Canadian Pacific and Canadian National Railways the Dominion Express Co., Canadian Pacific Railway Co's Telegraph, Canadian National Express Co., and the Canadian National Telegraphs being represented, and what was alleged—the Board declares that the said word "traffic" should be read as though preceded by the word "freight".

Editor's Note.—The sub-section of the Railway Act referred to is as follows:—"345. (1). Nothing in this act shall be construed to prevent, (a) the carriage, storage or handling of traffic, free or at reduced rates, for the Dominion, or for any provincial or municipal government, or for charitable purposes, or to or from fairs and expositions for exhibition thereat, or the carriage, free or at reduced rates, of destitute or homeless persons, transported by charitable societies, and the necessary agencies em-

ployed in such transportation, or the carriage at one-half the regular single fare of ministers of religion or persons exclusively engaged in charitable, religious, or eleemosynary work."

Canadian National Railways' Freight Tariffs.

33,605. April 28.—Re application of Canadian National Ry. Co., under the Railway Act, 1919, sec. 330, for approval of its standard and joint freight mileage tariff, C.R.C., no. E-608, upon the report and recommendation of the Board's Assistant Chief Traffic Officer, the Board orders that the tariff be approved.

33,614. April 30.—Re application of Canadian National Ry. Co., under the Railway Act, 1919, sec. 330, for approval of its standard freight mileage tariff, C.R.C., no. W-325, upon the report and recommendation of the Board's Assistant Chief Traffic Officer, the Board orders that the said tariff, containing the Pacific and the prairie scales, be approved.

Preparation of Canadian National Railways Freight and Passenger Tariffs.

33,616. April 28.—Re application of Canadian National Ry. Co., under the Railway Act, 1919, sec. 323, for approval of a bylaw of the company, dated April 16, 1923, and of a bylaw of the Canadian Northern Ry. Co., dated April 16, 1923, authorizing the officers of the companies, as therein specified, to prepare and issue tariffs in respect of the tolls upon passenger or freight traffic of every description to be charged by the companies upon the said railways, or any part thereof; also to specify to whom, the places where, and the manner in which such tolls shall be paid. Upon the report and recommendation of the Board's Assistant Chief Traffic Officer, the Board orders that the said bylaws be approved.

Packing House Products Mixing Rule.

33,750. May 11.—Re order 33,366, Feb. 8, 1923, suspending rule 5/a in Supplement 4, to C.P.R. tariff C.R.C. no. W-2658; whereas the C.P.R. Co. has filed tariff C.R.C. no. W-2706, effective June 1, 1923, cancelling tariff C.R.C. no. W-2658, and upon its appearing that the

new tariff is satisfactory to the Swift Canadian Co., the Board orders that order 33,366, Feb. 8, 1923, be rescinded.

Mileage Rates on Carload Freight From Loading Sidings.

The following circular was issued by the Board's Secretary, May 18: Enquiry has been received by the Board which involves the question, how should the distance be computed from loading sidings, located between stations, with respect to carload traffic carried under tariffs naming mileage rates, said loading sidings not being shown in the official distance tariffs of the railway companies? The Board is of the opinion that there should be a uniform practice in such cases and I am directed to ask that you advise promptly if you have any objections to the issuance by the Board of an order requiring:—

1. Publication of an amendment to official distance tariffs issued in compliance with the Board's order 5054, Dec. 21, 1908, by adding thereto a rule reading:—"In computing the distance governing traffic handled under mileage rates from loading sidings not named herein, that applicable from the nearest station thereto shall be used."

2. Publication, where not already done, of the following clause in tariffs naming mileage rates:—"In computing distance rates under this tariff, distances shown in official distance table No. C.R.C. No., supplements thereto, and reissues thereof, will apply."

Among the Express Companies.

The Canadian National Rys. Express Department has opened offices at Florence, N.S., and MacDiarmid, Ont. The name of the office at Murray Bay, Que., has been changed to La Malbaie.

The Canadian National Rys. Express Department has opened offices at Marshy Hope, N.S.; River Henry, Que.; Oaknor, Man., and has closed offices at Lowbrush, the Elgin and Reaboro, Ont. The name of the office at Morien, N.S., has been changed to Morien Jct.

The Minister of Railways and Canals introduced a bill respecting the Canadian National Rys. in the House of Commons, May 2, which contains the following paragraphs:—"1. The Canadian National Railway Co. may carry on all business which is customarily carried on by express companies, including, without restricting the generality of the foregoing, the handling of express money orders or other methods of transmitting or handling money, securities, or other handled by the company shall move or be dealt with by the company on the same terms and conditions as to the liability of the company or otherwise as are from time to time approved by the Board of Railway Commissioners for Canada with respect to similar traffic when handled by express companies, subject to such variations therein as may be necessary in view of the handling of the traffic by a railway company instead of an express company.

Additional matter relating to express companies appears on the next page.

Time Enquiries.—The Canadian National and the Canadian Pacific Ry. managements, in Montreal following the Bell Telephone Co.'s example which their offices will not answer telephone enquiries for "the time." It was stated that the Montreal station offices of each company received over 1,000 such requests a day.

Among the Express Companies.

The American Ex. Co. has moved its Montreal offices to 521 Phillips Square, from 231 St. James Street, and the American Railway Ex. Co. has removed to 276 Craig St. West from 231 St. James Street.

Quebec City Council, which planned to increase the license fee on express companies doing business in the city, from \$1,000 to \$3,000, has decided that in future the tax will be \$1,500. Arrangements have been made with the companies for extension of delivery limits, and, it is stated, that the city proposes to utilize the additional amount of the tax in further extensions of the express service to all parts of the city.

John Pullen, whose retirement, on superannuation, from the position of President, Canadian National Express Co., was announced in a recent issue, was entertained at dinner by a number of business associates, at the St. James' Club, Montreal, and presented with a mahogany mantel clock. The dinner, which was presided over by F. H. Phippen, K.C., was attended by a large number of officials of all the express companies operating in the Dominion. A second presentation was made at his house shortly afterwards, when he was given a set of cut glass decanters and tray, and also a combined cut glass ink well and sterling silver clock for himself and Mrs. Pullen. The presentations were made, on behalf of the company's staff from the Atlantic to the Pacific, by W. C. Muir, Assistant General Manager, and W. W. Williamson, General Auditor, who both referred to the happy relations which had at all times existed between Mr. Pullen and the officers and employes, and the high regard they all had for him.

Reasons for the Canadian National Railways Express Department.

Sir Henry Thornton, President, C. N. Rys., gave out the following statement in Montreal, May 10: "There seems to have developed considerable misapprehension in regard to the proposal that the Canadian National Express Co. should be operated as a department of the railway company. It is proper, therefore, that the public should be reliably informed upon the subject. The functions of the express company and the duties of its employes are intimately connected and interwoven with the railway, and the work of its employes. Where express companies operate independently, as is the case in the United States, there is always a certain amount of lost motion, and friction, arising from the fact that there are two companies, with two sets of employes trying to perform a transportation service on the same railway. If, as is sometimes the case, the express company and the railway company are in effect the same thing, there would seem to be no particular virtue in maintaining two separate companies. Furthermore, by operating the express company as a department of the railway, considerable economy can be effected in administration and clerical expenses. Lastly, but by no means least, it is the desire of the administration that every employee of the express, telegraph and railway departments should regard himself as working for the Canadian National Rys. system. Such a spirit provokes co-operation, team work, and a correspondingly improved service. These arguments are so obvious that they hardly require further elaboration.

"It has been said that no railway operates its express company as a department of the railway. This statement can only be based upon ignorance of the conditions. The express companies which operated over the railways of the United States represented interests generally distinct from the railway, although there was usually a considerable interlocking in financial affairs. The American express companies originally were private companies, organized by private capital, for the purpose of handling the express business. Moreover, when express companies first appeared in the U. S., the railway systems were relatively small, and it was desirable to have one company which could transport package freight from one end of the country to the other. This is not the position in Canada, because the Canadian National Rys. system reaches to practically every point of importance. In England the express business is all handled by a department of the railway. In fact, package freight, which corresponds to our express business in Canada, is handled by the traffic department, and within the last two years numerous studies have been made of the position by American railway officers, with a view to considering the introduction of the English collection and delivery system in the U. S. by the railways, which is nothing more nor less than an express business.

"To recapitulate: It will be seen that the proposal to operate the Canadian National Express Co. as a department of the railway is, in the first place, economical; in the second place, there will be an improved and more efficient service, and, in the third place, it is in accordance with the trend of the best practice in the transportation industry."

Dominion Express Co.

Thomas Glover has been appointed wagon agent, Dominion Ex. Co., Calgary, Alta., vice M. Flynn, promoted.

G. H. Taylor, heretofore agent Dominion Ex. Co., Calgary, Alta., has been appointed agent, Nelson, B.C.

O. E. Ford, heretofore agent Dominion Ex. Co., Calgary, Alta., has been appointed route agent, Vancouver, B.C.

S. M. Biesoecker, messenger, Dominion Ex. Co., Moose Jaw, Sask., for the past 10 years, died suddenly there, recently.

M. Flynn, heretofore wagon agent, Dominion Ex. Co., Calgary, Alta., has been appointed agent, Banff, Alta., vice P. G. Kelly, transferred.

P. A. Dunne, heretofore agent, Dominion Ex. Co., Edmonton, Alta., has been appointed agent, Calgary, Alta., vice O. E. Ford, transferred.

E. E. Nixon, of the Dominion Ex. Co. staff at Vancouver, B.C., has been appointed agent, Edmonton, Alta., vice P. A. Dunne, transferred.

H. H. Kingsett, heretofore agent, Dominion Ex. Co., Calgary, Alta., has been appointed route agent for Alberta, vice G. H. Taylor, transferred.

P. G. Kelly, heretofore agent, Dominion Ex. Co., Banff, Alta., has been appointed agent, Calgary, Alta., station, vice H. H. Kingsett, transferred.

The Dominion Ex. Co., which withdrew its service from Canadian Government Railways, after May 31, continues its service into Halifax, N.S., via St. John, N.B., and Digby, N.S.

John J. Murray, General Superintendent, Lines East, Dominion Ex. Co., Toronto, died at St. Michaels Hospital, Toronto, May 1, following an operation.

He was born at Toronto, July 1, 1875, and entered Dominion Ex. Co.'s service, Oct. 1, 1897, since when he was, to Sept. 1, 1903, in various minor positions; Sept. 1, 1903, to May 1, 1906, chief clerk, Superintendent's office; May 1, 1906, to Dec. 31, 1910, secretary to President; Jan. 1, 1911, to Dec. 31, 1918, Superintendent, and from Jan. 1, 1919, General Superintendent, Lines East, all at Toronto. The funeral took place from St. Anthony's Church, Toronto, May 5, the honorary pall bearers being, W. S. Stout, President; T. E. McDonnell, Vice President and General Manager; W. H. Burr, Traffic Manager, Dominion Ex. Co.; H. C. Grout, General Superintendent, Ontario District, C.P.R.; W. C. Muir, Assistant General Manager; and F. N. Wiggins, General Superintendent, Eastern District, Canadian National Railways Express Department; the active pall bearers being W. E. Norman, General Superintendent, Central District, C. N. R. Express Department; C. A. Girvin, and the following Dominion Ex. Co.'s officials, H. P. Sharpe, General Agent, Toronto; P. A. Keeler, Treasurer; F. W. Branscombe, Superintendent, Montreal; J. R. Martin, Manager, Foreign Department; W. H. Plant, General Auditor; H. J. Palmateer, Assistant Superintendent, Toronto.

Withdrawal of Dominion Express Co. from Canadian Government Rys., Etc.

T. E. McDonnell, Vice President and General Manager, Dominion Ex. Co. issued a circular May 7, in part as follows:—To accommodate the Government, the Dominion Express service will be withdrawn from the Intercolonial and Prince Edward Island sections of the Government lines at close of business, May 31. At the same time the Dominion Express service will be withdrawn from Atlantic, Quebec & Western Ry., Quebec Oriental Ry., Cumberland Ry. & Coal Co., Maritime Coal, Ry. & Power Co.

Regarding standing with the Company of exclusive employes, whose positions will be discontinued by the necessity of withdrawing service from Government lines on May 31, Mr. Paton, Grand President, Brotherhood of Dominion Express Employes, advises that the grand lodge executive have adopted the following resolution:—"In the event of the Dominion Express Co. coming off I.C.R. lines, that the principle of seniority and ability for the protection of our members be generally recognized for the placing of such members of our brotherhood who may be affected thereby." The spirit of this resolution meets the views of the management as fair.

In transferring to other divisions and departments of the service employes displaced by this change, a broad view will be taken to the end that the standing and service records of employes with the company as a whole shall be recognized. Interested officials and department heads will please co-operate to this end.

On and after May 31, at competitive points on Dominion Ex. lines, shipments destined to offices which will become non-competitive after May 31, should not be accepted or waybilled. If inadvertently accepted they must be promptly handed to Canadian National Express in local transfer.

Additional matter relating to express companies will be found on the preceding page.

Electric Railway Department

Intersection Installation Toronto Transportation Commission.

The Toronto Transportation Commission has completed the installation of what is said to be the largest street railway intersection ever laid down in Canada. It is at the intersection of Queen St., Roncesvalles Ave., King St. and Lake Shore Road, where they come together near the Canadian National Rys. Sunnyside station, in the west end of the city. The accompanying illustration shows the work in progress, the photograph being taken on the completion of the steel laying, but prior to the final lift and tamping and before the paving base and wearing surface were laid.

The installation was accomplished with the same degree of speed and efficiency which marked the work on the Bloor-Bathurst intersection in 1922, described in Canadian Railway and Marine World for Sept. 1922. The preliminary work including the breaking and removal of

old steel, which was then taken to the material yard. Following the laying and bolting of the steel, the intersection was lifted to grade and all ties were pneumatically tamped. After tamping, a concrete paving base, in which 201 cu. yards of concrete was used, was poured, and the wearing surface, in which are 45,000 granite blocks, was laid on May 3 and 4, completing the job.

The change in the overhead work did not require the use of other than standard materials, except at one point, where a 3-way crossover was necessary, this being provided by welding an extra part on a standard 2-way fitting. On account of the great weight of the overhead wire structure, additional supporting spans were considered necessary; these were erected 3 ft. above the wiring and the weight of the latter picked up on them at desirable points. The intersection,

vised by A. T. Spencer, the Commission's Engineer of Way, and F. W. Drowley, Roadmaster, and the changes in overhead layout were supervised by W. Gibson, Superintendent of Overhead Lines, and E. Hillis, foreman, under the direction of J. F. Neild, Electrical Engineer.

Quebec Railway, Light, Heat & Power Co's Control Changed.

Quebec Railway, Light, Heat & Power Co's affairs have been prominent in financial circles for the past year or more. Over a year ago E. A. Robert, President, Montreal Tramways Co., and associates, secured control. Following this, Mr. Robert made an investigation of the company's affairs, and outlined plans for an extensive development, particularly of the power plant, which necessitated a



Toronto Transportation Commission Intersection at Roncesvalles Ave., King and Queen Sts., and Lake Shore Road.

the old concrete wearing surface, was finished, and everything put in readiness to proceed with the changing of the steel on the evening of April 18. Car operation over the intersection was stopped at 8.45 p.m.; the old steel was removed, together with the old ties; the subgrade and foundation being already prepared, the new ties were put in, the new steel laid and bolted up, and the overhead layout changed to conform with the new curves, and cars were again in operation on April 19, at 5.45 a.m., exactly 9 hours after the work had started. About 164 men were used on the job. As soon as the final car had gone over the intersection on the evening of April 18, two crane cars and four flat cars were brought up, the old steel was loaded on them and run back about half a block on Roncesvalles Ave. and Queen St. and unloaded, and the old ties were piled up clear of the work. The broken stone foundation was prepared, the new ties, which had been distributed near the scene of work beforehand, were put in, and the new steel, brought up on the crane cars and flat cars, was laid and bolted. The flat cars and crane cars were then run back and loaded with the

of solid manganese steel construction, weighs 266,185 lb. complete with bolts, tie rods and other accessories. The complete layout contains 2252 single track feet of steel, 429 joints, 129 cast pieces and 140 pieces of rail. Some of the special ties used were 21 ft. long, some of them being 7 x 12 in. and 308 standard 7 x 9 in. ties were put in. There are 32,026 ft. b.m. of tie timber in the layout, of which the special ties constitute 22,170 ft. The foundation required 777 tons of crushed stone.

The street shown at the bottom of the illustration is the Lake Shore Road; that leading away from the reader and to the left is Roncesvalles Ave.; Queen St. is shown at the left of the illustration and also at the right, farthest from the reader, while King St. is at the right, nearest to the reader. The angle between Roncesvalles Ave. and Queen St. is 90 deg. 58 min.; between King and Queen Sts. 45 deg. 32 min.; between King St. and the Lake Shore Road 107 deg. 30 min.

The intersection was fabricated by Canadian Steel Foundries, Ltd., being bolted together and taken apart at the plant before shipment. The installation was super-

reorganization of the company's affairs. For this purpose application was made to the Quebec Legislature for the incorporation of three separate companies, one for power development purposes, one for electric railways, and another for the gas undertaking. Very considerable opposition was manifested in the legislature to these proposals, which were withdrawn, and two bills were substituted, one to incorporate the Quebec Tramways and Gas Co., and the other the Quebec Power Co., which were passed, notwithstanding the opposition, stated to directed by the Shawinigan Power Co. interests, which also had plans for power developments in the vicinity of Quebec. Mr. Robert then took up the matter of reorganization, and of financing, the most important feature of the latter being the falling due in April of \$2,500,000 of Montmorency power debentures. For several weeks this financing was discussed on the exchanges, and finally it was announced, May 12, that Shawinigan Power Co. interest had secured control, and on May 14, at a board meeting, the following directors resigned: E. A. Robert, A. C. Barker, J. N. Greenshields, K.C., Lt. Col. J. E. Hut-

cheson, K. B. Thornton and N. G. Valiquette, Montreal, their places being taken by W. S. Hart, Howard Murray and Julian C. Smith, of Montreal; J. H. Fortier, J. M. McCarthy and C. E. Taschereau, Quebec. The following old directors remained on the board: C. G. Greenshields, K.C., Hon. G. E. Amyot; Senator D. O. L'Esperance, Hon. A. Turgeon and Senator L. C. Webster. The newly constituted board elected the following officers: Julian C. Smith, President, and Howard Murray, Vice President; and appointed the following officials: W. J. Lynch, General Manager; James Wilson, Secretary; Arthur Lemoine, Assistant Secretary; W. S. Hart, Treasurer; R. A. Wilson, Assistant Treasurer. The company's head office was transferred from Montreal back again to Quebec.

Punishment for Obtaining Passage by False Tickets or Badges.

A bill introduced in the House of Commons, at this year's session, by the Minister of Justice, contained several amendments to The Criminal Code, R.S.C., chap. 146, one being to insert the word "badge," after the word ticket, in each case where it occurs in sec. 412. During the discussion on the second reading of the bill, Sir Lomer Gouin said:—"The amendment is asked for by the Toronto Transportation Commission, and appears to be unobjectionable. Sec. 412 provides that everyone is guilty of an indictable offence and liable to six months imprisonment who by means of any false ticket or order, or any other ticket or order, fraudulently and unlawfully obtains or attempts to obtain passage on any carriage, tramway or railway, or in any steam or other vessel. The effect of the amendment is to extend these provisions to the fraudulent use of a badge as well as a ticket or order."

Kitchener & Waterloo Street Railway New Car House.

The car house which the Kitchener Light Commissioners are having built in Kitchener, Ont., for the Kitchener and Waterloo St. Ry. has its main frontage on King St. It will be 178 ft. long and 123 ft. wide and will be of red pressed brick, on concrete foundations, with a roof of 3 in. gypsum slab covered with a built up asphalt. Provision is made in the foundation work for a storage tank 35½ ft. by 15 ft. and for a soft water tank with 10,000 gall. capacity. The car accommodation on the main floor will have 5 sets of rails, with pits, and a similar number of tracks for storage purposes. The Commissioners have adopted the Detroit car house plan of installing pits, using steel truss to tie tracks together, and embedding the steel in 1 ft. of concrete. The floors above the pits will be supported by concrete foundations instead of having rails to help to support the floors as is the case in some recently built car houses. A boiler shop, 23 x 40 ft. is located at the rear of the car storage area. On the main floor there is a considerable space for stores; a work shop; a luncheon room for conductors, and a locker room, with bath for the employees.

The Commissioners have let the following contracts in connection with the car house.—Excavation, concrete work, brick work and installation of the 3 in. gypsum roof to Ball Bros., Kitchener, for \$40,670;

steel work, to Hamilton Bridge Co., for \$12,775, plus \$2,127 for steel stairs with mastic treads for pits, etc., and for pipe railing and steel doors to oil storage rooms, etc. A car hoist and the special track work have been ordered in the United States.

Electric Railway Passenger Fares.

Hamilton St. Ry.—At the Hamilton, Ont. City Council meeting, April 24, Ald. Lawrence moved that the resolution authorizing the company to charge a straight 5c fare be rescinded. An amendment by Controller Treleven, providing for negotiations with the company to see what service improvements it would give in return for a continuance of the 5c fare was carried by 10 to 5. Controller Etherington gave notice that at a future meeting he would move that a plebiscite be taken at the municipal election, Jan. 1, 1924, on a question of continuing the 5c fare.

Kingston, Portsmouth and Cataraqui Electric Ry.—The Ontario Legislature has confirmed the City of Kingston's bylaw 40 and the village of Portsmouth's bylaw 403 passed in Aug. 1922, amending the sections in the franchise granted by those municipalities to the company fixing the fares to be charged. The new fare schedule which is now in force is as follows:—From 6.30 a.m. to 10.30 p.m., 7c; from 10.30 p.m. to 6.30 a.m., 10c; tickets good between 6.30 a.m. and 10.30 p.m., four for 25c; workmen's tickets, good between 6.30 and 7.59 a.m., and 5 to 6.30 p.m., 6 for 25c; children's tickets available for children between 5 and 12 years, 8 for 25c; transfer free; police constables in uniform, city detectives wearing badges, and children accompanied by parents or other adult persons free, transfers free. The company is also authorized to charge a reasonable compensation for carrying packages and bundles as common carriers, but may not charge for packages of reasonable size carried by passengers.

Kitchener and Waterloo St. Ry.—The new 20-year franchise granted by the town of Waterloo, Ont., for the operation of an electric railway provides that the fares to be charged shall be those at present in force and that whenever it shall be deemed necessary to increase them the Ontario Railway and Municipal Board shall decide whether they shall be increased.

Nova Scotia Tramways and Power Co.—The annual report for 1922 states the passenger earnings of the electric railway in Halifax were \$599,914.92 and that the 6¼c tickets were used almost exclusively.

Regina Municipal Ry.—The Regina, Sask., City Council authorized the municipal railway management to issue weekly passes at \$1, available for an unlimited number of rides from Monday morning to Sunday night. A press report states that the passes will be transferable. The commissioners in recommending the passes reported unanimously against a return to a 5c fare. It would require an increase of 1,500,000 passengers, or 28% more than were carried in 1922, to enable such a reduction to be made.

Regina Municipal Ry. issued the following notice to take effect May 14:—"Weekly Pass \$1.00. On Monday and Tuesday, each week, the street railway has on sale the weekly pass for \$1. It is good until the following Sunday night. You buy a week's riding at one time.

The number of rides you can take is unlimited. Whether you ride one block or 20 the pass pays for it. If you are shopping you do not have to think of car-fare. With a pass in the home any member of the family can make use of it. Buy a pass next Monday morning and you will be surprised how many steps you have saved by the following Sunday night. One passenger writes: Sure, let us praise the Lord for everything, including dollar passes.

Winnipeg Electric Ry.—Under the agreement entered into between the company and the city council, in 1921, the latter body may ask for a change in fares each year before May 15, the new fare to come into effect Aug. 1. An application for a reduction was made in 1922, but the company declined to agree, and the council refrained from taking advantage of the arbitration clause of the agreement, pending the outcome of the franchise extension negotiations then in progress. Under the draft agreement drawn up, there was to have been a slight reduction of fares this year, but, as the draft agreement is being held up by the council, the 1921 agreement is still operative. Alderman Simpson asked at a city council meeting on April 29, whether it was proposed to take any action to secure a lower fare, but there was a general expression of opinion that there was no ground for asking for it on the basis of present costs, and no action was taken.

Actions Against Hydro Electric Railways Permitted.

The Ontario Legislature, at its recent session passed a bill introduced by Hartley Dewart, K.C., Toronto, entitled The Hydro Electric Negligence Act 1923, the principal section of which is as follows: "2. Notwithstanding anything contained in any other act, it shall not be necessary to secure the consent of the Attorney-General before commencing any action against the Hydro Electric Power Commission of Ontario for damages arising through the negligence of the agents, contractors, officers, employees or servants of the said Commission in the construction, equipment or operation of any electric railway constructed or acquired, equipped and operated by the said Commission under the authority of any act of this Legislature."

This removes a most objectionable exemption that the Hydro Electric Railways, owned by various municipalities, and operated for them by the Commission, enjoyed, and places them in the same position as railways owned and operated by companies, a position from which they should never have been removed.

Hamilton and Dundas St. Ry. difficulties.—Early in January the Dominion Power and Transmission Co. gave notice of its intention to cease operating the Hamilton and Dundas St. Ry., on Jan. 31, but decided to continue operations for the six months following negotiations initiated by the Dundas Town Council which resulted in the cancellation of all workmen's tickets and the sale of a 10-trip unlimited ticket between Hamilton and Dundas for \$1. The other fares are as provided for by the Railway Act, and the Hamilton city bylaw. A press report, says the indications are that the Hamilton and Dundas St. Ry. will throw up its franchise at the end of July, when the arrangements for its continuance will end.

Track Construction, Hydro Electric Rys., Essex District.

The Hydro Electric Power Commission of Ontario received tenders to May 5, for the construction of 26,935 single track feet, of main track, and 475 feet of siding, to be located as follows: In Walkerville, 1,925 ft. of single track, on Sandwich St., from the Canadian National Rys. bridge to the city's eastern limits; in Ford City, 3,250 ft. of single track, from the eastern limits of Walkerville to Strabane Ave.; in Windsor, 3,740 ft. of double track on Erie St., from Ouelette Ave. to Parent Ave. (7,480 single track ft.); in Windsor, 2,540 ft. of double track on Ottawa St., from Parent Ave. to Lincoln Road (5,080 single track feet); in Windsor, 2,100 ft. of double track, on Parent Ave., from Erie St. to Ottawa St. (4,200 single track ft.); in Sandwich, 2,500 ft. of double track, on London St., from Bridge St. to Soper St. (5,000 single track feet.); in Windsor, a passing siding, 475 ft. long, on Ouelette Ave., near Maple Ave. The work will be under the direction of T. U. Fairlie, Engineer, Railways Department, Hydro Electric Power Commission of Ontario.

The accompanying plan shows longitudinal and cross sections of the double track to be built, and the single track will be of the same general character. The rails to be used will be 80 lb. A.S.

Mainly About Electric Railway People.

G. H. Dahl, heretofore statistician, Winnipeg Electric Ry., has been appointed as assistant to the Vice President and General Manager.

Alphonse Dubee, who was in the service of Montreal Tramways Co. and its predecessor for 51 years, latterly as chief clerk at the St. Henri depot, died at Montreal, April 25, aged 80. Patrick Dubee, Secretary-Treasurer of the company, is a son. The funeral at Cote des Neiges, was largely attended by officials and employees of the company.

G. Gordon Gale, M.Sc., Vice President and General Manager, Hull Electric Co., has been elected Vice President, Rowal Ottawa Golf Club.

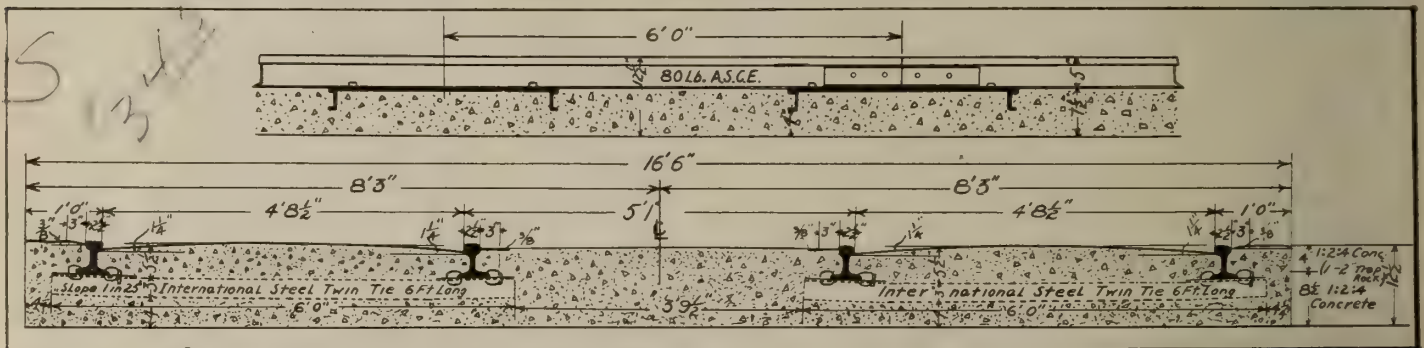
L. L. Price, heretofore in charge of appliance department, Winnipeg Electric Ry., has been appointed Superintendent of Distribution and Sales.

Julian Cleveland Smith, who has been elected President, Quebec Ry., Light, Heat and Power Co., was born at Elmira, N.Y., Oct. 7, 1878, and was educated at Buffalo, N.Y., and Cornell University. He began his business career as draftsman with W. C. Johnston, consulting engineer, Niagara Falls, N.Y., and two years later was appointed his assistant engineer at Shawinigan Falls, Que.

Nova Scotia Power & Tramway Co's Annual Report.

The directors' report for the calendar year 1922, issued recently, deals with the company's electric railway, light and power, gas, and steam heating departments. Its financial position improved greatly during the year. While gross earnings continued to decline, the decline was much more than offset by rapid decrease in operating expenses, the net result proving far more satisfactory than in 1921. The cost of material decreased to some extent, and wages were reduced about 4% in August. The resumption of preferred dividends is, however, not yet in sight, and there is no immediate prospect of being able to finance the cumulative preferred dividends not paid to date, amounting to \$24 a share.

The tramways department's gross earnings were 11.8% below 1921, due entirely to business depression, and the increased use of automobiles. The number of passengers carried, including transfers, was 10,897,160, compared with 12,143,197 in 1921. To meet this situation, service was curtailed to some extent. The car mileage decreased to 1,733,439, from 1,860,342 in 1921. The total amount received from tramway passengers was \$599,914.92. They used the 6½¢ ticket almost exclusively. The cost of tramway service, exclusive of



Longitudinal and cross sections standard double track construction, Hydro Electric Railways, Essex District.

C.E., in 60 ft. lengths. Joints will be welded, and International steel twin ties will be used. Dimensions of track allowance, distance between tracks, depth of foundation, etc., are shown in the plan.

The double track construction on Erie St., Windsor, will enable street car service to replace the trackless trolley service which has been given for some little time, the change being considered desirable due to increasing passenger traffic density. A new trackless trolley route, ¾ mile long, will be established on Tecumseh Road. In the Erie St. service the trolley bus has fulfilled what promises to become one of its chief functions, i.e., that of providing a growing district with adequate transportation until such time as traffic density warrants the construction of an electric railway line.

Winnipeg, Selkirk and Lake Winnipeg Ry., Winnipeg Electric Ry. subsidiary, is reported to be discussing with the Selkirk, Man. Town Council, a proposition for leasing Selkirk Park, and operating it in conjunction with the railway.

A Niagara, St. Catharines and Toronto Ry. car was struck by lightning on May 20, while between St. Catharines and Port Dalhousie, but no damage was done, except to the motor.

Montreal & Southern Counties Ry. is in the market for 1 motor baggage car and 2 suburban passenger trailer cars.

From 1903 to 1906 he was Superintendent, Shawinigan Water and Power Co., Montreal; 1906 to 1909, General Superintendent, same company; 1909 to 1913, General Superintendent and Chief Engineer, same company; and from 1913 he has been Vice President and General Manager, same company, and executive of all its subsidiary companies. Among other positions he holds are,—President, Public Service Corporation, Quebec, Que.; Canada Carbide Co.; Canadian Electro Products Co.; and North Shore Power Co., Three Rivers, Que.; Vice President, Dominion Engineering Works Ltd.; and director, Dominion Bridge Co.

W. N. Smith, Consulting Engineer, Winnipeg Electric Ry., has been presented with one of the two Plummer gold medals, for the best papers of 1921 and 1922, on a metallurgical or chemical subject.

The Montreal Tramways Co., was sued in the Quebec Supreme Court, Montreal, recently by the British America Insurance Co., British America Underwriters' Agency to recover \$137.50 for damage alleged to have been done by one of the company's electric cars to an automobile insured by the agency. Rt. Justice MacLennan found that the accident to the automobile was caused by the improper and negligent driving of its chauffeur and dismissed the action with cost.

taxes, necessary reserves, and return on the property dedicated to this service, was \$460,670.92. Of this amount 69.3% was expended in wages and salaries. The cost of conducting transportation was \$253,000, of repairs \$127,000 and other expenses were \$80,000. The company was able to effect a very great saving in operating expenses, with the result that the net earnings before taxes were 27.5% greater than in 1921. The number of kilowatt hours used by this department was 3,664,725, and the car miles operated, 1,733,439.

The Hydro Electric Railways Investigation.—The Premier of Ontario in answering questions as to the cost of government commissions stated in the Legislature, recently that the investigation into the Hydro Electric Radial Railways proposals by Mr. Justice Sutherland and other Commissioners cost \$162,705.41.

The Hydro Electric Power Commission of Ontario has issued passes for distribution to blind persons resident in the province, enabling them to ride free on all cars on railways operated by the Commission. Under certain conditions, these passes will be issued to persons of low grade partial sight. The lines upon which the passes are available are the Hydro Electric Rys., Toronto and York District, and Essex District and Guelph Radial Ry.

Arrangements for Canadian Electric Railway Association's Annual Meeting.

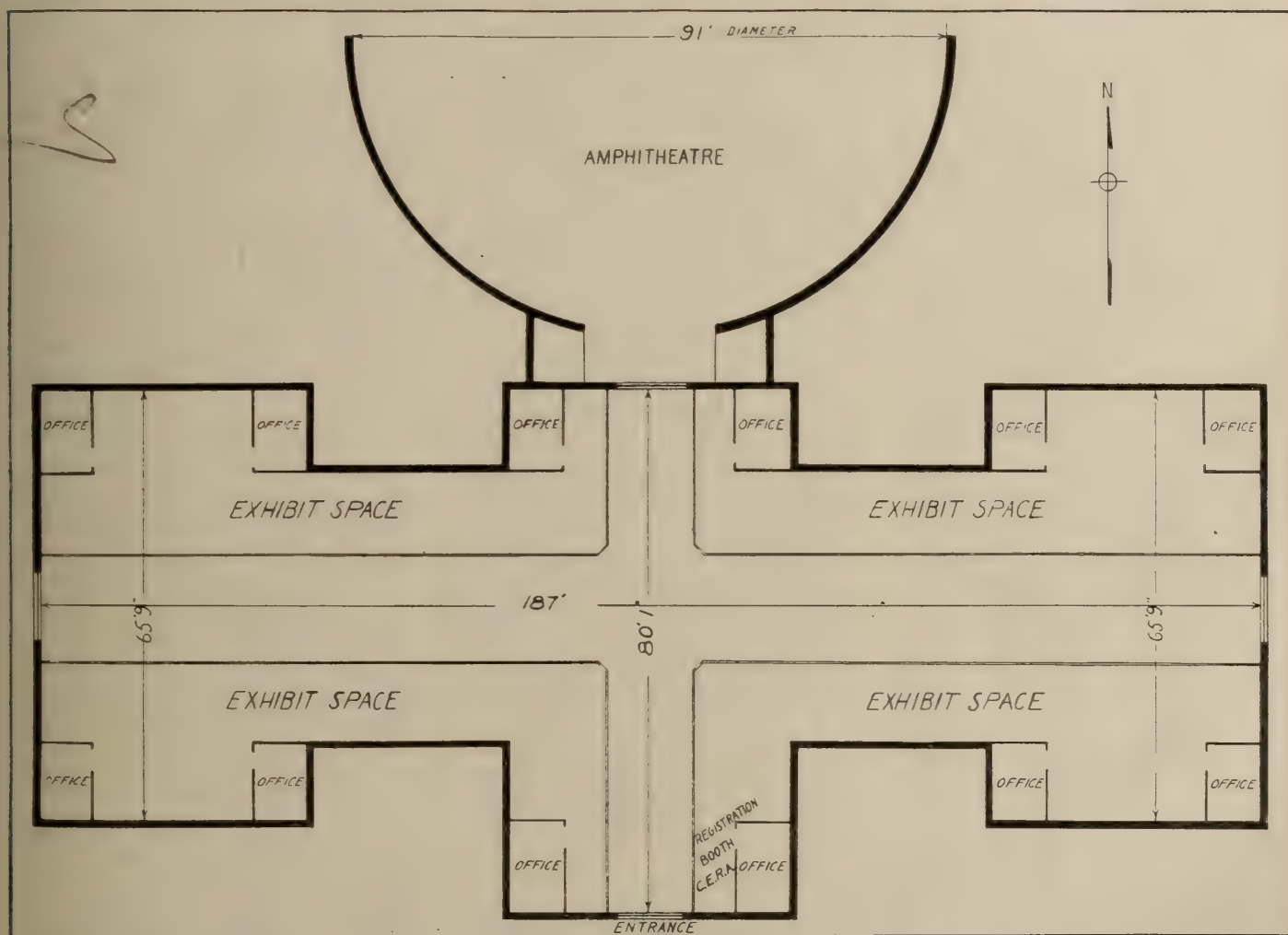
The committees appointed to make arrangements for the Canadian Electric Railway Association's annual meeting, to be held at Toronto, June 27 to 30, both inclusive, have been actively at work, and there is every indication that the meeting will be most successful in all its features, the business programme, the exhibits of electric railway equipment and supplies, and the social entertainment. The City Council has granted the use of the Music Building and the Press Building, on the Canadian National Exhibition grounds, which front on Lake Ontario, and are probably more attractive at the end of June than at any other time. The members' meetings will be

cheon at Toronto Harbor Commission pavilion, with address by the Association's President, Major F. D. Burpee, Manager, Ottawa Electric Ry. Afternoon:—Inspection of exhibits.

June 28, Thursday, Morning. Association meeting. Luncheon at Toronto Harbor Commission pavilion, with address by the Mayor of Toronto. Afternoon:—Inspection of exhibits. Inspection of Toronto Transportation Commission's different types of cars, which will be on loop near the exhibition grounds entrance. Motor trip round the city for ladies, finishing with tea at the Old Mill on the Humber. Evening, 7.30. Association's annual dinner at

Manager, Hydro-Electric Rys., Toronto & York District, Chairman; E. P. Coleman, General Manager, Dominion Power Transmission Co.; H. H. Couzens, General Manager, Toronto Transportation Commission; D. W. Harvey, Assistant Manager, Toronto Transportation Commission; W. J. Radford, Assistant Manager, Toronto Suburban Ry.; D. M. Campbell, Preston, Ont.; W. G. Gordon, Traction Engineer, Canadian General Electric Co.; H. T. Gibbs, Sales Engineer, Canadian Westinghouse Co.; and O. C. Rehfus, Mechanical Engineer, Canadian Steel Foundries.

Entertainment:—W. R. McRae, Superintendent of Rolling Stock and Shops,



Music Hall, Canadian National Exhibition.

The portion of the building marked "Exhibit space" will be divided by railings, to suit the different exhibitors. The Association's meetings will be held in the amphitheatre.

held in the amphitheatre in the Music Building and the exhibits will be displayed in the main portion of the building. The Press Building will be devoted to the use of ladies attending the meeting. The Toronto Transportation Commission will operate buses between its nearest electric railway lines, terminating outside the exhibition grounds and the Music and Press Buildings, and also between those buildings and the Toronto Harbor Commissioners pavilion, on the Lake front at Sunnyside, where the luncheons will be held.

The general programme arranged so far is as follows:—June 27, Wednesday. Morning.—Registration of members and associate members. Get-together lun-

King Edward Hotel.

June 29. Friday. Morning. Association meeting. Luncheon at Toronto Harbor Commission Pavilion, to be enlivened by a professional entertainer. Afternoon:—Inspection of exhibits. 5 p.m. Base ball game between members and associate members. The ladies will be taken on a trip round the harbor, finishing with tea at Royal Canadian Yacht Club. Evening. Dance at King Edward Hotel.

June 30. Saturday. Morning. Association meeting and election of officers.

The committees in charge of the arrangements are as follows:—

Exhibits:—C. L. Wilson, Assistant

Toronto Transportation Commission, chairman; I. S. Fairty, K.C., Solicitor, Toronto Transportation Commission; E. W. Oliver, General Superintendent, Electric Railways, Central Region, Canadian National Rys.; F. S. Livingstone, Traffic Manager, Hydro Electric Rys., Toronto and York District; F. J. Neale, Vice President, Dominion Wheel & Foundries, Ltd.; H. A. Moore, Toronto District Manager, English Electric Co. of Canada; W. R. Carr, Editor, Electrical News; and Aubrey A. Burrows, Business Manager, Canadian Railway and Marine World.

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., who is Papers, Etc.—D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways

Co., who is in charge of the papers to be read, has arranged for the following: "The operation of a scientific survey of traffic movements on urban railways," by Alex. Jackson, Superintendent of Time Tables, Public Service Railway Co., Newark, N.J. "Deciding on the proper motor for a given cycle of duty," by W. G. Gordon, Traction Engineer, Canadian General Electric Co., Toronto.

The President, Major F. D. Burpee, will lead a discussion on timely topics. The member companies have been asked to make suggestions as to questions they would like to have discussed, and the following have already been sent in:—

What is the experience of members who have tried automatic heater control?

Does the Peter Witt type of car increase or reduce the abuse of transfers?

What steps have been taken by city authorities to restrict vehicular traffic at congested loading points during rush hours?

Has the redipping of old armatures in varnish been tried, and with what results?

Exhibits.—The Association's meetings have, as stated above, been fixed for the mornings and the afternoons are to be devoted almost entirely to the associate members' exhibits, which promise to be extensive and most interesting. The accompanying plan of the Music Building shows the portion to be devoted to exhibits, which will be divided by railings into about 40 separate spaces. Up to May 25 the following have signified their intention of exhibiting:—Allen General Supplies, Toronto; Don. M. Campbell, Ltd., Preston, Ont.; Canadian Car & Foundry Co., Montreal; Canadian General Electric Co., Toronto; Canadian Steel Foundries, Montreal; Canadian Street Car Advertising Co., Montreal; Canadian Westinghouse Co., Hamilton, Ont.; Dominion Wheel & Foundries, Toronto; Ferranti Meter & Transformer Mfg. Co., Toronto; Lyman Tube & Supply Co., Montreal; Metal & Thermit Corporation, New York; Ohio Brass Co., Mansfield, Ohio; Ottawa Car Manufacturing Co., Ottawa, Ont.; E. F. Phillips Electrical Works, Montreal; Railway & Power Engineering Co., Toronto; Sarnia Bridge Co., Sarnia, Ont.; Southam Press, Montreal; Standard Underground Cable Co., Hamilton, Ont.; United States Steel Products Co., New York; Witherow Steel Co., Pittsburgh, Pennsylvania.

The Toronto Transportation Commission will give every possible facility to members to inspect its property, the most interesting features of which will doubtless be the new Eglinton car house; the new Hillcrest shops and stores, now being built; and also some of the track work under construction. The Commission's staff will be glad to accompany members, and show them everything possible.

A Montreal City Council's special committee, which has been studying the transportation situation for some months past, is stated to have prepared a report to be laid before the Council. Such will attest that the present electric service is inadequate for the requirements, that there are too many car stops; that an auto bus service will relieve the situation, and that there should be a municipal inspection of the service.

Two London St. Ry. employees were presented with rings, by the local Kiwanis Club, recently, in acknowledgment of courtesy.

Port Arthur and Fort William Electric Railway Differences.

The cities of Port Arthur and Fort William, Ont., continue to have difficulty with the operation of the electric railways which connect and serve the two cities. For some years past each city has owned the lines within its own boundaries and has operated its cars over the connecting lines to a central point in the other city. One minor matter after another has developed since this system went into force, which have been the cause of considerable friction between the Port Arthur Public Utilities Commission and the Fort William Utilities Committee, which finally culminated in the passing of the following resolution by the first named city:

Canadian Electric Railway Association.

Honorary President, E. A. Robert, President, Montreal Tramways Co., and Quebec Ry., Light, Heat & Power Co.

Honorary Vice President, Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co.

Honorary Council: Thos. Ahearn, President, Ottawa Electric Ry.; Acton Burrows, Proprietor, Canadian Railway and Marine World; Geo. Kidd, General Manager, British Columbia Electric Ry.; Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., and director, Quebec Ry., Light, Heat & Power Co.

President, Major F. D. Burpee, Manager and director, Ottawa Electric Ry.

Vice President, H. H. Couzens, General Manager, Toronto Transportation Commission.

Executive Committee: The President, the Vice President, the immediate past President (G. Gordon Gale, Vice President and General Manager, Hull Electric Co.) and D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; D. W. Houston, Superintendent, Regina Municipal Ry.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; R. Mayne-Reade, Superintendent, Quebec Railway, Light & Power Co.; W. R. Robertson, General Superintendent of Railways, Hydro-Electric Power Commission of Ontario; W. L. Weston, Manager, Nova Scotia Tramways & Power Co.; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

Treasurer, W. S. Hart, Managing Director, Three Rivers Traction Co.

Auditor, Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Ry.

Secretary, D. N. Gill, Comptroller, Ottawa Electric Ry., Ottawa, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

"That whereas the Fort William Utilities Committee and the Port Arthur Public Utilities Commission, cannot arrive at a mutual satisfactory working agreement in connection with the operation of the street railway on the main line; therefore this Commission advise the Fort William Utilities Committee that on and after May 15, this Commission will operate exclusively main line service of its street railway with its own equipment and men." The second resolution was "That this Commission requests the Manager to arrange all details with Fort William relative to ticket fares and interchange of same after May 15, and that other operating details be also discussed in an effort to facilitate the conveyance of passengers from Port Arthur to Fort William and vice versa."

Following this decision the Port Arthur Commission installed a loop to turn its cars at the boundary and the Fort William Committee made arrange-

ments for terminating the run of its cars at the same point. It was announced May 12, that an arrangement had been completed between the officers of the two lines for a schedule which would give practically the same service between the two cities as formerly, except that passengers would have to change cars. The new service was put in force May 15, as arranged, and was reported to be working smoothly.

The Fort William Utilities Committee on May 18, passed a resolution deploring the inconvenience caused to passengers by having to change cars at the boundary, and expressed its willingness to continue the through service as heretofore.

Cars for Montreal & Southern Counties Ry.

The Montreal & Southern Counties Ry. has ordered a motor baggage car, and a trailer, from Ottawa Car Manufacturing Co. The baggage car will be of the inter-urban type, with arch roof, steel underframe and wood superstructure, and will have the following chief details: Length over buffers, 49 ft. 8 in.; center to center of bolster, 27 ft.; width over all, at eaves, 8½ ft.; height, top of rail to top of roof, 12 ft. 8½ in.; height, top of rail to center line of couplers, 2 ft. 10½ in.; wheel base, 6½ ft.; trucks, Taylor M.C. B.; motors, 4 Westinghouse 306-CV-4 60 h.p.; control, Westinghouse cabinet H. L.; air compressor, Westinghouse D-2-EG, 25 cub. ft.; air brake, Westinghouse AMM, M.23 brake valve; wheels, rolled steel, 34 in.; heater, Peter Smith 1-S; couplers, Tomlinson special 8; trolley bases, O.B. form 2; signal, electro-pneumatic; headlight, Golden Glow, 250 watt; gears and pinions, helical 20-64; weight, approximate, 56,000 lb.

The trailer car will be of the suburban Pullman type, with steel underframe, wood superstructure and drop platform, without smoking compartment, and will have the following general details: Length over buffers, 49 ft. 8 in.; center to center of bolster, 27 ft.; width over all at eaves, 8½ ft.; height, top of rail to top of roof, 12 ft. 6½ in.; height, top of rail to center line of coupler, 1 ft. 10½ in.; height, top of rail to platform, 3 ft.; height, top of rail to top of floor, 3 ft. 8½ in.; seating capacity, 56; wheel base, 6 ft.; heaters, electric; seats, Hale and Kilburn reversible; trucks, Taylor M.C.B.; air brake, Westinghouse AMM; wheels, rolled steel, 34 in.; couplers, Tomlinson, form 8; signal, electro-pneumatic; ventilators, Utility; weight, approximately, 39,000 lb.

The Manitoba Legislature has passed an act transferring the duties of the Public Utilities Commission to the Provincial Secretary, and amending the Public Utilities Act as rendered necessary by the abolition of the Commission. Provision is made for the appointment by the Lieutenant-Governor in-Council of a person to assist, or to act in place of, the Provincial Secretary in carrying out the new duties developing on him. The arrangement under which P. A. Macdonald, former Public Utilities Commissioner has done the work since May, 1922, to which date provision was made in the estimates for a salary, terminated, and, by agreement, Mr. Macdonald has been given \$2,000 as a final payment for his services.

Toronto Transportation Commission's Activities.

Appropriations and Expenditures.—

The city council has authorized an appropriation of \$5,000,000 for the Commission's 1923 programme. We are officially advised that of this, \$1,660,000 will be spent for cars, and \$90,000 for buses. Other estimated expenditures will be as follows: Trackwork on Dundas St., from Ossington to Bathurst St., and from Ritchie Ave. to Roncesvalles Ave.; on College St., from McCaul St. to Spadina Ave.; on Queen St., from Broadview Ave. to King St.; on Scott St., from Front St. to Wellington St.; and on Gerrard St. bridge approaches, \$897,925. Special work: Carlton and Sherbourne Sts.; College and Yonge Sts., Richmond and Yonge Sts., Front and Bay Sts., Front and Scott Sts., Dundas and Bathurst Sts., and curves on Spadina Crescent, \$333,475. Track extension and special work connected therewith, \$436,720. Miscellaneous track work, \$175,440. Car house layout, trackage, etc., Roncesvalles and Lansdowne car houses, \$328,090. Overhead construction, \$275,000. Land and loops, Coxwell yard, \$160,000; Roncesvalles Ave. car house and Russell and Lansdowne car houses, \$620,100. Miscellaneous equipment, \$21,250. No provision has been made for rehabilitation of the portion of the Toronto Suburban Ry. within the city limits, which will, it is expected, be acquired from the Canadian National Rys. It is estimated that this work will require \$2,500,000.

Shortly after the appropriation was passed by council, representatives of machinists, boilermakers, joiners, etc., appeared before that body and asked that it be impressed upon the Commission's officials that orders for all equipment should be placed in Toronto, if possible. This request inspired one alderman to move that the appropriation be deferred until it was ascertained whether all contracts could be let to local firms, but the motion was voted down. Another alderman moved that, as the Commission had undertaken to expend \$1,500,000 for new repair shops, the appropriation for cars and buses should be deferred until the repair shops were completed and it was ascertained whether the Commission could build the equipment there. This was also defeated.

The new cross town line on Dundas St. is being proceeded with, track laying on Dundas St., west of Yonge St., being completed, and installation of the intersection at Yonge St. being under way at the time of writing (May 18). On completion of this part of the work, construction of the track east of Yonge St. to a junction with the line running east on Dundas St., from Victoria St., will be undertaken, coincidentally with the installation of intersections at Bay and Dundas Sts., and at the eastern connection near Victoria St., the idea being to keep Bay and Victoria Sts. open to vehicular traffic while Yonge St. is closed, and to have Yonge St. open while Bay and Victoria Sts. are closed. The connection will provide a new east and west route across the city.

Toronto Suburban Ry. Rehabilitation.

—A deputation of citizens from the area served by the Toronto Suburban Ry. city lines waited upon Commission officials recently to present their views as to what should be done with the T. S. R. within the city limits when the city acquires it. The deputation urged an immediate service on Dovercourt Road, north to Davenport Road; and after

acquisition, a double track on Davenport Road to replace the present T. S. R. single track line. The Commission informed the deputation that definite plans had not been made as to the trackage and car routing to be provided. It was pointed out to the deputation that they must not expect too much, because it will likely cost about \$2,500,000 to rehabilitate the lines; that they are incurring a \$50,000 annual deficit now; that the \$90,000 annual revenue now being received will be lost when the lines are placed in the one fare system, and because the cost of operating large cars on the rehabilitated lines will be heavy. Consideration of the representations made was, however, promised.

Roncesvalles Car House.—The Commission received tenders to May 18, for the construction of the Roncesvalles car house and a brick office building, including all work for the completion of the buildings, such as plumbing, heating, electric wiring, rolling steel doors and automatic sprinkler system. We are officially advised that the contract has been awarded to Sullivan & Fried, Toronto, subject to satisfactory settlement of details. This car house will be located at Roncesvalles Ave. and Queen St., and will be of thoroughly modern construction, very similar to the house built at Eglinton Ave. and Yonge St. in 1922. A preliminary description was given in Canadian Railway and Marine World for April, the Eglinton Ave. house having been described and illustrated in preceding numbers.

The Commission has been authorized by the council to raise the grade of Queen St. for about 500 ft. west of Roncesvalles Ave., to provide approaches for the new car house and yard, and has also been given authority to widen the street from 44 to 66 ft., for 220 ft. west of Roncesvalles Ave. On account of grade variations at the car house site, a retaining wall is necessary for some distance along the south and west sides, and tenders for it, including excavation, concrete work, steel reinforcement, etc., were received to May 21. The wall will be gone ahead with at once, to permit work on the car house to proceed without delay. Families living in houses on lands expropriated have removed, and the entire site for car house and yard will be available in the near future.

Repair Shop Equipment.—The Commission received tenders to May 31, for machinery and other equipment for the large new repair shops being built at Bathurst St. and Davenport Road, as follows: Machine shop tools: 1, 36-in. lathe; 1, 24-in. lathe; 1 pattern lathe; 1, 20-in. x 10 ft. bed speed lathe; 1, 18-in. x 10 ft. bed speed lathe; 1 tool room lathe; 1 turret lathe; 1, 14-in. x 6 ft. bed speed lathe; 1, 4-spindle drill press; 1, 5-spindle automatic drill; 1, 3-spindle drill; 1, 20-in. stroke shaper; 1 inclinable power press; 1 universal milling machine; 1 power hack saw; 1 tool room grinder; 1 wet twist tool and twist drill grinder; 1 surface plate; 5 wet wheel grinders; 2 combination floor grinders and buffers; 1 bolt cutter; 1 bench leg; 1 dial test indicator. Armature room requirements: 12 sets armature stands; 3 tension reels; 3 coil winding machines; 1 insulation test set; 1 dipping room, with racks, etc.; 1 baking oven, 10 arm. capacity; 1 stationary cleaner; 6 gas heaters for soldering irons; 6 gas and air blow torches; 1 bulldozer; 1 oil furnace, 24 x 36 in.; 1

oil furnace, 24 x 72 in.; 1 roll former; 1 shear, 42-in. capacity; 1 forge; 1 welding outfit; 1 rabbit furnace. Woodworking tools: 1 chain mortiser; 1 knife grinder; 1 saw sharpener; 1 band saw filer; 1 grindstone. Hoists: 1, 5-ton electric monorail hoist; 14, 1½-ton hoists; 1, 1-ton hoist. Air hammers and electric drills: 1, no. 40 safety chipping hammer; 1, no. 60 safety chipping hammer; 1, no. 90 safety chipping hammer; 2 universal electric drills, ¾ in. drill; 1 universal electric drill, ½ in. drill; 1 universal electric drill, 1¼ in. drill. Lift trucks: 6 lift trucks, 17 x 37 in.; 4 lift trucks, 24 in. x 5 ft.; 2 electric elevating trucks. Miscellaneous equipment: 5 time clocks; 14 jib cranes; 8 car hoists.

Special Work Installation.—In addition to track work in various parts of the city, the Commission is installing new special work at various intersections. The large intersection at Roncesvalles Ave., Queen St., King St. and Lake Shore Road has been installed and the paving laid, and installation of an intersection at the south junction of Dundas St. and Bathurst, in addition to others, is proceeding at the time of writing (May 18).

York Township Transportation Surveys.—The Commission has entered into an arrangement with York Township Council, by which Commission surveyors and engineers will make surveys and studies in connection with the transportation situation within the township. In various parts of the township adjacent to the city limits, population is increasing rapidly, with the result that more adequate transportation is becoming necessary. Extensions of the T. T. C. lines into the township, at the latter's expense, and the inauguration of bus lines, are looked upon as possible results of the investigations. The Commission will be paid \$1,200 for the investigation.

Loss from Special Fares.—Prior to construction by the Commission of the double track line from Farnham Ave. to Toronto's north limits, agitation by North Toronto citizens, for a single fare to cover the Commission's lines and the Toronto & York Radial Ry. Metropolitan Division, led to the Commission and the radial railway issuing a joint ticket, which consisted of four 2-part strips, one part of each strip being good on the Commission's lines, and the other part on the T. & Y. R. R. Metropolitan Division. These tickets sold for 25c. For each ride the Metropolitan Division got 5c, which left the Commission but 5c for four rides, or 1¼c a ride. The loss to the Commission from this arrangement was \$27,000. The joint ticket arrangement was covered from the city board of control, as follows: "The board beg to report that they have made arrangements with the Toronto Transportation Commission, whereby passengers using the Metropolitan Ry. cars, between Farnham Ave. and the north city limit on Yonge St., will be carried to and from any part of the city upon payment of the fare fixed by the Commission, and on behalf of the city the board has given assurance to the Commission that the operation of the foregoing arrangement shall not be at the expense of the Commission."

Some aldermen and city officials are now trying to make the Commission bear the loss, maintaining that if the Commission had had its double track line on Yonge St. in operation during

the period when the joint tickets were in use, it would have had to carry the passengers at a single fare anyway. The Commission maintain that it was only upon the city undertaking to make good the losses incurred that it undertook to be a party to the joint ticket arrangement. No decision in the matter has been reached.

Old Cars Etc., Sold:—The Commission has sold to Don M. Campbell, Ltd., Preston, Ont., the following cars, etc., which were advertised in Canadian Railway and Marine World for May:—59 single truck cars, complete with G. E. 67 motors; 6 single truck cars, complete with G. E. 1000 motors; 1 Brill M.T. truck car, complete with G. E. 67 motors; 2 single truck trailer cars complete; 11 single truck trailer car bodies and trucks (no motors; 7 double truck closed motor car bodies, (no motors or trucks); 10 single trucks (no bodies), with G. E. 1000 motors; 6 G. E. 1000 motors and 6 pairs of wheels (no trucks or bodies).

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:—

	Mar. 1923	Mar. 1922	3 mos. to Mar. 31, 1923	3 mos. to Mar. 31, 1922
Gross	\$874,663	\$849,680	\$7,830,216	\$7,771,665
Expenses	609,548	597,801	5,470,686	5,611,925
Net	265,115	251,879	2,359,530	2,159,740

Cape Breton Electric Co.—

	Feb. 1923	Feb. 1922	2 mos. to Feb. 28, 1923	2 mos. to Feb. 28, 1922
Gross.....	\$55,498	\$42,620	\$116,086	\$96,424
Expenses.....	52,832	52,073	111,079	114,892
Net.....	2,666	*9,453	5,007	*18,468
Fixed charges....	5,579	5,495	11,456	11,357
Deficit	2,913	14,948	6,449	29,825

* Deficit.

Guelph Radial Ry.—The Ontario Legislature has amended the Guelph Railway Act of 1921 by authorizing the city to pay on a proposed \$150,000 50-year bond issue, with interest not exceeding 6%, instead of a 20-year bond issue of \$150,000 with 6% interest as originally authorized, the city to pay 5% on its \$300,000 of 50-year debentures, instead of 6% rate, to be issued in connection with the transfer of the Guelph Radial Ry. to the Hydro Electric Power Commission of Ontario. The act also provides that it should not be necessary for the city to deposit with the Commission any debentures in addition to the \$300,000 already deposited, until the amount of bonds issued by the Commission for the rehabilitation and extension of the line shall be in excess of that amount, when further deposits of debentures shall be made by the city to cover the cost of such work.

Kitchener and Waterloo St. Ry.—The town of Waterloo, Ont. has granted the Kitchener Light Commissioners a 20-year franchise for the operation of an electric railway in the town, one of the conditions being that the commissioners shall pay annually to Waterloo Town Council 25% of the net profits of the line.

New Brunswick Power Co.—The control of the New Brunswick Power Co., owning the electric railway and other properties in St. John, N.B., is reported to have been acquired by the Federal Light and Traction Co., New York, N.Y. A press report states that the transaction involved the purchase of 20,000 shares of the common stock at \$15 a share, a total of \$300,000. The company has outstanding \$1,869,000 of 5% bonds due in 1937; \$1,000,000 of 7% cumulative 1st

preferred stock, and \$350,000 7% non-cumulative preferred stock. The bonds and preferred stock are held largely in the New England States.

St. Thomas Municipal Ry.—The St. Thomas, Ont. City Council authorized the City Engineer and the City Treasurer recently to make an appraisal of the municipal railway, which has been completed. A press report states that the valuation is \$129,550.36.

Waterloo-Wellington Ry.—An agreement is reported to have been reached between the company and the Kitchener Light Commissioners, operating the Kitchener and Waterloo St. Ry., for the sale to the latter of the Waterloo-Wellington Ry. lines for \$25,000. Bridgeport ratepayers were to vote on the proposal on May 19, and Kitchener ratepayers on May 30.

The Waterloo-Wellington Ry. is the new title of the Berlin and Bridgeport Ry., which extends from Kitchener to about half a mile beyond Bridgeport, Ont., 3.45

miles, and has a charter for an extension, which is partially built from Bridgeport to Guelph. For the calendar year 1921 its gross receipts were \$10,660.04 and gross operating expenses \$8,212.50, leaving a net income from operation of \$2,447.54. Against this was charged:—Taxes, \$585.40; interest on funded debt, \$3,600; interest on floating debt, \$339.98; total \$4,525.44, showing a net loss of \$2,077.90. The number of passengers carried was 173,371, and the cars ran 35,000 miles. The capital account shows common stock \$19,200, and \$60,000 of bonds. The company owns 3 closed cars, and 7 miscellaneous cars. W. H. Breithaupt, Kitchener, Ont., is President.

Winnipeg Electric Railway.—

	Mar. 1923	Mar. 1922	3 mos. to Mar. 31, 1923	3 mos. to Mar. 31, 1922
Gross	\$482,375	\$464,901	\$1,449,316	\$1,436,335
Expenses ..	324,203	316,527	994,838	687,491
Net	158,172	148,374	454,478	798,844
Fixed charges ..	90,656	82,947	255,955	582,213
Surplus	67,516	65,427	198,523	216,631

Electric Railway Employees' Wages, Working Conditions, Etc.

Brantford Municipal Ry.—We are officially advised that a board of conciliation has been appointed by the Labor Department to investigate wage and other differences between the Brantford, Ont., Municipal Railway Commission and its employees. The board consists of J. G. O'Donoghue, K.C., Toronto, chairman; F. H. McGuigan, Toronto, representing the commission, and Jas. Simpson, Toronto, representing the men. G. D. Kelley, Ottawa, was originally nominated by the Commission as its representative, but he was unable to accept, as he had been nominated by the Ottawa Electric Ry. to serve on a similar board at Ottawa. The present wages for motormen and conductors per hour are; 1st year 41c; 2nd year, 43c; 3rd year and thereafter, 45c; with time and a quarter for overtime. The employees asked for a new agreement with the following pay;—1st year, 51c; 2nd year 53c; 3rd year, and thereafter, 55c, with time and a half for overtime, and 7 days holiday in the year with full pay.

The board concluded the hearing May 21, and a press report states that it arrived at a unanimous decision, which has been accepted by the Municipal Railway Commission and its employees. The decision, it is reported provides for 9 hours work a day, to be performed, where practicable, in 9 consecutive hours, but in no case to exceed 12 hours, with time and a half for overtime, the pay for motormen and conductors to be 10% higher than heretofore viz:—1st year, 46c. an hour; 2nd year, 48c. and 3rd year, 50c.; and that those rates will be retroactive to April 1.

Calgary Municipal Ry.—A special arbitration board appointed by Calgary, Alta., City Council, and the Civic Employees' Federation which began its sittings April 13, to consider the wage schedules arranged by the city commissioners for all classes of civic employees, completed its work May 7, and presented a report.

The board consisted of J. S. Arnold and G. E. Hughes, nominated by the city council; A. Farmilo and R. Livett, nominated by the Civic Employees' Federation; and Col. Saunders was selected as chairman. There is one general report, which by prior agreement between the parties, is to be binding on all. In ad-

dition, the chairman, in a covering letter, expressed the opinion that the present time is most unpropitious for arbitrating a wage schedule. The city's representatives, in a supplemental report, objected to some of the grounds on which the finding was based, and expressed the opinion that the present award should not be used as a precedent upon which to base future agreements, particularly when it is considered that the 1922 agreement was one of expediency. The men's representatives also presented a supplemental report in which they stated that the rates fixed by the general report were too low. The city commissioners proposed a wage schedule from 6 to 20% lower, than that in force for 1922, the reductions in wages for street railway employees department—varying from 6 to 10%. The arbitrators general report declared for the retention of the 1922 schedule, with a few exceptions which do not affect the street railway employees. Overtime is to be paid for at the rate of time and a quarter for the first hour; time and a half for the next three hours, and double time after instead of time and a half for first four hours and double time thereafter. Some minor alterations are made in working conditions.

London and Port Stanley Ry. Trackmen's wages were reduced from 40c an hour to 38c about a couple of months ago, the bonus of 10% being also cut off, in order to place them on the same level as steam railway trackmen in the district. The Michigan Central Rd. and the Pere Marquette Rd. subsequently increased their trackmen to 40c an hour, and the L. and P.S.R. has followed suit, the 40c an hour rate being made effective from May 1.

Montreal Tramways Co.—A press report states that the employees decided on May 17, to ask the company for an 8-hour day with an increase of pay to 60c. an hour, for senior men, against 40c. as at present, to take effect on the expiration of the present agreement on June 30.

In Aug. 1920, a board of conciliation recommended the following wages per hour, as from July 1:—1st year, 45c., 2nd year, 50c., 3rd year and after 55c., which schedule was accepted by the company and its employees after several conferences. In 1921, the company

gave notice of a 20% reduction of these rates to take effect July 1, but after some consideration conceded something to the men fixing the reduction at 12½%. On the men's application a board of conciliation was appointed, in which the company refused to take part. This board reported in September, the majority finding that the proposed reduction was not unreasonable.

Ottawa Electric Ry.—A board of conciliation has been appointed by the Labor Department to investigate a dispute as to wages and working hours between the

company and its employees. The board consists of F. J. Costello, Alexandria, Ont., chairman; G. D. Kelley, Ottawa, representing the company, and H. J. Burns, Ottawa, representing the men. The board was appointed upon the application of the employees, which stated that a draft agreement was presented to the company, March 19, in which were embodied changes in the present working conditions, a reduction in the daily hours of labor, and an increase in wages. The application stated that the proposed agreement had been discussed with the

Manager and Secretary of the company, without result. The men ask that all employees shall belong to the union; that an 8-hour day be established in all the company's departments, and that a 25% increase of wages be given. The management stated that it could not increase wages and that it was unlikely that the present rate could be continued after May 1. The 8-hour day was asked for by the men in 1922, and was reported against by the majority of a board of conciliation which then made an investigation.

Electric Railway Projects, Construction, Betterments, Etc.

Brantford Municipal Ry.—Brantford City Council has authorized the following expenditures: Repairs and renewals of permanent track and roadway \$21,000; new track and overhead on Oxford West, 1,200 ft., \$9,000. The new track will connect up the West Brantford section, which is now served with buses, and the work will be done in connection with the building of the new Lorne Bridge, which will cost about \$240,000. The Municipal Railway Commission visited Toronto recently to see the welding system on the City lines (Dec. 1921, pg. 660).

British Columbia Electric Ry.—The Board of Railway Commissioners has authorized the company to connect its tracks with those of the Vancouver and Lulu Island Ry. (which it operates under lease from the C.P.R.), at 4th Ave., Vancouver, with leave to abandon passenger service from intersection of V. and L.I. Ry. to the present station on Granville St. bridge, and to demolish the station there.

A contract is reported to have been let to Robertson and Rendell, Vancouver, for the foundations and walls of a new automatic electric substation at 34th Ave., and Main St., South Vancouver. The new building will, it is said, be one story of reinforced concrete, 35 x 50 ft., provided with a concrete slab roof, to be put on by the company's own forces, as soon as the heavy equipment has been installed by Canadian Westinghouse Co. (May, pg. 238.)

Chatham, Wallaceburg and Lake Erie Electric Ry.—Some time ago the Chatham, Ont. City Council requested the company to move its tracks on Queen St. South, from the side to the middle of the street, about a mile, so that the city might go on with the paving. The estimated cost of the removal work is put at \$4,000, but the company claims that its financial condition will not permit it to do it. The city authorities are said to be determined to proceed with the paving and the company's officials are reported to have stated that if this is done service over the entire system will be suspended. The city council is making an application to the Board of Railway Commissioners in connection with the matter. (March, pg. 134.)

Hamilton Radial Ry.—G. E. Mountain, Chief Engineer, Board of Railway Commissioners, was in Hamilton, Ont., May 9, inspecting the company's tracks on Birch Ave. Hamilton City Council wants the tracks moved off the street, and re-laid on the company's private right of way. The cost of the removal of the tracks is estimated at \$12,000, and the company says that it is unable to finance the work. (March, pg. 134.)

Kitchener and Waterloo St. Ry.—Waterloo, Ont. ratepayers have, by a

vote of 217 to 19, granted a 20-year franchise to the Kitchener Light Commissioners, for the operation of a street railway in the town. The franchise authorizes the operation of a street railway on King St. from the southeastern boundary to the northwestern boundary, and on Church St. from King St. to the northeast side of Water St. The King St. line is to be double track from the southeastern boundary of the town to William St., about 2,500 ft., and the single track thence to the northwestern boundary of the town, is to be provided with turnouts to enable a 5-minute service when required. The paving between the tracks and for 12 in. on the outside of the rails is to be paid for in the first place by the town, but the Commissioners agree to pay for any additional cost of pavement between the tracks and for 12 in. outside, over the regular cost of pavement on the same portions of the street, and to maintain the pavement as described after it has been laid. This is a renewal of the franchise under which a single track line is being operated. The present line to William St., 2,500 ft. is to be taken up, and a new double track line laid. The material for the new construction has been ordered, and was expected to be put in hand by May 31. (May, pg. 238.)

London St. Ry. An arrangement is reported to have been arrived at, between the company and the London, Ont., City Council, under which the roadbed and track on Stanley St. will be renewed at once, and paving work on other streets for which the company is responsible will be done as required by the city. The work will, it is said, be done by the city and the company will be given 10 years within which to pay for the work. (Nov. 1922, pg. 581.)

Montreal Tramways Co.—The construction of a double track line on Rosemount Boulevard, between Papineau Ave. and Frontenac St., was started May 2.

The Montreal City Council executive committee visited Shakespeare Road, May 5, to the project to extend a Montreal Tramways Co., line to the Mountain Park.

A city water main at Windsor St. and Antoine Street burst May 16, doing considerable damage to both streets, along which the Montreal Tramways Co. has a line. Cars were diverted to permit of the construction of a temporary trestle to carry the line pending the permanent repair of the road and the installation of a new intersection. (May, pg. 238.)

New Brunswick Power Co.—The Federal Light and Traction Co., New York, N.Y., which is said to have secured control of the N.B. Power Co. is reported to be preparing to spend a large sum in rehabilitating the electric railway, and

the lighting and power plant in St. John, N.B., and in developing a water power site. (April, pg. 181.)

The New Brunswick Power Co. is relaying the track on Dock and Wall Streets, St. John, with new 82 lb. rails on new ties. (April, pg. 181.)

Niagara, St. Catharines and Toronto Ry.—The Board of Railway Commissioners last autumn directed the company to remove its tracks in Merritt, Ont., from Thorold Road to Merritt St. and to repave the street, the work to be commenced by March 15, 1923. As nothing was being done the Merritt Town Council took steps to enforce the order. A. C. Boyce, one of the commissioners sat at Merritt to consider the application. A. Fraser, K.C. is reported to have stated on behalf of the company that the railway was not making maintenance expenses, let alone operating costs, and the enforcement of the order might compel the cessation of operation. It was decided that the town council would advertise for tenders to have the work done, in anticipation of the rehabilitation report now being prepared by the Canadian National Rys. in connection with the electrification of lines in the Niagara region, which it was expected would be ready for consideration in a few weeks.

The Board of Railway Commissioners has approved the proposed diversion of the company's line across the new Welland Ship Canal, lock no. 1 at Port Weller, Ont., the diamond crossing of Welland Ship Canal construction railway and interlocking plant installed at crossing of N.St.C.&T.Ry. to be moved to diverted location, and has authorized the company to carry traffic over the diverted line under construction at not exceeding 8 miles an hour, and has also ordered that inner guard rails be laid on deck of temporary trestle bridge, and that slow boards be erected at the beginning of the diversion on each side of the canal crossing. (Feb., pg. 81.)

Regina Municipal Ry.—Regina, Sask. ratepayers have by 808 votes to 455 passed a bylaw to provide \$24,000 for betterment works on the railway which is to be expended as follows:—Extension of 13th Ave. track one block, and building loop at terminus \$1,100; half cost of half-interlocking plant, installed at 4th Ave., and C.P.R. Saskatoon line \$2,700. Electric track switches \$900. Improvements to stand-by plant at city power house, consisting of a motor to operate d.c. machines, now run by auxiliary steam plant, \$19,300. (May, pg. 238.)

The Windsor, Essex & Lake Shore Rapid Ry. is building a siding, about 600 ft. long, south of the town of Essex.

Marine Department

Canadian Government Merchant Marine Ltd. Annual Report.

The Canadian Government Merchant Marine Ltd. fourth annual report for the calendar year 1922 has been issued over the signature of Sir Henry W. Thornton, as follows: The fleet consists of 64 ships with a deadweight tonnage of 378,237.

Results of Operation—The accounts for the year, as certified by the auditors, show the following results:—

Gross revenue from closed voyages.....\$ 9,705,786.97
Operating expenses, closed voyages..... 12,089,976.14

Deficit from operation.....\$ 2,384,189.17
Interest accrued on notes
to Government \$4,078,277.74
Reserve for depreciation 2,932,130.14
Reserve for outstanding
liabilities 40,000.00
Reserve for doubtful
debts and claims..... 96,122.00
Interest on Government
advances 118,759.67

Deficit, after all charges, including
depreciation and interest..... \$9,649,478.72
7,265,289.55

The loss in operation during the year, owing to adverse conditions in the steamship business was to be anticipated. It is admitted by the best authorities that the past year was the worst in recent shipping annals. While tonnage offering increased to some extent, the commodities were of lower value than in preceding years, and, as a consequence, the earnings fell off considerably. Outward tonnage was fairly well maintained, but on the other hand the inward business, more especially from the United Kingdom, Oriental and Australasian ports fell away to such extent that it was exceedingly difficult, and at times impossible, to obtain, and, on this account, a great proportion of the voyages during the year resulted in losses.

The company's operations, while showing a loss during 1922, have proved to be a decided advantage to the Canadian National Rys. Shipments turned over to the railway for the 11 months ended Nov., 1922, amounted to 172,577 tons, to which should be added 36,949 tons of import freight handled over the Government dock at Vancouver from Dec. 1, 1921, to Nov. 1, 1922. The revenue accruing to the railways for passengers carried to and from our steamships during the same period amounted to \$34,101.21. It will be admitted that a large portion of business of this nature would undoubtedly have been handled through other channels and by other railways had the company's ships not been in operation.

West Indian Passenger Service—The combined passenger and freight steamship operation inaugurated to give service every three weeks to the Bahamas, Jamaica and British Honduras, has, from the outset, been unprofitable from a revenue standpoint, and in an endeavor to reduce losses Bermuda was added to the itinerary in June, the Canadian Fisher and the Canadian Forester making Hamilton, Bermuda, an additional port of call. The result, both as regards passenger and freight, has been satisfactory, and, as a consequence, the loss in this branch of the service has been materially reduced. The Canadian Fisher and Canadian Forester in operation on this route are not suitable for the trade, and it is considered essential, in order to make a success of this branch of the service, that a special type of oil-burning steamships, with increased passenger accommoda-

tion, and fitted with proper refrigeration and ventilation facilities to take care of perishable shipments, be provided. This service was established at the Government's request, as a result of the Canada-West Indies trade agreement, and, as against the loss chargeable to the Government, may be applied any subsidy collected by it, from the West Indies Government, as provided for in the agreement. The loss in operation on this account for 1922 was \$255,320.96, and including depreciation on the ships, \$372,989.83. This loss forms a part of the total deficit shown in the income account.

Trade Routes—No new services were established during 1922, but a number of

and continent 11; Australia, 10; Asiatic ports, 5; West Indies and Cuba, 6; Newfoundland, 0; Vancouver-California, 3; Coastwise, 1; Great Lakes grain trade (grain storage cargo), 10; Laid up, Montreal, 6; Laid up, Halifax, 3; In port, Halifax, 3; In port, St. John, 4; In port, Vancouver, 2; Total, 64.

Voyages During 1922—A total of 235 voyages were made as follows: Atlantic Services, United Kingdom and continent, 81; West Indies, freight, 29; West Indies, passenger, 18; Newfoundland, 20; Australian, 12; Mediterranean, 4; Total, 164. Pacific Services: California, 38; Australian, 15; Orient, 16; India, 2; Total, 71. Grand total, 235.

Ship Losses—No total losses were encountered during the year, and no very serious accidents occurred. As intimated in the report for 1921, the Canadian Recruit, sunk in the St. Lawrence by collision, proved to be a total loss. The company has since been paid for the loss of the vessel. Payment was received from the underwriters for the loss of the Canadian Exporter on the Pacific coast.

Insurance—Willis, Faber & Co., of London, who submitted the most favorable proposal to our tenders for renewal of insurance on the fleet, were awarded the contract for 1922, at a considerably reduced value schedule, in line with reduction in replacement values in Canada.

Recommendation—The experience in past years, leads your directors to make the following recommendations: That the fleet be kept in operation, but reduced to a total complement of 37 ships, the balance to be disposed of; and that the capital cost of the ships be reduced to what may be considered present replacement value, as recommended in our report for 1921. On account of the great value to the Canadian National Rys. of the operation of ships on recognized trade routes, your directors would be much opposed to withdrawing altogether from such services, but desire to confine operations to ships suitable for these services and capable of making an economic performance. Enquiries made in various shipbuilding centers indicate that construction cost of ships of the types which make up your fleet is now in the neighborhood of \$50 per deadweight ton, and this value would, in our opinion, constitute a fair replacement value. It would seem desirable to have further consideration given to the recommendation made in our last report that interest due the Government be payable for each year only if earned, after allowing for depreciation, such remission of interest to be applicable for five years.

With the experience of 1921 and 1922, it is difficult to be optimistic as to the future, yet present indications are that in several trades conditions are improving, and we have reason to anticipate a gradual return to better conditions in the near future. Generally, steamship people look more optimistically upon 1923 than upon the two preceding years. To certain ports trade is quite active, and the ships are doing fairly well; on other routes conditions have not improved, and it is on such routes that our losses are being sustained. The services performed by your company are being carefully scrutinized and readjustments

Dominion Marine Association.

Honorary President, A. A. Wright, President, Tidewater Shipbuilders, and Vice President and Managing Director, Davie Shipbuilding & Repairing Co., Montreal.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Montreal.

First Vice President, Hon. L. C. Webster, President, Webster Steamship Co., Montreal.

Second Vice President, G. J. Madden, George Hall Coal Co. of Canada, Ogdensburg, N.Y.

Executive Committee, The President, First and Second Vice Presidents, and W. E. Burke, Canada Steamship Lines, Montreal; Yvon Dupre, Sincennes-McNaughton Line, Montreal; M. J. Haney, Canada Steamship Lines, Toronto; A. E. Mathews, Mathews Steamship Co., Toronto; W. J. McCormack, Algoma Central Steamship Co., Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; John Waller, Keystone Transports, Montreal; Honorary members, L. L. Henderson and A. A. Wright, Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

ships were required for special charters to assist Canadian trade developments and in special trade as referred to below. Once again, in the late fall, to assist in the grain movement, and for the purpose of providing lake port storage, ten of the smaller ships of the fleet were operated on the Great Lakes where they loaded full cargoes of grain at the lake head and transported them to Georgian Bay ports, where they were tied up for winter storage.

In addition, to assist in relieving the acute fuel situation in Canada, our ships were used in transporting coal to this country from British ports; the total tonnage imported amounted to 108,139 tons. These activities prevented the management from retiring from service during the year as many ships as it was expected could be laid up when the 1921 report was being prepared. It was found possible, however, to lay up an additional 9 ships.

The disposition of the fleet, at Dec. 31, 1922, was as follows, as to trade routes and number of ships: United Kingdom

will be effected which it is felt will be beneficial in all respects.

Management—Your directors desire to take this opportunity of expressing to the officers, employes and crews, their appreciation of the loyal and efficient work performed during the year.

Expenses—Following are details of the expenses:—

Operation of ships, closed voyages.....	\$11,438,157.21
Stevedoring and wharf expenses.....	38,862.14
Operation of agencies.....	98,506.61
Interest and exchange.....	15,987.25
Management and office salaries.....	311,629.83
Rent, taxes and insurance.....	13,153.33
Travelling expenses.....	25,713.14
Printing and stationery.....	18,336.54
Advertising.....	33,015.59
Postage, cables and telegrams.....	56,641.82
Office expenses and supplies.....	27,478.13
Miscellaneous.....	12,544.55
	\$12,089,976.14

Deficit Account as at Dec. 31, 1922.

Balance as at Dec. 31, 1921.....	\$9,116,144.28
Subsidy for 1921 West Indies passenger service.....	59,090.00
	\$9,057,054.28

Deficiency on insurance recovered s.s. Canadian Recruit lost. \$ 84,751.90	
Loss for year ended Dec. 31, 1922.....	9,649,478.72
	9,734,230.62

Deficit at Dec. 31, 1922.....\$18,791,284.90

The interest due Dominion Government at Dec. 31, 1922, was \$8,670,707.13.

Ocean, Coast, Lake and River Steamship Officers for 1923.

The following appointments made by Canadian navigation companies for their steamships and tugs, have been reported to Canadian Railway and Marine World, in addition to those mentioned in previous issues. The first column gives the names of the ships, the second those of the captains and the third those of the chief engineers.

Bay Line Steamships Ltd., Montreal.

Ashbay	John Mullen	H. Johnston
Beechbay	C. H. Casselman	J. B. Anderson
Cedarbay	G. Duguay	J. Bennett
Elmbay	Jas. Cochrane	B. Lappen
Maplebay	E. Legault	G. Gruzeliar
Oakbay	C. Martin	G. Verrier
Pinebay	J. R. Montgomery	J. B. McLaren
Poplarbay	L. Marchand	H. Fugere
Sprucebay	R. Houde	L. Black
Willowbay	E. A. Laundry	A. H. Ashton

Glen Steamships Ltd., Midland, Ont.

Glenarm	A. E. Laking	W. Smith
Glendochart	D. Charland	L. Buttler
Glendowan	L. Pregent	J. Barrett
Glenleah	M. Green	J. H. Gilbert
Glenfarn	A. W. Beatty	J. A. O'Brien
Glenarnoch	M. Bouvair	J. A. McChristie

Great Lakes Transportation Co., Midland, Ont.

Glenbrae	P. Beatty	J. B. Polding
Glencairn	M. Stalker	M. Dedman
Glenclava	J. Foote	M. Manners
Glenelg		J. Gilbert
Glenfinnan	W. Taylor	J. Silverthorne
Glenisla	J. Tindall	P. Eagles
Glenlivet	P. Jewitt	R. Sinclair
Glenlyon	A. A. Hudson	E. Hurl
Glenmavis	A. McKay	J. King
Glenorchy	S. Burkes	G. Price
Glenannox	J. A. Brown	C. McWilliams
Glenstee	W. A. Leveigne	D. Sinclair
Glenstriven	B. Burke	G. D. Murphy
J. A. McKee	— McLaughlin	F. Black
Matoa	R. Burke	
T. J. Drummond	C. Scott	W. McWilliams

Montreal Harbor Commissioners, Montreal.

Aberdeen	M. Cournoyer	A. Vezina
Robert Mackay	J. Lacouture	P. Lange
St. Peter	N. Chevrier	A. Perron
Sir Hugh Allan	F. X. Lavolette	W. S. Parker
Sparrow Lake	Steamer Line, Port Stanton, Ont.	
Glympse	F. Stanton	

The National Waterways Association and the Canadian Deep Waterways and Power Association, both of which are interested in the proposals for the development of a deep waterway from the Great Lakes to the ocean, via the St. Lawrence, propose to amalgamate to prevent duplication of work.

Additional Steamships for the Great Lakes.

Canadian Railway and Marine World has, in previous issues, detailed the orders which have been given, and purchases which have been made, in Great Britain and France, for steamships for the Great Lakes by various Canadian companies. The majority of these ships have been completed, and are on their way to the lakes, and no doubt, several of them will be in service in June.

Bay Line Steamships Ltd.—The majority of the 10 steamships, bought from the French Government, details of which have been given in previous issues, were reported during May to be en route for Montreal. These, with the three bought from the Webster Steamship Co., as mentioned in our last issue, will form the company's fleet, operating between Montreal and Port Colborne and other Lake Erie ports.

Eastern Steamship Co.—It was anticipated that before the end of May, all the 10 steamships of this company's order would be launched and ready to sail for this side. Six of them were expected to arrive at Montreal before the end of the month, and the remaining four early in June. Full details of these ships, which were built by five different companies in Great Britain, together with their names, etc., have been given in previous issues. They will be operated in the grain trade between Port Colborne and Montreal, and to Erie lake ports.

Glen Line Ltd., for which application for incorporation has been made, under the Dominion Companies Act, with \$1,000,000 authorized capital, in \$100 shares, to carry on a general transportation business in all its branches, including the building and operation of ships, docks, wharves, shipbuilding yards, marine railways, grain elevators, etc., will have as its principals, James Playfair, representing the Great Lakes Transportation Co.; Jas. Richardson, representing Jas. Richardson and Sons; and James A. Paisley, representing Valley Camp Coal Co., Cleveland, Ohio. The provisional directors are, James Playfair, D. L. White, D. S. Pratt, J. W. Benson and F. W. Grant, Midland, Ont. The company is being formed to own the steamships Glenbuckie, Glencassie, Glengeldie, Glenlockie, Glenlinnie, Glenclorrie, Glenclavie, Glenorvie and Glenburnie, which will be operated under the Great Lakes Transportation Co.'s management. The first eight of these have been built by Swan, Hunter and Wigham Richardson, Wallsend-on-Tyne, Eng., and the ninth by Barclay, Curle and Co., Glasgow, Scotland. Orders were placed for nine ships, not 10 as mentioned in previous issues. They are being brought to Canada under contract by Capt. Timmouth. The s.s. Glenclorrie sailed for Montreal, April 8, but had to put into St. John's, Nfld., on account of ice. The ships, full details of which have been given in earlier issues, are of the latest type.

Great Lakes Transportation Co.—The s.s. George E. Hartnell which was bought from the Valley Camp Coal Co., Cleveland, Ohio, last autumn, and which has been remodelled by the Midland Shipbuilding Co., Midland, Ont., has been renamed Glensannox, and will be operated in the Great Lakes trade by the Great Lakes Transportation Co.

The s.s. Matoa, which was bought in Boston, Mass., last autumn was cut in two by Montreal Drydock and Ship Repairing Co. about the end of April, and the two sections were towed from Mon-

treau to the Welland Canal by Sincennes-McNaughton Line tugs whence they were towed by two lake tugs to Collingwood, where the two sections are being rejoined, with the addition of 36 ft. to the total length of the ship.

The two foregoing ships having been bought from U.S. parties, with certain restrictions imposed by the U.S. authorities as to their future operation, are apparently unable to obtain Canadian register. At the time of writing, no information is available as to what steps will, or can, be taken with regard to the matter. It is reported that they have been registered in Newfoundland.

The s.s. Glenelg, a self unloading canal sized steamship, which was launched May 12, by Midland Shipbuilding Co., for the Great Lakes Transportation Co., is expected to be ready early in June.

Keystone Transports Ltd.—The s.s. Keybar, which was launched by Smith's Dock Co., Southbank-on-Tees, Eng., recently, has been built for the Great Lakes and St. Lawrence River service to Lloyd's classification, with the following chief dimensions,—length 250 ft., breadth 42½ ft., depth 19¼ ft., with d.w. capacity of about 2,300 tons on Welland canal draft. She is equipped with triple expansion engines, with cylinders 16, 26 and 44 in. diam., by 33 in. stroke, supplied with steam by two boilers. It is said that she is practically a sister ship of the company's s.s. Keynor.

A.B. Mackay Steamship Co.—The s.s. Eugene C. Roberts, which was launched by Cammell, Laird and Co., Birkenhead, Eng., recently, is of the same type as those built for Eastern Steamship Co., two of which were built by the same firm, all the orders being placed through A. B. Mackay, formerly of Hamilton, Ont., now of London, Eng., and who, we are advised, will operate the s.s. Eugene C. Roberts in the Great Lakes and St. Lawrence River trade.

J. F. M. Stewart, Toronto.—The Welland Canal size steamship, which was ordered from Smith's Dock Co., Southbank-on-Tees, Eng., in March, was launched April 14, and named Donald Stewart, after the owner's younger son. The ship is of the single deck type, of steel, with the following dimensions,—length over all 256¾ ft., length b.p. 250 ft., breadth over steel plating 42¾ ft., depth moulded 18½ ft., with a d.w. carrying capacity of 2,300 tons on 14 ft. draft. She has a straight stem, elliptical stern, with the engine and boiler casing placed aft, and with raised forecastle, with texas on top, and navigating and wheel house above. The hull has a cellular double bottom all fore and aft, and after peak tanks. She will class 100 A1 at Lloyd's for service on the Great Lakes and St. Lawrence River and Gulf. The hull is divided into compartments by 3 watertight and 2 nonwatertight bulkheads. The propelling machinery consists of direct acting, surface condensing, triple expansion engines with 3 inverted cylinders, 16, 26 and 44 in. diam. by 33 in. stroke, supplied with steam by 2 cylindrical, multitubular boilers, each 12½ ft. diam., by 10½ ft. long, at 180 lb. working pressure, under forced draft. Accommodation is provided for the captain, navigating officers and owner, in the forecastle, and for the engineers, stewards, etc., in the deck-house aft. For handling cargo, there are a double cylinder windlass and 2 double cylinder, 7 and 10 in. steam winches.

Atlantic and Pacific Oceans.

The Eastern Steamship Co. resumed its service between St. John, N.B., and Boston, Mass., May 21, with the sailing of the s.s. Governor Dingley, from St. John.

The Anchor-Donaldson Line's s.s. Athenia arrived at Halifax, N.S., May 2, on her maiden voyage. It was intended that she should go direct to Montreal, but owing to ice in the Gulf of St. Lawrence, she was diverted to Halifax. She sailed from Glasgow, April 19, and from Liverpool, April 20, and carried 240 cabin, and 1,126 third class passengers.

The Cairn-Thomson Line's s.s. Cairndhu, which underwent extensive repairs by Davie Shipbuilding & Repairing Co., Lauzon, Que., during the winter, after grounding in the St. Lawrence, near the Quebec Bridge, last autumn, was undocked April 27. In proceeding to her moorings at shed 26, Quebec, after having had her compasses adjusted, she collided with the wharf, damaging her bows. It was stated that she would probably have to be drydocked again, to have the damage repaired.

The Anglo-Newfoundland Development Co. has ordered a specially designed steamship from Vickers Ltd., Barrow-in-Furness, England, for delivery in 1924, for its paper shipping trade. The design is somewhat out of the ordinary, as she will be specially built to withstand heavy winter weather on the north Atlantic, her stem being so constructed as to contend with heavy ice. Accommodation for the crew will compare favorably with that usually found on Atlantic passenger ships. She will be about 400 ft. long, 13,000 tons displacement, with capacity for about 5,000 tons of news print in reels. She will have a sea speed of about 11 knots an hour. She will be operated between Newfoundland and London, and Manchester, Eng.

Maritime Provinces and Newfoundland.

The name of the s.s. Edith C., owned by P. J. Walker, Port Hawkesbury, N.S., has been changed to Edith C. Walker.

The Marine Department has announced that 4 lighthouses along the St. John River, were destroyed during floods at the end of April and early in May, at Fanjoy Point, Palmers Point, Lower Jemseg and Belyea's Point.

The s.s. Cymric Queen, owned formerly by Anglo-Belgique Shipping Co., Cardiff, Wales, arrived at Sydney, N.S., at the end of April, to go into the Dominion Coal Co's service. She was built at West Hartlepool, Eng., in 1912, and is of steel, screw driven by engine of 350 h.p., and has the following dimensions: length 350 ft., breadth 51.1 ft., depth 23.9 ft.; tonnage, 3,847 gross, 2,421 net. She was formerly named Apsleyhall and Newfield.

Province of Quebec.

The Montreal Harbor Commissioners entertained a British Columbia Board of Trade delegation, May 10. A tour of the harbor was made on the Commissioners' s.s. Sir Hugh Allan. J. E. Dalrymple, Vice President of Traffic, Canadian National Rys. accompanied the party, which was taken through the C.N.R. Montreal shops.

The 1923 season of St. Lawrence navigation from the ocean to Montreal, was

opened by the C.P.R. s.s. Bolingbroke, which arrived there, May 3. The Montreal Harbor Commissioners presented the master with a gold headed cane. The Cairn-Thomson Line s.s. Cairnvalona was ahead of the Bolingbroke in the river, but remained at Quebec to unload cargo.

Canada Steamship Lines Ltd. is building a shed and office at Dalhousie St., Quebec, which are expected to be ready for occupation early in June. This will increase the floor space by about 6,000 sq. ft., which is made necessary by increased business. The building is of brick, with concrete foundation, 2 stories high. The upper floor will be occupied by the freight staff, and the lower floors arranged for the handling of freight, and for the disembarkation of passengers. The cost of the building will be about \$20,000.

The first steamship to arrive in Montreal harbor, this season, from an outside point, apart from the icebreaking s.s. Lady Grey, was the Kirkwood Line's s.s. Greypoint, which left Quebec, April 28, and arrived at Montreal, April 30, about four hours after the icebreaker. She was also the last steamship to leave Montreal, last autumn, before the close of navigation, and to reach her destination, for though the s.s. John S. Thom left Montreal after the Greypoint, she was frozen up near Sorel, and had to remain in the ice all the winter.

The Dominion Labor Department has granted the application for a board of conciliation to investigate a wage dispute between steamship checkers and certain shipping companies at Montreal. The application was made by the steamship checkers' division of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employes, and arises from the men's demand for 50c an hour for day work, and 60c an hour for night work, or 10c an hour higher than is offered by the companies. The men nominated J. G. O'Donahue as their representative.

The C.P.R. has adopted a novel method of handling passengers' baggage arriving by its steamships at Quebec, between the ships and the baggage department in the immigration building. A number of trailer cars are placed alongside the ship, and the baggage loaded on them, and as they are loaded they are collected by a motor car and taken to the baggage department for examination, after which the baggage is loaded on the trains. By this means the time taken in handling the baggage is reduced by half. The motor car is driven by electricity, and has 42 storage batteries, enabling it to run for 12 hours without recharging. When the motorman rises from his seat, it is raised automatically, current shut off, brakes applied and the car brought to a stop. The car weighs 5,200 lb., and cost about \$5,000.

Ontario and the Great Lakes.

Canal navigation between Montreal and Cornwall was opened May 3, by the Montreal & Cornwall Navigation Co's s.s. Britannic.

The Northern Navigation Co. commenced its season's traffic, May 12, with the sailing of the s.s. Huronic from Sarnia, the early summer schedule being a sailing every Tuesday and Saturday.

Canada Steamship Lines' steamships Maplebrook and Sarnian collided near Whitefish Point, Lake Superior, about May 11. The former ship, which has a wooden hull, is stated to have been considerably damaged.

The Toronto Harbor Commissioners have had the names of their steam tugs Emily Stewart, Mary Stewart, Viper, John E. Russell and Handy Boy, changed to Toronto Harbor Commissioners Nos. 1, 2, 3, 4 and 5, respectively.

The Union Transit Co's s.s. Wahcondah touched bottom in the St. Lawrence River, May 18, when down bound from Port Colborne to Montreal, with grain. After being lightered at Prescott, the damage, which was slight, was repaired and she proceeded to Montreal.

The U.S. War Department has notified shipping interests that the St. Mary Falls Canal locks will be closed to shipping for the season, on Dec. 14, each year, at 6 p.m. eastern standard time. Final trips each year must be timed so that ships will reach the locks prior to the limiting date and hour specified.

The Deputy Harbor Master, Toronto, has reported that soundings taken recently at the eastern entrance to the harbor, show that a sand bar formed during the winter, with a least depth of 12 ft. thereon. Ships drawing more than 12 ft. must, therefore, use the western entrance until the sand bar has been removed, of which notice will be given in the ordinary way.

The s.s. George E. Hartnell, which was bought by the Midland Shipbuilding Co., Midland, last autumn, and which has been completely remodelled and refitted, has had her name changed to Glensannox. She has been transferred to the Great Lakes Transportation Co., and will be operated in the Great Lakes trade.

The laying of submarine cables across the western entrance to Toronto harbor is under way. In the event of masters having to use the western channel, they must proceed with caution, while passing between the piers, and should take warning of any signals that might be given them by those in charge of the work, as to what direction they should take while passing the construction plant during the progress of the work.

The United States Lake Survey reports the stages of the Great Lakes, in feet above the mean sea level, for April, as follows,—Superior 601.39; Michigan and Huron 579.18; St. Clair 574.14; Erie 571.31; Ontario 245.33. Compared with the average April stages for the last 10 years, Superior was 0.43 ft. below; Michigan and Huron 1.25 ft. below; Erie 1.17 ft. below; and Ontario 1.06 ft. below.

Judgment was given, May 10, by the Exchequer Court of Canada, Toronto Admiralty District, at Port Arthur, in the claim of Canada Steamship Lines Ltd., against the Henderson Transfer Co's s.s. Robert L. Fryer, for damage sustained by the s.s. Westmount in a collision at the Davidson and Smith elevator slip at Port Arthur, in Nov. 1922. The Robert L. Fryer was condemned to pay half the damages, still to be assessed, and half the costs of the action, the balance to be borne by Canada Steamship Lines.

The actual reopening of the grain shipping season at the head of the Great Lakes, took place, May 5, when 2,600,000 bush. were loaded out, which is stated to have exceeded the previous record by about 500,000 bush. The Great Lakes Transportation Co's s.s. Glenisla was the first ship to enter the harbor, and Capt. Jas. Tindall was presented with the local board of trade silk hat. The same company's s.s. Glenshee opened navigation at Port Arthur, and Capt. W. A. Levisne also received a silk hat from the Port

Arthur Chamber of Commerce.

The Thunder Bay Paper Co., Port Arthur, is reported to have bought the steam tug Butterfield, in New York, and she was expected to arrive at Port Green Bay, Wis., before the end of May, to work there till about July 15, and then to be taken to Port Arthur. She is stated to be the largest and most powerful tug of her type on the Great Lakes, being 150 ft. long, and equipped with engines of 1,000 h.p. It is not stated whether she is to be transferred to the Canadian register, or not, but on account of the restrictions imposed on the transfer of United States ships to outside registers, her United States registry will presumably be maintained.

A. J. Grant, Chief Engineer, Welland Ship Canal, is reported to have stated that a change of route has been decided on, for the construction of the Welland Ship Canal, between Rameys Bend and Port Colborne, passing through Humberstone village. The change, which has been made by the Railways and Canals Department's engineers, will it is said, allow navigation on the present canal to be uninterrupted during the construction of the Port Colborne end of the ship canal, and there will be a saving in the cost of construction. It is stated that specifications for the construction of the remaining sections are in course of preparation, and that tenders will be invited shortly for the work on sections 8 and 9.

The claim of the Northern Navigation Co. against the Henderson Transfer Co's s.s. Robert L. Fryer for \$5,000 for damage sustained by the s.s. Hamonic, when the two ships collided in the Kaministiquia River in Sept. 1922, was dismissed by the Exchequer Court of Canada, Toronto Admiralty Division, at Port Arthur, May 12, and the counter-claim was withdrawn. Mr. Justice Hodgins, in giving judgment, stated that he took into consideration the age and disability of the s.s. Robert L. Fryer, as compared with the s.s. Hamonic which had, by her more modern equipment and greater power, better facilities to enable her to keep clear of the Robert L. Fryer. Both ships had disregarded certain rules of the road, neither having signalled the other its intention when sighting, and this had, to a certain extent, contributed to the accident.

The following changes in aids to navigation in Ecorse channel, Detroit River, have been made: Ecorse buoy 1, a third class spar, in place of Ecorse float light 1; Ecorse channel buoy 2, red, cylindrical, with skeleton superstructure, showing a flashing red light every 2 secs., 10 c.p., 12 ft. above water, established 240 yds. 240 deg. from position of Ecorse float light 2 discontinued; Ecorse channel gas buoy 3, black, cylindrical, with skeleton superstructure, showing a flashing white light every 2 secs., 30 c.p., 12 ft. above water, in place of Ecorse float light 3; Mud Island shoal north buoy, a third class spar painted red and black in horizontal bands, in place of Mud Island shoal north float light. In the West Neebish channel, St. Mary River, the east side upper gas buoy 14A, cylindrical, with skeleton superstructure, showing a flashing red light every 3 secs., 20 c.p., 10 ft. above water, has been established in place of the east side float light 16. In the Livingstone channel, Detroit River, the buoy 17 and the gas buoy 17A have been moved 50 yds. westward to the new channel bank, the widening of the channel having been completed.

Manitoba, Saskatchewan, Alberta and Northwest Territories.

The Hudson's Bay Co's steamboat Athabasca River, was launched at McMurray, Alta., May 2. She has accommodation for 58 passengers, and is equipped with electric light, steam steering gear, and propelling machinery designed for a speed of 15 miles an hour.

The Northern Trading Co's s.s. Northland Echo was launched at McMurray, Alta., May 10. Her dimensions are,—length 135 ft., breadth 24 ft. She has passenger accommodation for 70, with freight accommodation, in conjunction with her barge, of 125 tons. She is in charge of Capt. Harry Alexander as master, and D. Mackenzie as chief engineer, and sailed from McMurray, May 16, on her first trip to Fitzgerald.

During the break up of ice and the consequent floods in the Red River, the steam tug Phyllis Williams, the s.s. City of Selkirk, and two barges broke from their moorings at Selkirk, Man., towards the end of April. They were located later by the steam tug Rocket, the City of Selkirk being reported as sunk in the river, the Phyllis Williams as icebound in the old east channel running into Lake Winnipeg, one barge in Netley Creek and the other in the old east channel.

The s.s. Keenora, owned formerly by J. F. Waller, Winnipeg, has been bought by a syndicate, consisting of W. J. Guest Fish Co., Winnipeg, and the Northern Fish Co., Selkirk, Man., and is being refitted for passenger traffic on Lake Winnipeg, between Selkirk and Warrens Landing, under the Northern Fish Co's management. She will have stateroom accommodation, promenade deck, music room, etc., and is expected to be ready for operation about the end of June, after which she will make weekly trips around Lake Winnipeg, calling at Gull Harbor, Bull Head, Beren's River, Grand Rapids and Warrens Landing, where arrangements can be made for a return trip from there to Norway House. These trips will be in addition to the usual semi-weekly service by the Northern Fish Co's s.s. Wolverine.

British Columbia and Pacific Coast.

The Vancouver City Council, at a recent meeting, decided to have a bylaw prepared providing \$150,000 for a fireboat for the harbor.

The Vancouver Harbor Commission has awarded a contract for the construction of an addition to the elevator at Vancouver, to Pacific Construction Co. The addition will increase the elevator's capacity by 808,000 bush.

The Vancouver Harbor Commission has established 5 pile beacons, 4 on the port side and one on the starboard side, to mark the turn in the channel opposite the C.P.R. shops in False Creek. The beacons are about 50 ft. back from the edge of the channel.

The Dominion Public Works Department has dredged a cut through the sand bar by Forrest Glen, Arrow Lakes, about 2½ miles south of West Demars wharf, to a depth of 8 ft. at low water. The north end of the dredged cut is 140 ft. and the south end 190 ft. wide.

The Pacific Salvage Co's s.s. Algerine, which was sent to the relief of the Alaska Steamship Co's s.s. Lake Gebhart, which ran aground on the Umatilla Reef, off the Washington coast, May 10, re-

ported that she was breaking up, with the bottom all gone, and no hope of salvaging her.

The Consolidated Whaling Corporation commenced operations for the season, early in May, when the whole fleet was sent out. The company operates a whale meat packing plant at Kyuquot, and cold storage plant at Naden Harbor, for packing and chilling for export.

Preparations were under way early in May for the reopening of navigation on the Yukon and adjacent rivers. It was stated that about 9,000 tons of silver ore, valued at \$250,000, was awaiting shipment at Mayo. At Dawson, four steamboats and a number of barges were being overhauled and things generally got in readiness for the traffic.

The Hudson's Bay Co's auxiliary powered schooner Lady Kindersley is expected to sail from Vancouver, early in June, for the Arctic, calling at Point Barrow, Baillie Island and Coronation Gulf, and will carry cargo for ports along the Arctic Coast, to the Mackenzie River. The s.s. Baychimo is announced to sail from Vancouver shortly, for Siberia and Kamchatka.

The British Columbia Cement Co's s.s. Matsqui, bound from Victoria to Bamberston, ran aground at Darcy Island, Gulf of Georgia, May 12. The Pacific Salvage Co's s.s. Algerine was dispatched to the wreck and found the ship on an isolated rock, 6 ft. clear of the water, with a hole in the port bilge, and her hold full of water. She was released and taken to Victoria for examination and repairs.

The steam tug Czar, owned formerly by Pacific Construction Co., Vancouver, and which has been purchased by Greer and Christie, for operation by the Czar Towing Co., incorporated recently, was built at Victoria in 1897, and was screw driven by 56 h.p. Her dimensions are,—length 101 ft., breadth 21.5 ft., depth 11 ft., tonnage 152 gross, 93 net. During May she was equipped with a heavy oil, internal combustion engine of 350 h.p., with fuel capacity for 50 days, and is expected to be ready for operation early in June.

The masters of the steam tugs Prosperative, Qualicum, Sea Swell, Lornett and Commodore, were charged at Vancouver police court, recently, with breaches of the harbor bylaws, in entering the Narrows with their tows at a lesser distance than a quarter of a mile from each other, when it was stated considerable difficulty occurred, during which the C.P.R. s.s. Princess Victoria was almost stranded. For the defence it was claimed that the waters, being outside the city limits, were not under the magistrate's jurisdiction, and that the bylaw was unreasonable and unworkable, and owing to tides, back eddies and currents, it was impossible to live up to its provisions, as tugs could not keep their tows back without extreme danger to themselves. Four of the masters were fined \$10 each, the charge against the fifth being withdrawn.

The Union Steamship Co. of British Columbia's s.s. Cardena, which has been built by Napier Miller and Co., Glasgow, Scotland, sailed from Glasgow, May 3, for Vancouver, via the Panama Canal, and is expected to arrive on the British Columbia coast about June 12, when she will be placed in service on the northern route, calling at Prince Rupert, Anyox and Stewart. She is a combined cargo and passenger steamship, of the sheltered deck type, with accommodation for passengers on the shelter deck and with the

machinery placed amidships. She is propelled by a single screw and equipped with Babcock and Wilcox boilers, with machinery designed for a speed of 14 knots. Her dimensions are,—length 220 ft., breadth 4 ft., depth 21 ft., tonnage 1,573.03 gross, 908.12 net. It is reported that the company is considering the provision of an additional steamship, for the Howe Sound service, in the near future.

The Minister of Marine stated in the House of Commons, recently, that the London Guarantee & Accident Co., Toronto, was pledged for \$321,000 in connection with the contract to build two ships on the Pacific coast; that no portion of the guarantee had been paid by the bonding company, and that action was taken some time ago by the Justice Department, on behalf of the Marine Department, to recover the full amount of the guarantee. Pleadings had been made and the case was awaiting trial. These ships were to be built by Victoria (B.C.) Shipowners Ltd., and one of them, Simon F. Tolmie, was subsequently completed by the Government and is now in operation by the Canadian Government Merchant Marine.

The First St. Lawrence Pilot Honored.—The memorial erected at Quebec by the C.P.R. and Canadian Pacific Steamships Ltd., in memory of Abraham Martin, was unveiled May 12. It is on a site given by the Quebec Harbor Commission, near the C.P.R. sheds. Abraham Martin, who came to Canada in the early part of the 17th century, was the son of a Scotch father and French mother, and his name was included in a list of 31 French persons living in Canada between 1629 and 1632. He was described as a pilot, fisherman and farmer, and owned the land, since known as the Plains of Abraham, and which, about 100 years after his death, was the scene of the final battle which settled Canada's destiny.

The Muskoka Lakes Navigation and Hotel Co's annual meeting was held in Toronto, May 18, when it was reported that 6 per cent. dividend had been paid on 1922 operations, and that pay of captains and mates was being increased, and that a pension fund was being established. Officers and other directors were elected as follows:—Hugh C. MacLean, President; G. T. Somers, Vice President; F. F. Brentnall, A. MacLean MacDonnell, Andrew D. MacLean, Lt. Col. R. S. Wilson.

Sunrise Steamship Co. Ltd. has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital, and office at Montreal, to own and operate ships, and to transport passengers and merchandise on rivers, lakes and other waters. The incorporators are: B. Robinson, M. Garber, A. S. Cohen, L. A. Sperber and J. P. Beaupre, Montreal.

Captain A. Blouin of the Canadian Government Merchant Marine steamship Canadian Sapper, writes:—"I enclose my subscription for 1923 with great pleasure, for it would be hard indeed for me to be without Canadian Railway and Marine World, which contains so much interesting matter, especially for a mariner."

British Columbia Pilotage Association Ltd., an extra provincial company, has been registered under the British Columbia Companies Act, with office at 837 Hasting St. West, Vancouver. The company has an authorized capital of \$5,000, of which \$2,500 is paid up.

Canadian Government Merchant Marine Operations, Etc.

Appointments.—Albert Davidson was mentioned in Canadian Railway and Marine World for April as reported to have been appointed Assistant Freight Agent, C.G.M.M. at Vancouver. We are advised that he has been appointed Assistant General Freight Agent, C.G.M.M. and Grand Trunk Pacific Coast Steamship Co.

C. H. Ireland, who was secretary to the late Hon. W. C. Kennedy, Minister of Railways and Canals, has been appointed assistant to General Manager, C. G. M. M., Montreal.

Officers of Steamships.—The following captains have been appointed since those mentioned in our last issue.—Canadian Adventurer, Peter Shaw; Canadian Beaver, J. Slater, vice J. F. Smeltzer, transferred; Canadian Engineer, Wm. Carson; Canadian Harvester, A. E. LeBlanc, vice W. B. Armit; Canadian Importer, E. Randell, vice J. McConachy; Canadian Pathfinder, R. D. Simpson; Canadian Runner, J. F. Smeltzer, heretofore on Canadian Beaver, vice J. H. Miller; Canadian Sailor, J. Mann; Canadian Skirmisher, W. H. Miller, vice H. S. Hilton; Canadian Sower, C. Dineen; Canadian Trader, J. Williams; Canadian Volunteer, J. Edgecome, vice D. McKenzie; Sheba, D. M. Dickson, heretofore on Canadian Voyageur, vice A. E. Seamen. The following chief engineers have been appointed.—Canadian Carrier, W. Geddie; Canadian Harvester, W. Fotheringham; Canadian Mariner, F. Todd; Canadian Squatter, R. C. Prydie.

The s.s. Canadian Sapper, in charge of Capt. A. C. Blouin, was the first cargo steamship to enter the port of Sydney, N.S., for the 1923 navigation season.

Ships for Sale.—The Minister of Marine gave the following information in the House of Commons recently, in answer to questions by T. L. Church, Toronto North: As proposed by the late board of directors, and recommended by the present management, authority has been taken to sell 27 of the smaller Canadian Government merchant ships by public tender, if satisfactory offers can be obtained, but otherwise by private sale. They are being sold because they are too deep in draft, and of a wrong type, for service through the St. Lawrence Canals, but would be serviceable for the upper lakes, where some are already being made use of. The C.G.M.M. management maintains that it was never a party to a combine, though its representative has sat in at the weekly session of the North Atlantic Conference, for the stabilization of freight rates, and the ensuring of equality to all shippers.

Montreal Sailings.

London & Antwerp service.—Canadian Planter, June 6; Canadian Conqueror, June 20; Canadian Victor, July 4.

Cardiff & Swansea service.—Canadian Explorer, June 1; Canadian Leader, June 15; Canadian Challenger, June 29.

New Zealand & Australia service.—Canadian Cruiser, June 26; Canadian Constructor, July 28.

St. Kitts, Antigua, Barbados, Trinidad & Demerara service.—Canadian Runner, June 13; Canadian Squatter, June 27.

Hamilton, Nassau, Kingston, Belize, Bermuda, Bahamas, Jamaica, & British Honduras service.—Canadian Forester, June 14; Canadian Fisher, July 5.

St. John's, Nfld., via Charlottetown, P.E.I.—Canadian Sapper, June 21, July 12.

Mainly About Marine People.

Edward Charles Boland, who has been appointed Division Freight Agent, Canada Steamship Lines Ltd., Toronto, was born there, Aug. 8, 1872, and entered transportation service, June 15, 1888, since when he has been, to Apr. 1, 1907, rate clerk, and chief billing clerk, G.T.R.; Apr. 1, 1907 to Sept. 1912, City Freight Agent, Canadian Lake Line; Sept. 1912 to Sept. 1917, Soliciting Freight Agent, Canada Steamship Lines; Sept. 1917 to March 1923, City Freight Agent, same company, all at Toronto.

E. L. Cousins, Consulting Engineer, Toronto Harbor Commission, has also been appointed one of about 20 consulting engineers for the port of New York, in connection with its port development project, the estimated cost of which will be between \$50,000,000 and \$75,000,000.

N. Fahey, heretofore chief clerk, Export and Import Freight Department, Canada Steamship Lines, Toronto, has been appointed Solicitor, Export and Import Freight Department, Toronto.

Capt. J. B. Henry, formerly with the Allan Line Steamship Co., and Canadian Pacific Ocean Services Ltd., died suddenly at Halifax, N.S., May 15, aged 65, where he was supervising the outfitting of the s.s. Petrel, for a Labrador expedition. He had been in Atlantic Ocean service for several years, and at different times had been master of the steamships Sardinian, Scotian, Corsican and Ionian for the Allan Line, and of the s.s. Melita for Canadian Pacific Ocean Services Ltd. During the war, he was in charge of the s.s. Ionian, which was used as a troopship to the Dardanelles. Latterly he acted as nautical assessor in several investigations into marine casualties.

C. E. Hunt, heretofore chief clerk, Freight Department, Canada Steamship Lines, Ltd., Toronto, has been appointed Solicitor, Freight Department, Toronto.

Alex. McDougall, shipbuilder, etc., who died at Duluth, Minn., aged 70, following an operation, was the first builder of the whaleback type of Great Lakes freight steamships, and was at one time interested in Collingwood Shipbuilding Co., Collingwood, Ont.

J. F. Paige, Operating Manager, Halifax Shipyards Ltd., addressed the Commercial Club there, recently on the progress of shipbuilding during the past 100 years.

P. J. Peer, heretofore City Passenger Agent, Canada Steamship Lines, Ltd., Hamilton, Ont., has been appointed District Passenger Agent, there.

Sir Henry W. Thornton, President, Canadian National Rys. has been elected a director of Canada Steamship Lines, Ltd., to fill a vacancy which has existed for some time.

Labor Organization Steamships.—A New York press report states, that the Marine Engineers Beneficial Association has offered to buy three 12,000 ton ships from the U.S. Shipping Board, for \$300,000 cash, which it proposes to use as the nucleus of a labor owned and labor operated steamship fleet.

National Shipping & Forwarding Co. Ltd. has been incorporated under the New Brunswick Companies Act, with \$10,000 authorized capital, and office at St. John, N.B., to own and operate ships for transportation of ocean and inland traffic. Among the incorporators are: F. L. Forward, R. A. Davidson, St. John, N.B., and J. Durand, Montreal.

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

Canadian Vickers, Ltd., Montreal.—The Minister of Trade and Commerce stated in the House of Commons recently, in answer to questions by J. S. Woodsworth, Winnipeg Center, that the Government has no investment in Canadian Vickers, Ltd., plant. An annual subsidy of \$150,000 is paid the company, by agreement, under authority of the Drydock Subsidies Act.

Collingwood Shipbuilding Co., Collingwood, Ont.—The steamship, yard no. 72, which the company has built on its own account, was launched April 30, and christened Dalrymple, by Miss Helen Dalrymple, daughter of John Dalrymple, Superintendent of the plant. The ship is of the latest design of canal size freight steamships, and built under British Corporation classification and supervision. The captain and officers' accommodation is decorated in oak, and is placed in the fore end of the ship, the accommodation for the chief engineer, engine room staff and firemen being in the deckhouse aft, where the dining room, galley and pantry are also located. Her dimensions are, length over all 259 ft. 7 in., length b.p. 252 ft., breadth 43 ft., depth moulded 19 ft. She has 3 large cargo holds and 7 hatches, with capacity for about 90,000 bush. of wheat. The propelling machinery consists of triple expansion engines with cylinders 15½, 26 and 44 in. diam., by 26 in. stroke, supplied with steam by a single Scotch marine boiler 14 ft. diam. by 10¼ ft. long, at 195 lb. working pressure under forced draft. When launched she was fully equipped and with steam up ready for sailing.

Collingwood Shipbuilding Co., Kingston, Ont., did the following repair work to various steamships, during the past winter: City of Ottawa, repairs to port side damage; Edmonton, repairs to starboard and port side and starboard bow damage, new cargo door, repairs to fairleads; Maplebranch, repairs to wheel; Mapleheath, repairs to bulwark and bow damage, stanchions, rails and ventilators; Maplehill, repairs to hold ladders and hatch coamings; Vinmount, repairs to port side damage, for Canada Steamship Lines; Nevada, repairs to port bow and side damage and repairs to frames and boilers, for Dominion Coal Co.; Trevisa, repairs to boiler, fender and electrical work, for Export Steamships Ltd.; Aube, repairs to margin bar, for Aube Steamship Co.; Keybell, repairs to boilers, fenders and electrical work; Keynor, repairs to bulwark damage, boilers, fenders and electrical work; Keyport, repairs to bottom and boat deck damage, wheel and shaft, boilers, fenders and electrical work; Keyvive, repairs to bulwark damage, boilers, fenders and electrical work; Keywest, fitting new spar, repairs to boilers and fenders, for Keystone Transports Ltd.; Malton, wheel and repairs to bottom damage, for Mathews Steamship Co.; Wolfe Islander, repairs to bottom damage, for Wolfe Island Tp., Ont.; car ferries Ontario No. 1 and Ontario No. 2, temporary repairs made at Cobourg, following a collision between the two ships in March, for Ontario Car Ferry Co., (Canadian National Rys.). Ontario No. 1 was docked later at Kingston, for permanent repairs, consisting of new shaft and hub, new hawse pipe, windlass parts and repairs, and repairs to bottom and fenders, as well as some machinery and piping repairs.

Ernst Shipbuilding Co., Mahone Bay,

N.S. launched the schooner Nina M. Conrad towards the end of April. Her dimensions are, length over all 133 ft., beam 26½ ft., depth of hold 11 ft. She has been designed for fishing and coasting service. She was launched complete, with the exception of rigging, and later left for Lunenburg for supplies.

Halifax Shipyards Ltd., Halifax, N.S. did the following repair work during April,—Dominion Coal Co's s.s. Dagbild, docked for survey and repairing ice damage to hull, which included 3 plates renewed, 14 plates off, faired and replaced, tail shaft drawn for examination, hull scraped and painted, undocked Apr. 13. Canadian Government Merchant Marine s.s. Canadian Miller, miscellaneous hull repairs, scraping and painting, opening up sea connections for examination, rudder repairs, undocked Apr. 15; C.G. M.M. s.s. Canadian Challenger, scraping and painting, 6 zinc plates renewed, opening up sea connections for examination, and miscellaneous hull repairs, undocked Apr. 18; Dominion Coal Co's s.s. Kamouraska, hull repairs due to ice damage, including 3 plates renewed, 6 plates off, faired and replaced, 5 plates faired in place, 6 new chafing strips, rivetting, scraping and painting, undocked Apr. 28; Dominion Coal Co's s.s. Hochelaga, docked for extensive repairs due to grounding, about 31 plates to be treated, which work was carried out during May.

Northern Boat Building Co., Edmonton, Alta.—Three auxiliary powered schooners named Henry Ford, Mayflower and Bluenose, built specially for the Eskimo trading service in the Mackenzie River delta, were dispatched from Edmonton, at the end of April and early in May, for Waterways, where they were to load general cargo for ports along the route. They were towed to Waterways by Northern Trading Co's vessels, and it was intended that from Waterways north, they would proceed under their own power.

Prince Rupert Dry Deck and Shipyard, Prince Rupert, B.C., did the following repair work during April,—Canadian Government Merchant Marine s.s. Canadian Observer, 2,410 tons, docked, painted and generally overhauled; Canadian Government snagboat Bobolink, generally overhauled and extensive hull repairs; Grand Trunk Pacific Coast Steamship Co's steamships Prince George, 3,372 tons, and Prince John, 905 tons, completion of annual overhaul, and G.T.P. car ferry barge, extensive repairs due to grounding; also general repairs to 24 halibut fishing ships.

Union Shipbuilding Co., Port Union, Nfld. has launched 2 fishing schooners, each 70 ft. long, one of which has been bought by Thos. Hynes, St. Brendans, Bonavista Bay, Nfld. A similar schooner, of about 60 tons, has been laid down, and also an auxiliary powered schooner of about 110 tons, the latter of special construction for seal fishing in the spring, and for general coasting purposes in the summer. This ship will, probably, be equipped with a Bolinder oil engine of 100 h.p. Hon. W. F. Coaker, Minister of Marine and Fisheries, is General Manager. H. A. Russell is Assistant Manager and Jas. Jones is master builder at the plant.

Yarrows Ltd., Victoria, B.C. did the following repair work during April,—Canadian Government Merchant Marine s.s. Canadian Volunteer, 3,188 tons, dry-docked, cleaned and painted, tail shaft drawn, spare propeller fitted, sea con-

nections overhauled and since renewed; C.P.R. s.s. Princess Victoria, 1,943 tons, repairs to engine room ventilators and general repairs; Coastwise Steamship and Barge Co. s.s. Griffco, 1,519 tons, docked on marine railway, surveyed and extensive repairs made to underwater plating due to stranding; Admiral Line s.s. President Madison, 14,187 tons, repairs to main condenser. In addition to the foregoing repair work, the completion of the C.P.R. motor car ferry Motor Princess was rushed so that she might be ready for operation by May 15.

Wreck of the C.P.R. Steamship Marvale.

The Canadian Pacific Steamships Ltd. s.s. Marvale, formerly the Allan Line s.s. Corsican, which sailed from Montreal, May 18, with 436 passengers and crew, for Liverpool, struck a reef off Cape Freels, Nfld., May 21, and sank in seven fathoms of water, while an attempt was being made to beach her. A dense fog prevailed, but, with a calm sea, the whole of the passengers and crew were transferred to the boats without accident, and landed safely at St. Shotts. At the time of writing (May 23), the reports as to the subsequent happenings are very meager but it apparently was the intention to divert the company's s.s. Empress of Britain, which was in the vicinity, and to return the passengers to Canada, but as they preferred to proceed to England, this was not done. The Newfoundland steamships Seal, Mary, Cabot and Susu were dispatched immediately from St. John's to St. Shotts, and the passengers and crew were taken round to Trepassy Bay, a short distance to the east, then travelling by special train from Trepaty, the terminus of the Reid Newfoundland Co's Trepassy Branch railway to Waterford Bridge, the junction with the company's main transinsular line, and thence to St. John's, a total distance of 106.63 miles, to await the arrival of the company's s.s. Melita, which sailed from Montreal, May 23.

The s.s. Marvale was built at Glasgow, Scotland, in 1907, for the Allan Line, and was originally named Corsican. Her dimensions were,—length 500.3 ft., breadth 61.2 ft., depth 38 ft.; tonnage, 11,438 gross, 7,121 net, and she was screw driven by engines of 1,440 h.p. She had passenger accommodation for about 400 cabin, and 850 third class passengers, and was in charge of Capt. H. Lewis, one of the best known captains in the C.P.R. steamship service, with which he has been connected since its inception. The latest press reports state that only the Marvale's boat deck is above the water and that her refloating will probably be attempted. Cape Freels is on the south coast of Newfoundland, one mile westward of Cape Pine, and is low lying, with the Cape Pine light seen over it, which is not obscured by the intervening land until on a 105 deg. true bearing. A fog signal is given from a small white wooden house, 94 ft. above high water, erected on Cape Freels. Henry rock and Freels rock are 2-1/10 miles southward, and 3 miles southwestward, respectively from Cape Pine light, the former with 8 fathoms of water, and the later with 3 fathoms, and there is a clear channel, with 9 to 12 fathoms of water, between Freels rock and the cape. St. Shotts cove is west-northwest

about 3 miles from Cape Pine, and is quite open, with a few families residing on the eastern shore. Many shipwrecks have occurred in the vicinity, principally on the eastern head, from which a ledge of slate rocks extends southwestward

for one cable. In most cases these wrecks have occurred during foggy weather from neglect to use the lead, and want of attention to the currents. There is a Marconi wireless telegraph, signal station and direction finding sta-

tion at Cape Race, which is approximately 25 nautical miles east of Cape Pine. The point where the Marvale was wrecked should not be confused with another Cape Freels, one of the outer points of Bonavista Bay.

Dominion Marine Association's Annual Meeting.

The Dominion Marine Association's annual meeting was held at Montreal, May 9, the President, T. R. Enderby, in the chair. The executive committee's report for 1922, prepared by the Counsel, Francis King, K.C., and approved by the executive committee, was submitted. The introduction stated, in part, as follows:—The year presented peculiar features in many respects. The financial stringency following war expenditures has for some time prevented the undertaking of any new public works of importance, and, with the exception of the new Welland Ship Canal, no navigation work of any serious cost has been permitted to draw upon the public resources; but the year just past presents a new phase of this situation in the fact that no meeting of the Lighthouse Board of Canada has taken place, for the reason, it is understood, that no funds have been available for new work. The exigencies of the financial situation have had their influence upon the Association's affairs all along the line, and while aids are withheld, at the same time the Government appears to have lost no opportunity to reimpose taxes, and has at least lent no willing ear to plead for the removal of burdens of this kind. But while the field for the Association's activity has been to some extent restricted and its successes somewhat reduced by the causes mentioned, its members have found more than enough to do in the effort to cope with the difficulties arising in one special line of trade, the transportation of grain, perhaps the most important to the Canadian carrier; difficulties vastly exaggerated by the inadequacy of port transshipment and storage facilities for an exceptionally large western crop. Congestion of terminals was a cause of delay to ships and a source of worry to their owners since early in the season, and much thought was given and effort expended by the committee to bring about some alleviation of the trouble, notably at the port of Montreal. At the same time, and as if the congestion of Canadian terminals was not bad enough efforts were renewed throughout the season to break down the coasting laws of Canada and allow U.S. tonnage to add to the trouble. These efforts were consistently fought by the committee, and successfully until the very end of the season, when the Government gave way to the argument pressed upon it that winter storage space must be provided.

The report then dealt fully with legislation enacted, including pilotage, public harbors and harbor masters, Canadian Wheat Board, Admiralty Act, and revision of the Canada Shipping Act, as well as with the following subjects:—The coasting laws; grain movement, season 1922, Canadian and U.S. crops; grain shoveling charges; pilotage dues in the St. Lawrence below Montreal; immigration laws, forms and fees; steamship inspection fees and tonnage taxes; steamship inspection regulations; sick mariners dues, or hospital taxes, in Quebec province; St. Lawrence River development scheme; St. Lawrence

River Power Co., submerged weir in South Sault channel; use of flashlights by fishermen; emptying water ballast in St. Mary's River; aids to navigation; Canadian Lake Protective Association; public works, harbors, channels, etc.; canals; permissible canal drafts; Chicago Drainage Canal; lakes disaster fund of Canada, 1913. The Association's membership continues practically unchanged. The steam tonnage enrolled in 1922 was 155,514 net registered tons against 155,530 in 1921, and the barge or sailing tonnage was 25,213, against 32,173 in 1921; a total of 180,727 net registered tons, against 187,703 in 1921.

Proceedings at Meeting.—The appointment of a Commission by the Dominion Government to enquire into Great Lakes grain freight rates was discussed and the executive committee's action in refraining from any step which would have involved the Association as a defendant was approved, as the Association has consistently left the question of rates to individual members for the last 13 years. Members expressed their gratitude to the President for his special efforts to bring before the commission the real facts which led to the difficulties of the past season, and the meeting approved and commended the references made to the subject in the annual report including the statement therein protesting against any suspension or repeal of the coasting law in Canada only, without reciprocal action in the United States.

The action of the past year in regard to steamship inspection fees and boiler and engine inspection rules was reviewed and T. R. Enderby, A. A. Wright, A. E. Mathews and J. Waller, were appointed a committee to carry on aggressive action regarding the regulations, to secure and tabulate specific complaints, and to interview the officials at Ottawa, going first to the Chairman of the Inspection Board, and if necessary to the Minister of Marine. The same committee was requested to interview the Minister and seek the allowance of the petition already filed for abolition of the compulsory payment of St. Lawrence pilotage dues. The support of the Shipping Federation of Canada, promised last year, is to be enlisted.

The questions of sick mariners' fees in Quebec Province and tonnage taxes in U. S. ports, which are linked together by the Act of Congress relating to tonnage taxes, were discussed with special reference to the Association's action in 1922, and to the question of expediency.

A report was presented of the action taken in regard to fees for overtime work of immigration officials, and the present state of the matter, and it was resolved to allow the question to drop.

It was resolved that the committee mentioned above, of which the President is chairman, press upon the Minister's attention the urgent need of appropriation of funds for Lighthouse Board undertakings, as navigation interests are seriously prejudiced by the Board's forced inactivity. It was resolved to refer to the executive committee the consideration

of requirements, and presentation of petitions for improvements, as in 1922.

The Association's counsel having reported interviews with counsel for the Canadian Pacific and the Canadian National Railways and with the Ontario Minister of Labor, in reference to the Ontario Workmen's Compensation Act, regarding proposals to provide for cases of default in payment of claims by parties in schedule 2 of the act, and in particular a proposal to abolish schedule 2 and place the whole system on a premium basis, it was resolved to endeavor to have provision made for a guarantee of schedule 2 by its own members, or in the alternative, if necessary, for a guarantee of each class of schedule 2 by the members of the respective classes.

C. H. Nicholson, Manager, Steamships and Car Ferries, Central Region, Canadian National Rys., introduced a proposal for the enlistment of assistance from Pacific coast companies for mutual benefit, and was asked to conduct correspondence with a view to securing some arrangement for co-operation, and to report to the executive committee.

Plans were discussed for the enrollment of new tonnage of companies formed recently for trade on the lakes and the St. Lawrence.

It was resolved to hold monthly meetings of the executive committee on the 2nd Wednesday of each month, alternately in Toronto and Montreal, the first meeting to be held in Toronto on June 13. It was also resolved that the annual general meetings be held between the 1st and 15th of January, to enable members to attend before leaving upon annual holiday trips.

A resolution was passed expressing the Association's regret at the death of W. H. Smith, Manager, Canada Atlantic Transit Co., and G.T.R. Lake Ontario Car Ferries.

The executive committee was elected as follows: A. A. Wright, Vice President and Managing Director, Davie Shipbuilding and Repairing Co., Montreal and Toronto, Honorary President; T. R. Enderby, Operating Manager, Canada Steamship Lines, Montreal, President; G. J. Madden, George Hall Coal Co. of Canada, Ogdensburg, N.Y., First Vice President; A. E. Mathews, Mathews Steamship Co., Toronto, Second Vice President; W. E. Burke, Century Coal Co., and Canada Steamship Lines, Montreal; W. Crawford and Yvon Dupree, Sincennes-McNaughton Lines, Montreal; L. L. Henderson, formerly of Montreal Transportation Co., honorary member; W. J. McCormack, Algoma Central Steamship Co., Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa; C. H. Nicholson, Canada Atlantic Steamship Co., and Canadian National Rys. Central Region car ferries, Toronto; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Toronto; John Waller, Keystone Transports Ltd., Montreal; Senator L. C. Webster, Webster Steamship Co., Montreal.

Floating Drydock for North Vancouver B.C.

Canadian Railway and Marine World for May, stated that the Dominion Government had advised the Burrard Drydock Co. Ltd., that it might proceed with building the sectional floating drydock, as agreed to under the Drydock Subsidies Act, between the government and the company in Dec. 1912, and which was held up, pending further enquiry into the need for such a drydock, on the change of government about that time.

The drydock will be of the pontoon type, with wooden pontoons and continuous steel wings, and it will have a lifting capacity of 15,000 tons. It will be built in two sections, one 200 ft. long and the other 300 ft. long, the first section having 4 pontoons and the second 7, with entirely independent machinery for operating the pumps, so that each section may be used as a separate dock. Provision is also made that, should the necessity arise in the future, a third sec-

thoroughly protected against attack by the teredo and other marine borers, by the sheathing described, which will be treated with tar and arsenic, and also protected by outside hemlock sheathing. The pumping equipment will comprise 22-18 in. centrifugal pumps, one on each side of each pontoon, all electrically driven and controlled from a central station. In conjunction with the floating drydock there will be a concrete pier, 700 x 50 ft., built of concrete cylinders on a similar plan to the Ballantyne pier at Vancouver. It will be equipped with heavy cranes, and pier legs, up to 75 tons capacity. Considerable dredging will be necessary to obtain the depth for sinking the drydock, and, with the material removed, a large area will be reclaimed on which the machine shops to be operated in conjunction with the drydock, will be erected. These will consist of steel buildings, including machine shop

Welland Canal Navigation.

L. D. O'Hara, Superintending Engineer, Welland Canal, has issued the following notice: Attention is drawn to the fact that in connection with the Welland Ship Canal, the Canadian Dredging Co. is constructing the easterly abutment of the new bridge over the canal at Port Robinson. All downbound ships must take the old or easterly draw, in passing Port Robinson bridge, and must do so at moderate speed, and with great caution, owing to the bend in the canal, the current and the narrow passage. They must avoid collision, or contact, with the double row of wooden piles placed at the southerly side of the steel sheetpile cofferdam driven for the new easterly abutment, as the double row of wooden piles is of light and flimsy construction, and is merely for the purpose of warning ships and not for protecting the steel cofferdam construction. Downbound ships must not attempt to take the new or westerly draw, as there is great danger



Floating Drydock, of type to be built at North Vancouver.

tion of 200 ft. may be added. When the two sections are operated together, the total length of the dock will be 556½ ft., length over pontoons 495½ ft., width over all 126 ft., clear width between wings 98 ft., draft over 4 ft. keel blocks, 24 ft. Each of the 11 pontoons will be 125 x 44 x 14½ ft. deep, all of heavy timber and rigidly connected to the side walls or wings by steel links and pins, and so arranged that any pontoon may be detached quickly and drydocked on the remaining part of the dock for examination or repairs. Howe trusses will be fitted every 3 ft. consisting of top and bottom chords, diagonal trussed members, heavy stanchions and iron rod tension members. There will be a solid center line bulkhead and 3 nonwatertight bulkheads on each side. The deck and bottom planking will be 5 x 12 ft. timbers and the sides and ends 6 x 12. The pontoons will be covered on the outside by 3 layers of prepared felt, fastened by 1 x 12 creosoted sheathing. The detaching of any of the pontoons for examination or repairs will not interfere with the continuous use of the drydock, so long as there be sufficient space at the end to receive the pontoons. Experience has shown that these pontoons need only be examined about once in 7 years, as they will be

250 x 60 ft., equipped with gravity crane, 30 tons capacity, and galleries for small machine tools; blacksmith shop 100 x 40 ft., equipped with gantry and jib cranes, furnaces, forges, etc.

The drydock, etc. will be located on a site extending eastward from Lonsdale Ave. for about 700 ft., and will be built from plans drawn by W. T. Donnelly, New York, which are similar to those he designed for drydocks for Prince Rupert, B.C., for several places in the United States and at Honolulu. The accompanying illustration of another drydock designed by Mr. Donnelly shows exactly how the North Vancouver one will appear. A. D. Swan, M. Inst. C.E., M.I.Mech.E., Montreal, is retained by the company as engineer for the work, covering the floating drydock, dredging for basins and piers, construction of piers, one concrete and one creosoted timber, and the construction of a rubble embankment, etc.

Mite Towing Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$25,000 authorized capital, and office at Victoria, B.C., to acquire the steam tug Mighty Mite from Chas. Granholm, and to carry on a general towing business.

of colliding with the present highway swing bridge, which is not very well protected. All upbound ships must take the new or west draw, which has a clear width of 70 ft. with 14 ft. of water.

Quinnat Towing Co. Ltd. has been incorporated, under the British Columbia Companies Act, with \$10,000 authorized capital, and office at Vancouver, to take over the motor tug Quinnat, from the Cedar Creek Logging Co., and to carry on a general towing and shipping business. The Quinnat was built at Port Nelson, B.C., in 1909, and is screw driven by engine of 5 h.p. Her dimensions are,—length 40.5 ft., breadth 11.8 ft., depth 4.7 ft., tonnage 16 gross, 11 net.

Public Works Marine Contracts.—The Dominion Public Works Department has awarded contracts as follows,—March 27, construction of wharf at Fanny Bay, B.C., to William Greenlees, Vancouver, B.C., at unit prices; March 27, extension to wharf at Grand River, Gaspé County, Que., to M. Bernatchaz and G. E. Fournier, Montmagny, Que., at unit prices; April 5, dredging entrance channel basin and crib seats for proposed breakwater at Matane, Que., to Horace Dussault and Co., Quebec, Que., class B at 37c a cub. yd. place measure.

Pilotage Certificates for Masters and Mates.

The Minister of Marine moved in the House of Commons, on May 11, that it is expedient to amend the Canada Shipping Act, R.S.C. chap. 113, sec. 487, by providing that a master or mate upon application as therein provided may, if his application be approved by the pilotage authority, be thereupon examined, and, if found competent, a pilotage certificate may be granted to him. In explanation, Mr. Lapointe said: "By section 487 of the Canada Shipping Act, apart from the pilotage districts of Montreal, Quebec, St. John and Halifax, the master or mate of any vessel can apply to the pilotage authorities to pass an examination as pilot, and the pilotage authorities, after the ordinary examinations, and upon the payment of the dues, are compelled to deliver a certificate to that master or mate. The object of the resolution is, that instead of making this compulsory on the pilotage authorities, to make it discretionary. The pilotage authority, instead of 'shall deliver the certificate,' 'may deliver the certificate' after it has approved the request. The necessity for this has been shown to the Department in a special case this season in the pilotage district of Miramichi, N.B. At this place the channel is narrow, and any accident that takes place there would block the traffic altogether. It is not a very important district, and the pilots could not make a living if the most important ships that go there were relieved from the obligation of taking those pilots on those ships. It is very important to the port that pilots should be retained there to bring foreign ships in. The only purpose of the resolution and of the bill which will be introduced based upon it, is, in special cases, to empower the pilotage authorities to refuse the examination of a master and mate and to place the small pilotage districts on the same level as Quebec, Montreal, St. John and Halifax in this regard. The Governor in council, under a section of the Shipping Act, can at any time nominate the Minister of Marine and Fisheries as pilotage authority for any port. For the port of Miramichi, for instance, the Minister is the authority."

The resolution was carried, and a bill based on it was read a first time.

Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties;—

Princess Beatrice-Camosun Collision.

Held at Vancouver, B.C., March 6, by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. H. Mowatt and William Wright, as nautical assessors into a collision between the C.P.R. s.s. Princess Beatrice and the Union Steamship Co. of British Columbia's s.s. Camosun, near Kingcombe Point, McKay Reach, B.C., Jan. 20. The court considered that the evidence was so conflicting and contradictory as to be absolutely unreliable and unconvincing, and concluded that having in view the locality where the collision occurred, in a short and straight channel between Kingcombe Point and Trivett Point, about 4½ miles apart, and the fact that both ships rounded those points at almost the same time, bound in opposite directions, it is evident they were approaching each other end on, on a clear and dark night, with their lights distinctly visible to each other. No action, however, appears to have been taken on either ship until they were dangerously close, when, almost immediately before the impact, the Princess Beatrice ported her helm, but did not at the same time comply with article 28, as she should have done, and almost at the same moment the Camosun blew two blasts and starboarded, undoubtedly a wrong manoeuvre. Both ships contributed to the collision, and both are undoubtedly to blame. The court was not prepared to say that either ship was being handled in a careless or negligent manner, but the officers in charge of each certainly showed little judgment, and less prudence, in allowing their ships to approach so close before taking any action. At the moment when it must have been apparent that risk of collision was imminent, the engines of both ships should have been put full astern. No blame can be attached to the masters of either ships, both of whom were below until within a few seconds of the collision the ships being under the charge respectively of G. S. Forbes, second mate of the Princess Beatrice, and S. Nelson, first mate of the Camosun, both of whom deserve censure for taking such risks.

Canadian Pacific Railway Ocean Steamship Services.

The s.s. Empress of Canada, on an easterly trip recently, during a portion of the run, did 572 knots in 24 hours, averaging between 23 and 24 knots for the day, a record which it is said has never been approached by any other commercial ship on the Pacific run. Had the time been figured closely, allowing for probable steaming time due to change of longitude, viz.,—23½ hours the average speed for the day would have been over 24 knots.

The company has announced the ships which will be engaged on its various trans-Atlantic services during this season, as follows,—Montreal to Belfast and Glasgow—Metagama, Marburn, Marloch and Marvale; Montreal to Cherbourg, Southampton and Antwerp—Minnedosa and Melita; Montreal to Cherbourg, Havre and Southampton—Marglen, Havre being substituted for Cherbourg on the westbound trips; Montreal to Liverpool—Montclare, Montcalm, Montrose; Quebec to Liverpool—Montlaurier; Quebec to Cherbourg, Southampton and Hamburg—Empress of Scotland, Empress of France, Empress of Britain.

Halifax Graving Dock Expropriation.—The expropriation of the Halifax Graving Dock Co's property at Halifax, N.S., by the Dominion Government, in 1918, has been revived by the circularizing of members of the Senate and House of Commons, by S. M. Brookfield, Chairman of the company. The property was expropriated under an order in council of May 27, 1918, and leased to Halifax Shipyards Ltd., for one year, for \$62,500, with an option for one year of the purchase of the property for \$1,250,000. The Halifax Shipyards Ltd. exercised its option, and has operated the dock since, as a portion of its ship building and ship repairing plant. The circular referred to complains of the expropriation, and of the terms, and asks for redress for the shareholders. The arguments advanced are largely the same as in the original complaint, details of which were given in Canadian Railway and Marine World for Dec. 1918.

The World's Largest Ship.—With the completion of the reconditioning of the s.s. Leviathan, by the U.S. Government, the question of settling which is the largest ship in the world, has arisen, U.S. claims, of course, being in favor of the Leviathan, as against the British s.s. Majestic. Both ships were originally German, and passed to allied hands under the peace terms, and it is stated, with some authority, that the designer, who was the same for both ships, had said that the Majestic was the larger of the two. In regard to tonnage alone, the Leviathan, 59,956 tons increased by reconditioning, is the greater, but the Majestic is longer, and has larger passenger capacity. The increase in the Leviathan's tonnage, is stated to be due to the changes in measurement, on account of additions to the superstructure for the auxiliary Diesel machinery, and to the elimination of excess bunker space by the substitution of oil for coal, as fuel.

Bridge Damage Suit.—The Canadian National Ry. Co., as successor to the G.T.R. Co. of Canada, has issued a writ for \$6,000 against Lake Erie Navigation Co., to recover approximately \$6,000, claimed as damage to bridge over the Welland Canal, near Welland Jct., which is alleged to have been struck by the defendant's steamship Marquette and Bessemer No. 1, May 3, 1922.

Grain Shipped from Fort William and Port Arthur.

The following table, prepared by the Dominion Bureau of Statistics, Internal Trade Division, shows the bushels of each kind of grain shipped from Fort William and Port Arthur, with ports of destination, during the 1922 navigation season.

	Wheat Bush.	Oats Bush.	Barley Bush.	Flaxseed Bush.	Rye Bush.
To Canadian ports—					
Collingwood	351,942		89,665		
Depot Harbor	221,058				
Goderich	15,102,069	2,870,843	478,230	401,908	70,031
Kingston		73,832			
Midland	10,274,502	2,867,609	794,940		503,587
Montreal	2,309,272	1,327,789	1,003,858	518,946	
Port Colborne	38,870,664	5,559,589	3,076,943		188,977
Port McNicoll	20,347,633	4,366,038	1,324,023		
Port Stanley	194,786				
Quebec		463,002			
Tiffin	9,057,890	510,340	489,102		160,484
Total to Canadian ports.....	96,729,810	18,089,045	7,256,763	920,885	924,080
To United States ports—					
Buffalo	106,370,804	7,122,205	5,469,696	1,104,266	6,172,353
Chicago	1,012,087			34,233	
Detroit	106,989				
Duluth-Superior	105,000			512,765	
Erie	10,314,268				
Fairport	3,344,180				85,416
Milwaukee				90,000	
Port Huron	3,289,753		141,608		
Sandusky	80,972				
Toledo	4,027,591	587,168		174,687	80,000
Total to United States ports.....	128,651,648	7,709,372	5,611,304	1,915,951	6,337,769
Grand total.....	225,381,458	25,748,418	12,868,068	2,836,806	7,261,849

In addition to the above, 28,896,900 lb. of sample mixed grain, and 16,673 tons of elevator screenings, were shipped to Canadian ports, and 241,727,419 lb. of sample mixed grain and 74,840 tons of elevator screenings, to U. S. ports.

Report of Commission on Great Lakes Grain Rates Etc.

The Minister of Trade and Commerce tabled in the House of Commons, on May 18, a report by the commissioners appointed by the Dominion Government to enquire into an alleged combine among Great Lakes steamship owners. The commissioners, S. J. McLean, Assistant Chief Commissioner, Board of Railway Commissioners; Brig. Gen. T. L. Tremblay, member and Chief Engineer, Quebec Harbor Commission; and Levi Thomson, barrister, Qu'Appelle, Sask., were unanimous in their report, from which the following is reproduced:—

It is admitted that, at one time during the 1922 shipping season, vessel operators controlling a sufficient proportion of the bulk freighters on the upper lakes to constitute a virtual monopoly, combined to fix rates to be charged on the shipment of grain on these lakes, and in the opinion of your commission a tacit understanding between these operators, as to those rates, existed during the whole season, and measures should be taken to prevent its continuation.

Rates on grain between Canadian ports were discriminatory, as compared with rates charged by Canadian operators on grain and other bulk freight between Canadian and United States ports, and as compared with those charged by American operators on grain and other bulk freight between U.S. ports.

In justification of discrimination, it is alleged that there was congestion at Canadian ports; that the Canadian vessels got less return cargo than the American; that the work of Canadian vessels was less steady than that of the American by reason of the season's character of the grain traffic; and that rates to Buffalo were, during the early part of the 1922 season, "distressed" rates by reason of American freighters being unable to procure their usual tonnage of iron ore.

Congestion was as bad at Buffalo as at Port Colborne, and was worse than at Bay ports; therefore, discrimination cannot be justified by congestion.

Congestion did exist both in 1921 and 1922, and was one cause of high freight rates. The fact that grain can be so much more rapidly discharged from Port William and Port Arthur than it can be transferred at Montreal, Quebec and Port Colborne makes for congestion. With the completion of the Welland Canal and the addition of such facilities along the all water route as may be found necessary, in order to take advantage of the more economical operation offered thereby, it may be anticipated that there will be an increase in the grain traffic moving by the St. Lawrence route, called by Mr. Stocking, of Duluth, "the natural attractive route;" and in order properly to utilize such facilities, for the transferring of grain at Montreal, Quebec and Port Colborne, every effort should be made through effective co-operation to ensure the fullest possible co-ordinated use not only of all the facilities at the ports in question but also of all factors used bearing on the transportation and transfer of grain.

The U.S. vessels have some advantage over Canadian vessels in the matter of return cargo. Coal is the only extensive return cargo for vessels carrying bulk freight from Lakes Superior and Michigan, and as the available return cargo is much less than the cargo carried down, coal being only about 20 or 30% of American bulk freight on the Great

Lakes, the most of the vessel tonnage carrying bulk freight from the Upper Lakes, whether Americans or Canadians, must go back light; and so long as a returning vessel can get a cargo of coal, she can afford to carry at any rate that will pay her better than returning light. Whatever she gets beyond sufficient to pay for the extra time and cost caused by taking the return cargo over the time and cost of going back light, is clear gain. It is alleged that trade connections existing between U.S. vessels, and coal companies give the former an advantage over the Canadian vessels in obtaining this return cargo. It would seem, however, that, in general, the advantage possessed by the American vessel in respect of coal is not so great as represented.

Canadian bulk freight being mostly grain is more seasonal than American, and Canadian vessels may not have quite so steady employment as American, but the claim that American rates were "distress" rates shows that American vessels were at times also short of employment; and although the companies controlling nearly all the Canadian upper lakes tonnage were ably represented before the commission, they were only able to show that one Canadian vessel had been laid up for want of work during the season, and that vessel only for 30 days. On the other hand, it has been admitted that labor costs were lower on the Canadian side than on the American.

After making due allowance for additional cost of operating and handling, to which the grain was subject, but which did not apply to ore and coal, there is still an excess of earnings from the transportation of grain between Canadian ports, over earnings from the carriage of other bulk freight, which shows high and unjustifiable rates.

The increase of the 1922 rates over those of 1921 by the Canadian vessel operators was so great as to be high and unjustifiable.

Railway rates, and rates for the transportation of all important bulk freight on the Great Lakes, except grain, are being controlled in some way; the former through commissions acting on behalf of the public, the latter by agreement between the producers and carriers. The difference in cost of operation of lake vessels at different periods of the shipping season, and the movable nature of the capital invested in lake transportation, owing to the boats not being tied down to one fixed route, among other things, make it impractical to attempt to control lake traffic in exactly the same way in which rail traffic is controlled; and joint fixing of rates by agreement between producer and carrier, as in the case of iron ore, does not seem feasible.

The season of 1922 was characterized by high levels of rates, which cannot but have been detrimental to all those engaged in the production and disposal of grain, and it is, therefore, essential that, through control of the upper level of rates, the competitive principle which has been relied upon by Parliament in the case of water transportation should be permitted to be operative.

The difficulties in the way of controlling rates on lake borne grain are such that your commission is of the opinion that the only feasible method of rate control through a regulative tribunal is through maximum rates.

Power to suspend the coasting laws in respect of the grain trade should be conferred upon the Governor-in-council. It is suggested in this connection that the Dominion Bureau of Statistics should keep statistical records of the port-to-port cargoes in the coasting trade, such records to be based on returns from the vessel or vessel companies operating.

The broker should not obtain the payment for his services from participation in the premium of insurance written by him. The basis of compensation for services rendered should be a direct charge.

There is justification for publicity in connection with chartering of space and date of same.

The present practice in Winnipeg is that the chartering of vessels or space therein is done by agents generally known as vessel brokers, the work, so far as Canadian work goes, being nominally in the hands of the Standard Shipping Co., managed by Mr. L. H. Wolvin, a brother of Roy Wolvin; the Tomlinson Co., managed by Mr. Spendlove, and the Western Shipping Co., managed by Mr. Rule. It is questionable if the Western can be called an independent company; one of its organizers and directors, as well as owner of one-third of its stock, being L. H. Wolvin of the Standard Shipping Co., and its manager being Mr. Rule, Mr. Wolvin's former deputy, who appears to hold nearly another one-third of the stock.

It seems clear that competition on the Canadian side is not nearly so keen as on the American side. In fact, among Winnipeg brokers it is almost non-existent; but the natural explanation of this is the absence of any real or active competition among the Upper Lake vessel companies by whom the brokers are employed. So long as there is a practical monopoly of that traffic in the hands of three or four companies, who find it so easy to get together to arrange rates, there is not likely to be very serious competition among the brokers.

It would appear that, under the circumstances, the only direct rate control advisable is through maximum rates. This also is not without its difficulties; but control through maximum rates would leave a reasonable margin for that competitive bargaining as to rates which the grain dealers desire, while at the same time controlling the upper level of rates.

Without attempting to enumerate here factors that would have to be taken into consideration in this connection it may be said that it would not appear that one maximum rate applicable to the whole season of navigation would be a workable arrangement. It would appear that cognizance must be taken of the differences in conditions as between the first part of the season down to the end of August and the second portion down to the close of navigation; and it might be necessary, because of special conditions arising within each of these seasonal periods, to further readjust the maximum rate from time to time.

The regulation of rates through suspension of the coasting laws would not of necessity mean that whenever such suspension took place there would be a large influx of American tonnage into the Canadian grain trade. As already pointed out, the American grain rates are, to a certain extent, controlled by

ore rates, and whether or not the American grain carrier would desire to participate in Canadian business would depend upon the question of whether there was much profit in the Canadian grain traffic, as compared with the American ore traffic.

It would seem that what is important is not so much the amount of tonnage that might be added to the trade in such case as the possibilities of having tonnage brought in which would keep the Canadian carrier from so increasing his rates as to make the traffic more than usually attractive to the American grain carrier.

The fact seems to be that, so far at least as the 1922 season was concerned, when the fixing of rates suited the carriers, they fixed the rates without consulting the producer whose grain they were carrying, or the shipper from whom they receive the grain; but when the demand for space from shippers became so great that they could scarcely meet it they allowed the law of supply and demand to operate to a great extent, but still acted so well in concert that the going rate from day to day was easily ascertainable.

Open competition in this traffic is what the general public is interested in. The primary object, therefore, to be considered is the effect of permitting those holding a virtual monopoly of an exceedingly important line of business to do everything to prevent or lessen competition, even among themselves. Neither the intentions of the parties nor the presence of a pool have anything to do with the result. It is the result of actions, not the intentions of the party, nor the manner of dealing with the profits, that concerns the persons affected. If it be necessary that the principle of open competition must be so sacredly guarded, it becomes necessary that the actions of corporations constituting a virtual monopoly shall be critically scrutinized, and that all reasonable steps should be taken to ensure that open competition is interfered with to the least possible extent.

Dealing with the small profits which the steamship companies claim they made last year, viz., Canada Steamships, 9.36% Great Lakes Transportation Co., 11%; and Mathews Company, 10.24%, the report says. It is very difficult to test the accuracy of these statements, and, without saying that they are in a general way unfair, it may be said that some evidence has been submitted which shows ground for questioning the accuracy of the material filed by those companies.

As to the allegation that brokers chartering space were speculating in space the commission says, the evidence does not satisfy the commission that such speculation has been practised to any material extent.

The commissioners made the following specific recommendations: That supervision of lake rates for grain between Canadian ports should be placed in the hands of the Board of Railway Commissioners, or some independent body, with the assistance of advisers and experts who are thoroughly conversant with this problem.

That all persons or corporations carrying grain between Canadian ports shall be obliged to file maximum rates with such commission; that the commission shall have power to approve or disapprove such maximum rates, and, when not so approving, shall prescribe reasonable maximum rates; that provision shall

be made for alteration of such rates to suit different portions and conditions of the shipping season; and that rates in excess of the maximum shall be illegal.

That power be placed in the hands of the Governor-in-council to suspend coasting regulations in so far as the same may be necessary to enable American vessels to carry grain for winter storage between Canadian ports; and that the Governor-in-council shall be empowered to suspend such regulations on grain in other cases, on the recommendation or report of the commission having power of supervision over rates to be charged on the Great Lakes.

That all vessel brokers and persons in any way engaged as agents or otherwise in chartering vessels, or space on vessels, from Fort William and Port Arthur east, be prohibited from writing cargo for out-turn insurance on grain, from acting in any way as agents for the placing of such insurance, and from accepting any commission on such insurance or any premium connected therewith.

That all vessel brokers and persons in any way engaged as agents or otherwise in chartering vessels, or space on vessels, for the carriage of grain from Fort William and Port Arthur east, shall, at the grain exchange at the place where such chartering for vessel or space, is made, afford to the grain dealers a detailed statement showing the space, date of shipment, and destination for carriage of each grain charter entered into each day.

Transportation to Labrador.

It is anticipated that there will be a considerable influx of prospectors and others during the early part of the summer into the districts in Labrador where discoveries of gold have been reported. The Labrador Gold Fields, Ltd. announced that it expects to send 5,000 men, and about 100,000 tons of freight, and on this basis, a steamship service was arranged by W. N. Macdonald, Sydney, N.S., as follows,—s.s. Curlew, sailing from Sydney, N.S., May 10; s.s. Constance, sailing from Charlottetown, P.E.I., and Pictou, N.S., May 25; s.s. Dieuze, sailing from Sydney, N.S., June 5, and thereafter, daily, or weekly sailings from Sydney and other maritime province ports, according to the traffic offering.

The s.s. Curlew was built at Owen Sound, Ont., in 1892, and is screw driven by engine of 50 h.p.; her dimensions being,—length 116.3 ft., breadth 19.8 ft., depth 11.3 ft., tonnage 158 gross, 96 net, 415 displacement. The s.s. Constance was built at Owen Sound, Ont., in 1892, and is screw driven by engine of 50 h.p., her dimensions being,—length 115.6 ft., breadth 19.6 ft., depth 11.2 ft., tonnage 185 gross, 126 net, 400 displacement. The s.s. Dieuze was built by Fraser Brace Ltd. Montreal, for the French Government, her dimensions being,—length over all 204½ ft., length b.p. 195 ft., breadth extreme 40½ ft., breadth moulded 39 ft. 8 in., depth of hold 15 ft., tonnage 1,500 d.w. In addition to the foregoing, Mr. Macdonald has bought from the Anderson Co. of Canada, the s.s. Obernai, which was built by Davie Shipbuilding and Repairing Co., Lauzon, Que., for the French Government, in 1920. She is a sister ship of the s.s. Dieuze, and it is expected that delivery would be taken at Marseilles, France during May and that she would immediately commence her trip across the Atlantic.

Montreal Harbor Commissioners' Cold Storage Plant.

The Minister of Marine gave the following information in the House of Commons, recently, answering questions by T. H. Thompson, Hastings East, Ont. The Montreal Harbor Commissioners have a cold storage plant at that port, in addition to other cold storage plants at Montreal. The building of this plant was financed to the extent of \$2,765,000, out of money loaned by the Government, under statutory authority, and secured by debentures bearing interest at 5%. The financial results, for the first seven months were: operation and maintenance, \$113,789.62; interest on cost of construction, \$80,665.60; receipts, \$55,416.45. It is confidently expected that the plant will in future be self-sustaining, but any deficit that may occur will be met from general harbor revenues, without increasing harbor dues. The rates charged by the Commissioners' cold storage plant are the same as those charged by other cold storage plants in Montreal, except that the Commissioners' plant makes no charge for insurance. It is not the Government's intention to subsidize cold storage plants, to be operated by co-operative associations, in various parts of the country, with the idea of having a chain of storages to supply the Montreal cold storage and thus have all under Government control. The Cold Storage Act, as approved by the agriculture and colonization committee, provides that subsidies be paid only on account of municipal and co-operative cold storages, and not to private individuals or corporations. No provision has been made for the continuance of a subsidised cold storage, in case of disorganization of the co-operative societies, but the act will provide that the Government shall hold a lien on the cold storage for the full amount of the subsidy. There is no likelihood whatever of the rates in the Montreal Harbor Commissioners' cold storage plant being increased, if other cold storages become closed as a result of competition, the Commissioners' intention being to make charges for this service as low as they possibly can, having regard to revenue requirements.

The Manitoba Legislature and Great Lakes Shipping.—Prior to the prorogation of the Manitoba Legislature, May 5, a discussion took place on Great Lakes grain rates. The Premier is reported to have stated that the restoration of the Crownst agreement, in connection with railway, had saved western farmers \$20,000,000, which had been lost through increased lake rates, brought about by a combination of three shipping concerns, lack of competition, and the Canadian coasting regulations. The House passed a resolution unanimously, calling on the Dominion Government to suspend the coasting regulations, and to take steps to ensure fair and equitable lake freight rates. The establishment of a body, similar to the Board of Railway Commissioners, was urged to control lake and ocean freight rates.

Another Elevator for Port Arthur.—James Stewart, of the James Stewart Grain Co., President, Maple Leaf Milling Co., and a director of Canadian National Rys., is reported to have placed a contract for the construction of a grain elevator of 1,500,000 bush. capacity, at a cost of approximately \$1,000,000, at Port Arthur, Ont., with the Carter Halls Aldinger Co., construction to be completed by September.

House of Commons Committee Alleges an Atlantic Steamship Combine.

The special committee appointed by the House of Commons to enquire into agricultural conditions, and of which A. R. McMaster, Brome, Que., is chairman, presented a report on April 24 as follows: "Your committee beg to submit the following resolution which they have unanimously adopted, viz.: Among the various subjects which have been investigated by your committee, they desire to make a report on the question of ocean freights. It is not easy to over-emphasize the importance of cheap ocean transportation to the Canadian farmer. Whatever advantage may have accrued to the Canadian people by the millions of money spent on the development of our internal transportation system—the building of railways, digging of canals, deepening of rivers—such advantage may be in a large measure nullified if freight rates from our ocean ports to foreign countries are fixed at such figures as to absorb the savings which these expenditures have obtained.

"Your committee are of the opinion that upon the regular steamship lines trading from Canadian ports the price of transportation service is determined neither by the law of supply and demand, nor on the basis of cost plus a reasonable profit, but that a combine exists among the various shipping companies, which combine is known as the North Atlantic and U.K. Conference Eastward-bound. The headquarters of this organization are at 8-10 Bridge St., New York, and it includes in its membership a very great number, if not all, of the principal steamship companies operating regular lines out of North Atlantic ports. According to the witness, W. H. Chase, Atlantic freight rates are made in New York the first Thursday in every month. To this North Atlantic Conference belong nearly all, if not all, of the regular steamship lines running from Montreal, including the Canadian Government Merchant Marine. It will be remembered that the C. G. M. M., as well as the Canadian National Rys., is operated under the control of a board, and not by a minister of the Crown.

"Subsidiary to this conference there exists a smaller association of steamship men, connected with steamship lines trading out of Montreal. This association is called sometimes the Canadian Liner Committee, and sometimes the Weekly Liner Committee. They hold meetings as a rule every Tuesday afternoon at the offices of the companies whose representatives act for the association. The minutes of various meetings of this association, produced before your committee, show that the lines or transportation companies constituting the association are as follows: Cunard, Anchor, Donaldson and Thomson Lines; Canadian Pacific Ocean Services, Ltd., White Star Dominion Line; Intercontinental Transports, Ltd. (with which certain ships of the Canadian Steamship Lines, Ltd., are associated); Furness Withy Co., McLean, Kennedy & Co.; and the Canadian Government Merchant Marine, Ltd. The object of these meetings was very neatly characterized by L. A. W. Doherty, the representative of one of these lines, as being 'to stabilize or keep uniform the situation of ocean transport.' It was contended by the gentleman who represented the Canadian Government Merchant Marine before the committee that the line merely 'sat in' with the rest of the steamship lines at the weekly conference, and

that it was not bound in the same manner as the others were bound to maintain rates. A careful consideration of the evidence hardly supports this contention. It would appear that during the several years the C. G. M. M. has been in existence, it has departed from rates so established on four different occasions—one departure, however, covering more than one shipment.

"The manner in which the Liner Committee operated was as follows: The general rates were set at the North Atlantic and U. K. Conference in New York, but for the purpose of united action in regard to these and other matters, a weekly meeting was held, at which representatives of all the steamship lines attended. At this meeting, rates were agreed upon, and no member of the line had the right to depart from the rates so established without conferring with and warning his competitors of his intention so to do. An earnestly-worded expostulation would be directed by one member to another if this line of conduct was not followed. This state of affairs brought about the following extraordinary result. The United States Government forced the Shipping Board of that country which manages the U.S. governmentally-owned steamers, to make a very low rate for the transportation of flour to Europe—a rate stated by the shipping companies to be below a commercial rate. This rate applied only to flour ground in the U.S. To meet this rate, the North Atlantic Conference Lines established, at a given moment, a rate of 15c per 100 lb. on flour ground in the U.S., while they maintained a rate of 19c per 100 lb. on Canadian flour—a very substantial differential against Canadian millers. To this agreement, as a member of the North Atlantic Conference, the Canadian Government Merchant Marine was a party. The committee feel in this regard that the vast sums spent by the Canadian people on the development of a merchant marine were never intended to bring about this result. The committee desire to bring the facts in this regard to the earnest attention of the House, and would respectfully suggest that the Minister of Railways and Canals should take the matter up with the Canadian National Rys. board for consideration and appropriate action.

"It would appear that the shipping combine referred to does not include tramp steamships, which can be chartered from time to time, and among which there exists keen competition. These, however, are only available to those shippers who can load a whole steamship; neither do they take the place of regular lines which are able to effect transportation almost with the regularity of express trains, and which, therefore, offer much greater advantages to those who have to ship perishable articles to a market which wishes to have a regular supply.

"The Canadian Government Merchant Marine ships are not of such construction as permits of their being used as cattle ships, and to convert them for this purpose would be both costly and impracticable. Evidence was produced showing that since the commencement of the war, ocean rates on cattle had increased by 300%, while the price of beef in the British market had only increased 66% during the same period. Your committee is of the opinion that the continuance of the rates now charged inevitably must

have a detrimental effect upon the export cattle trade.

"Your committee were also struck with the fact that many of the witnesses connected with trans-Atlantic steamship lines testified that, as a rule, small cargoes were brought from Great Britain to this country, and that this fact tended to increase freight rates on Canadian eastward-bound traffic over what would be the case if a fair amount of traffic were coming westward as well as going eastward. Thus any policy which diminishes the volume of trade coming from Europe to Canada, tends to increase the cost of transportation from Canada to Europe. The attention of the House is respectfully invited to this fact, and the attention of the Government directed to the situation so created."

The finding of the House of Commons committee, composed of men who know nothing about the shipping business, is in marked contrast to the final report of Imperial Shipping Committee appointed by the Lloyd George Government in 1920 to enquire into the deferred rebate system, regarding which complaints had been received by the Imperial Government from the governments of the Commonwealth of Australia and of other parts of the British Empire. The committee was composed of 14 members, with Sir H. J. Mackinder, M.P., as chairman, eight members being nominated respectively by the Secretary of State for the Colonies, the Board of Trade of Great Britain, and the Governments of Canada, Australia, India, New Zealand, South Africa and Newfoundland, and five members at large being chosen for their experience in shipping and commerce. Canada's nominee was Sir George Perley, who served until the change of High Commissioners, being replaced on the committee on April 15, 1922, by Hon. P. C. Larkin, whose signature was attached, with those of his fellow-members, to the final report, which was published in February last, and from which the following is reproduced:—

"It appears now to be a universal condition of the larger industries in all progressive countries that there should be a high degree of organization among the chief companies, firms, or other units, and this condition is especially marked in industries which have to deal with transport. The necessity for such organization obtains clearly in the case of liner services. They have to provide for the distribution, all over the world, of heterogeneous classes of goods, the circulation of which to an ever-increasing extent constitutes an essential part of the world's economy. The requirements for this part of commerce are in marked contrast to those of bulk cargo in general, where large quantities of the same kind of goods have to be carried at irregular intervals. The ships which cater for this trade are in the main separate units, but the liner service requires fleets of ships operating in unison, and consequently large capital resources and a carefully perfected central organization. It is clear that competition between individual liners or lines in the same trade would be quite incompatible with stability of rates, and that the trade would in fact tend to return to the disturbed conditions which prevailed before the introduction of the conference system, or to those characteristic of the tramp market. The shippers might for a time secure the

benefit of low cut rates, but there would inevitably be a strong tendency to abandon regularity in sailings, and there would be no guarantee, such as obtains at present, of any general progress in the type of ship plying and the nature of the facilities afforded. We consider, therefore, that the conference system must be accepted as a necessary concomitant of modern commerce."

It may be explained that the word "liner" is used in the report in the shipper's sense of any steamship having a regular route and schedule, as distinct from a tramp steamship, and not in the limited and popular application of the term to passenger ships only.

United States Merchant Marine.

E. P. Farley, formerly Vice President, Emergency Fleet Corporation, has been appointed Chairman, U.S. Shipping Board effective June 12, vice A. D. Lasker, who retires after two years service.

After several meetings with representatives of the International Seamen's Union, with reference to wages and working conditions on U.S. Shipping Board's ships, the Board has increased wages as shown below, with certain changes in working conditions, such as the inauguration of the 3-watch system, instead of the 2-watch system, and the observance of an 8-hour day in ports, effective, May 14,—

	Old scale	New scale
Carpenter	\$70.00	\$80.00
Carpenter's mate	60.00	70.00
Boatswain	65.00	75.00
Boatswain's mate	60.00	70.00
Quartermaster	60.00	70.00
Able seaman	55.00	62.50
Ordinary seaman	40.00	47.50
Storekeeper	60.00	70.00
Deck engineer	70.00	80.00
Pump man	70.00	80.00
Donkey man	65.00	75.00
Storekeeper	65.00	75.00
Oiler	65.00	72.50
Fireman, oil burner	57.50	65.00
Fireman, coal burner	57.50	67.50
Coal passer	50.00	60.00
Wiper	50.00	57.50
Water tender	65.00	72.50

A circular issued by the Board states that in considering the matter due weight had to be given to the cost of living, the supply and demand of U.S. labor, and the establishment of such wages and working conditions as would make for stabilization, efficiency and economy. It is claimed that the "Americanization" of the U.S. merchant marine ships' crews is highly desirable; that improvement in the morale and maintenance of efficient crews to man and care for the ships should increase efficiency and keep repair bills at a minimum; that the co-operation and loyal support of real American seamen are necessary; and that the riff-raff element and the disloyal radical have no place in the service. A New York press report states that at the American Steamship Owners' Association, decided May 15, after careful consideration, that it had come to the conclusion that conditions in the shipping business do not make it possible for the Association to meet the increase in wages put into effect by the U.S. Shipping Board. It was also stated that it was admitted that because of larger wages being paid in land occupations, seamen were leaving the sea, and that eventually the shipowners would be forced to adopt the new schedule on account of desertions.

White Star Towing Co., Ltd. has been incorporated under the British Columbia Companies Act, with \$10,000 authorized capital and office at Victoria, to carry on a general towing, chartering and lighterage business, and to own and operate ships.

Cattle Shipments to Great Britain.

In the article on this subject, in Canadian Railway and Marine World for May, pg. 245, the Minister of Agriculture was quoted as stating in the House of Commons, on April 16, that the Deputy Minister was preparing a statement covering the whole question. It was issued on April 26, as follows: "Many comments, unfavorable to the Dominion Government, have appeared in the daily press re the lack of ocean transport accommodation for cattle ready for export to Great Britain, and possibly some reason for such criticism has existed, inasmuch as the demand for space would appear to be slightly greater than the supply. Apparently, however, most of the complaints and much of the talk have been by men who were unfamiliar with practical conditions as they exist in this country, and as they might be expected to exist in any country where ocean transportation is necessary in forwarding cattle to their ultimate destination. By far the largest percentage of cattle going forward in the past few weeks, being shipped at present, or that will, it is anticipated, go forward during the spring shippings, are being handled by British buyers. Some of these men have come over here, apparently expecting to find cattle waiting around in blocks to be picked up, and anticipating that ships would be waiting to carry this stock across. Some of these men also seem to have expected that the Government would have all the cattle in the country under control, and likewise the shipping space, so that all that would be necessary for them to do would be to give their orders and await events. Some buyers, however, came over, knowing conditions as they exist here, and are quietly buying and shipping, and making money for themselves and for the Canadian cattleman. The ocean space available in May and June for cattle sailing from Montreal is approximately as per list attached. This matter of space and the demand therefor has been discussed with the two principal brokers handling this space in Montreal, and, therefore, in the whole of Canada, viz., D. A. Campbell and Donald Munro. They were quite in agreement in stating that for the first and second weeks in May the space available for cattle from Montreal would be not quite equal to the demand, for the third week in May the space available and the demand for the same would be about equal, while for the last ten days of the month the space was now and probably would continue to be greater than the demand. For June, the demand is as yet, of course, practically non-existent, the space in prospect, however, is as per list attached, plus sailings for Manchester, which will probably amount to between 1,600 and 1,700, making a total for the month of about 7,500, the chances being that a considerably less amount of space than this will be required, since the stocker trade season usually ends with May or soon after June 1. During April and late March, when the shipping of stockers began, the demand was somewhat greater than the supply, but up to the end of March the demand had been less than 200 over the supply of space available. As to the situation in this respect in April, it has not been possible to get any accurate figures, although undoubtedly the demand has been somewhat greater than the supply of space. Nevertheless the voiced demand has been very considerably greater than the actual demand, as witness one case where a

shipper proclaimed aloud that he wanted 20,000 spaces, and when offered 1,400 spaces was content to close on 400 and let the rest go elsewhere, although this space was at \$22.50 and he had had options on space at \$25.00."

Estimated Sailings from Montreal With Canadian Cattle to Great Britain.

1923*	Steamship	To	No.
May 2	Oxonian	Liverpool	814
5	Concordia	Glasgow	400
8	Ariano	Dundee	245
12	Welshman	Liverpool	850
17	M/Shipper	Manchester	560
19	Caledonian	Liverpool	522
22	Comino	Dundee	265
24	M/Division	Manchester	560
25	Gracia	Glasgow	525
26	Irishman	Liverpool	900
31	M/Brigade	Manchester	540
June 2	Parthenia	Glasgow	275
2	Turcoman	Liverpool	608
9	Cabotia	Glasgow	80
9	Oxonian	Liverpool	814
16	Colonian	Liverpool	725
16	Concordia	Glasgow	400
22	Gracia	Glasgow	525
23	Welshman	Liverpool	850
23	Salacia	Avonmouth	400
29	Kastalia	Glasgow	522
30	Caledonian	Liverpool	522
	Manchester yet to arrange		1,660

13,365

A London, Eng., press cable of May 8, said that several questions had been asked in the House of Commons regarding the alleged unsanitary condition of ships carrying Canadian store cattle to Great Britain. Viscount Wolmer, Secretary to the Board of Trade, said that when the ships left the United Kingdom it was not anticipated that they would engage in his trade, and temporary accommodation for the cattlemen had been fitted up under the inspection of the Canadian Department of Agriculture.

R. Forke, Brandon, Man., Progressive leader, said in the House of Commons, May 9: "I wish to ask the Minister of Agriculture if he noticed the statement in today's newspapers that the unsanitary conditions on boats carrying Canadian cattle to Great Britain had been the subject of discussion in the British Parliament. The dispatch said that an inspection had been made necessary by the Canadian Department of Agriculture owing to these conditions. Has the Minister any knowledge of the matter? It is very necessary that this service should be carried out under the very best auspices and, if unsanitary conditions prevail on these boats, that steps should be taken to remedy them."

The Minister of Agriculture, Mr. Moth-erwell, replied: "I do not know that we should attach too much importance to these dispatches, because of the confusion that exists between the authorities over there and ourselves, with respect to the proper conception of the arrangement that was made last autumn as to the class of animals that were eligible to be shipped. As I understand the situation, nothing but stockers, that is, non-breeding cattle and fat cattle, are eligible to go over; breeders are not eligible. With respect to the sanitary conditions on the ships engaged in carrying cattle, I understand that when the embargo first came off, some ships were put into commission rather hastily and were not up to the requirements. I expect, however, that will be remedied when these ships take on board their second load."

The Ship Quest, which was used on Sir Ernest Shackleton's last trip to the Antarctic Ocean, has not, it is stated, been bought by the Dominion Government, for exploration or any other purpose, as was reported recently.

Canadian National Railways Annual Report for Year Ended December 31, 1922.

Introductory: The present Board was appointed in October and was therefore in office for less than three months of the year under review. It has been considered desirable to include in this report only the operations of those lines which were generally recognized as constituting the Canadian National Railways during the year. The three groups then so designated were the Canadian Government Railways, the Canadian Northern Railway Lines and the Grand Trunk Pacific Railway. Separate reports will be prepared for the Grand Trunk Lines.

The results of operation are those of what may be termed the fourth year of the Canadian National Railways—that collective title having been authorized for use in December 1918.

Digest of Operations: Operations for the year show an improvement of \$6,484,017.87, the operating deficit being reduced by that amount as compared with 1921—and being an improvement of over twenty-seven million dollars compared with 1920.

The improvement in the net situation (or reduction of deficit) referred to, as compared with 1921, was achieved in the face of a reduction in gross revenue brought about by reduced passenger and freight rates and also in the face of a greater tonnage movement, which, while requiring a considerably greater operating performance produced no increase in gross returns.

Earnings and Expenses compare with the two preceding years as follows:

	1922	1921	1920
Gross Earnings			
Canadian Northern Railway.....	\$ 60,679,033.37	\$ 69,088,474.16	\$ 66,695,398.80
Canadian Government Railways.....	40,939,945.76	41,275,314.84	44,803,045.84
Grand Trunk Pacific Railway.....	18,516,977.58	16,638,677.64	14,408,549.66
Total.....	\$120,135,956.71	\$127,002,466.64	\$125,906,994.30
Operating Expenses			
Canadian Northern Railway.....	\$ 63,625,763.09	\$ 75,564,385.30	\$ 82,953,978.60
Canadian Government Railways.....	43,436,667.67	46,990,047.74	55,445,651.29
Grand Trunk Pacific Railway.....	22,809,843.99	20,668,369.51	24,543,063.60
Total.....	\$129,872,274.75	\$143,222,802.55	\$162,942,693.49
Operating Deficit			
Canadian Northern Railway.....	\$ 2,946,729.72	\$ 6,475,911.14	\$ 16,258,579.80
Canadian Government Railways.....	2,496,721.91	5,714,732.90	10,642,605.45
Grand Trunk Pacific Railway.....	4,292,866.41	4,029,691.87	10,134,513.94
Total.....	\$ 9,736,318.04	\$ 16,220,335.91	\$ 37,035,699.19

Note: In considering comparative statistical data for the last three years it should be remembered that as regards traffic conditions on Canadian railways as a whole 1920 was an exceptionally good year and 1921 an exceptionally bad one. The improvement over 1921 which 1922 shows should therefore not be regarded as an advance, but merely as indicating that recovery is under way. Failure of 1922 traffic figures to equal those of 1920 is not of itself significant on account of the extraordinary conditions of 1920 which made that an exceptional year.

Earnings: Gross earnings for the year 1922 decreased by \$6,866,509.93. Freight, passenger and express earnings were all less than in 1921.

As the loss in revenue due to the Crowsnest Pass agreement rates is estimated to be six and a half million dollars, that reduction stands out as the most important railway event of the year. Notwithstanding the reduction referred to, freight revenue increased its percentage to total revenue providing 76% in 1922 as against 74% in 1921.

The decrease in passenger traffic is discouraging, particularly as the quality of the service given has improved and because the rate for passenger travel in Canada is relatively low, being generally slightly below the prevailing rates in United States. A good year was expected, but the traffic did not materialize. Passenger revenue declined 11 1-3% and passenger travel measured by "passenger miles" declined 3.55%.

Operating Expenses and Performance: The results for the year show that working expenditures were well controlled, as there were reductions in expenses in the maintenance and transportation accounts. The condition of the physical properties was improved during the year, and yet maintenance of way expenses were reduced by \$2,656,340.92 and maintenance of equipment expenses by \$1,225,612.86. As already pointed out, more business was moved and yet \$11,299,471.65 less, in addition to the maintenance saving, was spent to move it.

There were small reductions in pay for certain classes of employees, and reduced cost of material had its effect in bringing about this result, but in the main the advance may be credited to greater efficiency of operation. The average freight train load of the system increased by 65.68 tons or by 13.61%, whereas on a mile of road basis the increase in density of freight traffic was only 9.43%. This average increase in train load was accomplished by obtaining in every month a substantial increase over the corresponding month in the previous year, 22.4 tons being the lowest recorded, and the highest increase in any one month was over 100 tons. Other measures of increased efficiency may be mentioned, such as more miles obtained per car per day and a small increase in load per car mile. The cost of yard operation was also considerably reduced, measured on the basis of the number of cars handled.

Mileage: The operated mileage as at 31st December, 1922, was made up as follows:—

	Miles
Canadian Northern Railway System.....	9,752.86
Canadian Government Railways.....	4,649.44
Grand Trunk Pacific Railway.....	2,695.61

Total Railway—steam operated.....	17,097.91
Electric Lines of Canadian Northern Ry. System.....	126.13

Total mileage operated..... 17,224.04

The following main line mileage was put into operation during the year:—

	Miles
In Manitoba—	
From Amaranth to Alonza.....	17.84
In Saskatchewan—	
From Lintlaw to Kelvington.....	13.84
" Turtleford to St. Walburg.....	22.10
" Melfort to Ridgedale.....	22.69
" Demain to Beechy.....	6.11
" Gravelburg to West of Hodgeville.....	28.99
In Alberta—	
From Red Deer Junction to Red Deer....	6.10
In British Columbia—	
From Victoria to Koksilah.....	52.50

Total..... 170.17

Finance: During the year, an issue of \$11,000,000 Canadian Northern Railway Company 5% Three Year Notes, guaranteed by the Dominion Government, was disposed of at 99.03%. The proceeds, together with accrued interest and New York ex-

interlocking plants, machinery in shops and round-houses, and the heating and lighting of stations, freight sheds, etc.

A most important group of improvements includes the extension of sidings and other yard and station trackage, 315 such improvements were undertaken aggregating 408,928 feet of track.

Construction: The work under this head was largely confined to ballasting and surfacing branch lines in the Prairie provinces. No grading or track-laying on new lines was undertaken. Fencing and telegraph lines were built and stations and other structures required for new lines. The mileage turned over for operation is shown above.

Co-ordination: The betterment work undertaken during the year included a number of track connections and re-arrangement of facilities to enable the properties under consolidated management to be co-ordinated. This work will be continued as plans for the complete co-ordination of the various lines are developed.

Under this head reference may be made to the improvement known as the Long Lake Cut-Off, a connection between the National Transcontinental and Canadian Northern main lines east of Long Lake, Ontario (north of Lake Superior). This line had been under consideration for some time. Your present directors convinced of its value to the National system could see no justification for delaying action in the matter, and a contract for grading, bridging and culverts was let on December 30th, 1922. The work is progressing favorably. The line will be 29.5 miles in length, but reduces the mileage between Toronto and other eastern points and Winnipeg by 102 miles as compared with the shortest route now available to the National system not involving use of other railways. Besides reducing mileage, it has many economic advantages.

Rolling Stock: The detailed statement of rolling stock appearing as an appendix shows the following deliveries during the year 1922:—

2 Locomotives,
26 Passenger train cars,
561 Freight cars,
874 Cars for road and other work.

Wages: During the year 1922 wage adjustments were effected with various groups of employees which brought the general level slightly down. There were no strikes among the railway employees in Canada.

Lands: Land sales for the years ending 31st December, 1920, 1921 and 1922 were as shown in the following table. This table also shows the sales which had previously been entered into and which were, by mutual arrangement, cancelled during corresponding periods.

Year	Actual sales	Average
1920	84,002.172 acres.....	\$1,738,801.46 \$ 20.70
1921	17,031.15 "	321,042.08 18.85
1922	9,025.53 "	150,531.14 16.67
Year	Cancellations	Average
1920	31,188.76 acres.....	\$ 412,457.19 \$ 13.22
1921	17,032.08 "	273,720.56 16.07
1922	114,056.663 "	1,599,278.69 14.02

It will be seen that the actual sales for 1922 were considerably less than the sales for 1921 and that the acreage cancelled during the same period was greatly in excess of the cancellations for the previous year. This is a reflection of the very unsatisfactory conditions which prevailed during the year resulting in a large number of purchasers quit claiming their lands back to the company.

During the year it was also necessary to adjust some wholesale deals which had previously been entered into.

As at December 31st, 1922, there remained unsold 825,008 acres, the increase being caused by the cancellations previously referred to. It was considered advisable in view of the lower prices being realized for the company's lands, to reduce the value at which these unsold lands are carried in the balance sheet, and this has been done.

Conclusion: Due to the consolidation of the Grand Trunk System with these lines there will not be published any additional reports grouping only the operation of those lines which are covered by this report. The report of the previous Board of Directors for the year 1921 was in the nature of a three year survey of the operations and development of these lines as a Government owned system. 1922 completes the four year period of unified management of the former Canadian Government Railways and the Canadian Northern Railway System. The operations of the Grand Trunk Pacific, while only under complete co-ordination since October, 1920, or 2 1/4 years, have been included for the full period for comparative purposes.

During the period the Government has provided large sums of money for the physical improvement of these properties, for co-ordination facilities, for additional rolling stock and for branch line construction.

On behalf of the board, I would like to state that after inspection of the main arteries of the system, we find that the work undertaken has been well performed, and that the expenditures have been well applied. While the demands for capital expenditure on a system of such extent in a growing country, as the former board stated, are never ending, yet it may now be said that the

three groups of lines, until recently the Canadian National Railways, enter the consolidation in excellent physical condition and operating at a high mark of efficiency as regards actual performance or movement of traffic and other factors controllable by management. Apart from certain well known cases of duplication the lines are well lo-

cated and in exceptional position to successfully perform the transportation demands of the country. The problem as far as the lines covered by the report is concerned, is how sufficient traffic may be developed to carry the overhead and maintenance expenses. As far as transportation costs go, an economical performance is being made.

Under these circumstances the margin for improvement with the present light volume of traffic is largely dependent on circumstances beyond the control of the management.

On some of the older sections there are still improvements that should be undertaken, but in the main the lines are modern in character and were built or have been brought up to standards which are ahead of actual traffic requirements, except under stress of seasonal movements.

The success of the National System in respect to these three groups is not entirely to be obtained by methods generally applied to railways which are not producing returns, viz.: improving the physical condition and operating methods—it is a matter of building up the country to support the railways.

On account of the situation outlined with reference to the lines previously comprising the Canadian National Railways, and to the fact that some time will necessarily be required to develop plans for improving the situation as it is now affected by the inclusion of the Grand Trunk Lines, and having in mind other conditions which the re-organization of so vast a system involves, your directors feel it necessary to warn the owners of the system that the present year is not likely to show any great advance in operating performance, except as the situation may be improved by increased traffic, and while there may be an improvement in the traffic returns in the months prior to the crop movement, it is rather optimistic to expect a greater seasonal movement than took place in the last quarter of 1922. As the rates over the entire year will be at a lower level, expectations of improved net are not likely to be realized. The present year then is to be regarded as one of transition in which the new machine will get down to its bearings and be ready for the greater effort which it is hoped traffic will demand of it in future years. The organization is new. Officers have been re-arranged and have much new territory and new conditions to consider. This, however, is expected to prove a feature of value inasmuch as experienced railway men will view situations from new angles.

The whole reorganization has been accomplished with the best of good feeling generally prevailing, and I feel sure that the splendid loyalty which I found existing among the employees of the various lines now brought together is being rapidly transferred to the new administration and that enthusiastic and constant team work will be forthcoming from the great army of men in the system's employ.

For the Directors,
H. W. THORNTON,
President and Chairman.

Montreal, April, 1923.

Comparative Summary of Operating Results—Twelve Months Ended December 31, 1922, 1921 and 1920.			
	1922	1921	1920
GROSS EARNINGS			
Canadian Northern Ry.....	\$ 60,679,033.37	\$ 69,088,474.16	\$ 66,695,398.80
Canadian Government Ry.....	40,939,945.76	41,275,314.84	44,803,045.84
Grand Trunk Pacific Ry.....	18,516,977.58	16,638,677.64	14,408,549.66
Total.....	\$120,135,956.71	\$127,002,466.64	\$125,906,994.30
DISTRIBUTION			
Freight.....	\$ 90,092,296.22	\$ 93,995,807.96	\$ 91,118,130.38
Passenger.....	18,726,207.02	21,200,196.85	23,671,588.51
Sleeping Car.....	1,566,298.99	1,740,506.05	1,414,009.24
Mail.....	2,093,918.83	2,028,131.81	1,091,300.05
Express.....	3,435,612.28	3,664,424.20	3,420,974.40
Miscellaneous.....	4,223,623.37	4,373,399.77	5,190,991.72
OPERATING EXPENSES			
Canadian Northern Ry.....	\$ 63,625,763.09	\$ 75,564,385.30	\$ 82,953,978.60
Canadian Government Ry.....	43,436,667.67	46,990,047.74	55,445,651.29
Grand Trunk Pacific Ry.....	22,809,843.99	20,668,369.51	24,543,063.60
Total.....	\$129,872,274.75	\$143,222,802.55	\$162,942,693.49
DISTRIBUTION			
Maintenance of way and structures.....	\$ 31,276,388.08	\$ 33,932,729.00	\$ 43,171,049.62
Maintenance of equipment.....	30,460,919.55	31,686,532.41	34,860,165.63
Traffic.....	2,882,449.17	2,557,949.95	2,460,061.28
Transportation—rail.....	60,470,754.33	71,770,225.98	76,856,894.48
Transportation—water.....	122,341.46	120,970.66	350,135.79
Miscellaneous.....	1,856,999.29	2,063,096.85	2,564,663.07
General.....	3,662,344.53	3,078,841.15	3,382,766.56
Transportation for Investment—credit.....	859,921.66	1,987,543.45	703,042.94
OPERATING DEFICIT			
Canadian Northern Ry.....	\$ 2,946,729.72	\$ 6,475,911.14	\$ 16,258,579.80
Canadian Government Ry.....	2,496,721.91	5,714,732.90	10,642,605.45
Grand Trunk Pacific Ry.....	4,292,866.41	4,029,691.87	10,134,513.94
Total.....	\$ 9,736,318.04	\$ 16,220,335.91	\$ 37,035,699.19
OPERATING RATIOS			
Canadian Northern Ry.....	104.85	109.37	124.38
Canadian Government Ry.....	106.10	113.84	123.75
Grand Trunk Pacific Ry.....	123.18	124.21	170.34
Total.....	108.10	112.77	129.41

Income Account for Years ended December 31, 1922 and 1921. Tax Accruals.

	1922	1921
Canadian Northern Railway System.....	\$ 1,077,433.16	\$ 1,191,890.84
Canadian Government Railways.....	23,426.91	35,743.87
Grand Trunk Pacific Railway.....	247,903.22	357,394.54
Canadian National Railways.....	\$ 1,348,763.29	\$ 1,585,029.25
Total Operating Deficit.		
Canadian Northern Railway System.....	\$ 4,024,162.88	\$ 7,667,801.98
Canadian Government Railways.....	2,520,148.82	5,750,476.77
Grand Trunk Pacific Railway.....	4,540,769.63	4,387,086.41
Canadian National Railways.....	\$ 11,085,081.33	\$ 17,805,365.16
Non Operating Income.		
Canadian Northern Railway System.....	\$ 3,700,934.41	\$ 3,119,349.72
Canadian Government Railways.....	1,074,548.74	679,577.30
Grand Trunk Pacific Railway.....	792,155.62	863,185.83
Canadian National Railways.....	\$ 5,567,638.77	\$ 4,662,112.85
Deductions from Gross Income.		
Canadian Northern Railway System.....	\$ 1,275,797.98	\$ 1,011,242.14
Canadian Government Railways.....	1,465,057.85	1,255,901.00
Grand Trunk Pacific Railway.....	1,603,746.21	801,667.77
Canadian National Railways.....	\$ 4,344,602.04	\$ 3,068,810.91
Total Deficit Before Fixed Charges.		
Canadian Northern Railway System.....	\$ 1,599,026.45	\$ 5,559,694.40
Canadian Government Railways.....	2,910,657.93	6,326,800.47
Grand Trunk Pacific Railway.....	5,352,360.22	4,325,568.35
Canadian National Railways.....	\$ 9,862,044.60	\$ 16,212,063.22
Fixed Charges.		
CANADIAN NORTHERN RAILWAY SYSTEM.		
Interest due Public.....	\$ 16,915,174.26	\$ 17,595,707.51
Interest due Government.....	15,796,371.96	13,224,208.27
GRAND TRUNK PACIFIC RAILWAY.		
Interest due Public.....	\$ 2,341,266.96	\$ 3,977,447.36
Interest due Government.....	2,200,131.75	1,535,474.22
Interest due Receiver's Certificates.....	1,907,247.13	1,702,886.64
Interest due Grand Trunk Railway.....	2,081,060.25	2,742,191.60
Canadian National Railways.....	\$ 8,529,706.09	\$ 9,957,999.82
Canadian National Railways.....	\$ 41,241,252.31	\$ 40,777,915.60
Total Deficit		
Canadian Northern Railway System.....	\$ 34,310,572.67	\$ 36,379,610.18
Canadian Government Railways.....	2,910,657.93	6,326,800.47
Grand Trunk Pacific Railway.....	13,882,066.31	14,283,568.17
Canadian National Railways.....	\$ 51,103,296.91	\$ 56,989,978.82

Train Traffic Statistics—For Twelve Months ended December 31st, 1922, 1921 and 1920.

	1920	1921	1922
TRAIN MILEAGE.			
Passenger trains.....	13,322,587	12,701,319	12,237,746
Freight trains.....	20,985,345	18,649,988	18,472,628
Mixed trains.....	3,496,965	3,317,850	2,945,234
Total train miles (excluding special train miles).....	37,807,897	34,669,157	33,655,608
CAR MILEAGE.			
Passenger.....	55,744,463	58,736,090	60,110,284
Coaches, parlor, sleeping and dining cars.....	38,149,446	34,306,139	32,406,622
Baggage, mail, express, etc.....	93,893,909	93,042,229	92,516,906
Total passenger train car miles.....	420,074,960	389,521,482	424,635,893
Freight.			
Loaded freight car miles.....	168,809,115	211,428,758	219,857,824
Empty freight car miles.....	21,224,990	20,584,200	19,682,500
Caboose miles.....	610,109,065	621,534,440	664,176,217
Total freight train car miles.....	658,558,555	652,547,198	664,176,217
Passenger cars per passenger traffic train mile.....	5.58	7.05	7.26
Freight cars per freight traffic train mile.....	24.92	28.81	31.75

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES:

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number.
Minimum order—\$1.
Rates under other headings and for display advertisements on application.

Modern Marine Machinery

Automatic Steam Towing Machines, Ship Windlasses, Cargo and Deck Winches, Steam Capstans, Dock Gypsies, Steering Engines, Hydraulic Hoists, etc.

Manufactured by the

CORBET FOUNDRY & MACHINE CO., LIMITED, Owen Sound, Canada.

THE TORONTO, HAMILTON AND BUFFALO RAILWAY COMPANY

Notice is hereby given that the Annual General Meeting of the Shareholders of this Company, for the election of a Board of Directors, and for the transaction of such other business as may lawfully be brought before the meeting, will be held at the office of the company, corner James and Hunter Streets, in the City of Hamilton, Province of Ontario, on Tuesday, June 5th, 1923, at 11 o'clock in the forenoon.

EDWARD F. STEPHENSON,
Secretary.

NOTICE

In conformance with the Canadian Patent Act, we are prepared to accept and fill orders for the Standard Car Truck Company's side bearing covered by Canadian Patent No. 208873.

For prices and full particulars, apply to the Canadian Appliance Co., New Birks Bldg., Montreal, Agents for Standard Car Truck Co., Chicago.

Transportation Meetings, Etc., in 1923.

The names of persons given below are those of the secretaries, unless stated otherwise:—

June 13.—Railway Accounting Officers' Association, Richmond, Va. E. R. Woodson 1116 Woodward Bldg., Washington, D.C.

June 13 to 15.—American Association of Railroad Superintendents, Kansas City, Mo. J. Rothschild, 400 Union Station, St. Louis, Mo.

June 18.—American Train Dispatchers' Association, Chicago, Ill. C. L. Darling, 1310 Mallers Bldg., Chicago, Ill.

June 20 to 22.—American Railway Association, Mechanical Division, Chicago. V. R. Hawthorne, 431 South Dearborn Street, Chicago, Ill.

June 25.—American Society for Testing Materials, Atlantic City, N.J. C. I. Warwick, 1215 Spruce Street, Philadelphia, Pa.

June 27 to 30.—Canadian Electric Railway Association, Toronto. D. N. Gill, 248 Albert Street, Ottawa.

September.—Travelling Engineers' Association, Chicago, Ill. W. O. Thompson, 1177 East 98th Street, Cleveland, Ohio.

Sept. 4 to 7.—International Railway General Foreman's Association, Chicago, Ill. W. Hall, 1061 West Wabash Ave., Winona, Minn.

Sept. 17.—American Association of Passenger Traffic Officers, Montreal. W. C. Hope, Central Rd. of New Jersey, 143 Liberty Street, New York, N.Y.

Sept. 18 to 20.—Roadmasters' and Maintenance of Way Association, Chicago, Ill. P. J. McAndrews, Chicago & Northwestern Ry., Sterling, Ill.

NOTICE.

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signaling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the fact that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.

CANADIAN PACIFIC RAILWAY COMPANY Dividend Notice

At a meeting of the Board of Directors held today a dividend of two and one-half per cent. on the Common Stock for the quarter ended 31st March last, being at the rate of seven per cent. per annum and in addition three per cent. per annum from Special Income Account, was declared payable on 30th June next to Shareholders of record at 3 p.m. on 1st June next.

By order of the Board,

ERNEST ALEXANDER,
Secretary.

Montreal, 2nd May, 1923.

THE VICTORIA ROLLING STOCK & REALTY CO. OF CANADA, LTD.

NOTICE is hereby given that a dividend of 6% on the paid-up capital stock of the Company for the six months ended May 31, 1923, has been declared payable June 1, 1923, to the shareholders of record as of the 31st of May, 1923.

By order of the Board,
G. T. CHISHOLM, Secretary.
Toronto, May 26, 1923.

Oct. 8 to 12.—American Electric Railway Association, Atlantic City, N.J. J. W. Welsh, 8 West 40th Street, New York, N.Y.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

Transportation Association, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Bureau of Explosives—A. H. McMullan, Inspector, lines east of Port Arthur, 354 New Union Station, Toronto.—D. W. McNabb, Inspector, lines west of Port Arthur, C.P.R. station, Winnipeg.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Electric Railway Association—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Zoyd Bldg., Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Tenders for Railway Construction. The Nipissing Central Railway Company.

North Bay, Ont.,
May 23, 1923.

SEALED TENDERS for the works (other than steel work for bridges) necessary to the complete construction of the roadbed, ready for the ties and rails, and the tracklaying, ballasting and fencing, upon approximately twenty-five miles of a branch of the Nipissing Central Railway, extending from Swastika on the Timiskaming & Northern Ontario Railway, to a point at or near Larder Lake, will be received at the office of the Secretary-Treasurer of the Company, North Bay, until twelve o'clock (noon) of the 12th day of June, 1923.

On receipt of a request in writing, a copy of each of the following documents:

Instructions for Bidders,
Form of Tender,
Specifications,
Form of Contract,

will be furnished to intending bidders, at the office of the Chief Engineer of the Company, North Bay, where plans and profiles pertaining to the work may also be seen.

The right is reserved to reject any or all bids.
S. B. CLEMENT,
Chief Engineer.

Shore Position Wanted.

Well educated ex-Merchant Service Officer, Scotch, forty, (fully certificated, desires position of trust on shore. Reason, eyesight. Twenty-six years sea experience, steam and sail; well versed in all matters pertaining to ships, cargo work, drydocking, etc.; accustomed to directing oriental labor; speaks Hindustani and Malay. Best references. Go anywhere. Box 67, Canadian Railway and Marine World.

The Annual General Meeting of the Shareholders of The Canada Southern Railway Company, for the election of Directors, and other general purposes, will be held at the Company's Head Office, in the City of St. Thomas, Ontario, on Wednesday, the 6th day of June, 1923, at 11 o'clock in the forenoon.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke St., Montreal. Meetings at Montreal 2nd Tuesday, each month, except June, July and August, at 8.30 p.m.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 Canadian National Rys. General Office, Montreal.

Hydro Electric Railway Association of Ontario—T. J. Hannivan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Punnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorfner, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Building, Winnipeg, Man.

Ottawa Car Manufacturing Co., Ltd.

301 Slater St., Ottawa, Ont.

Electric City and
Interurban
Passenger Cars

Electric Express
Cars and
Locomotives

Sprinklers and
Work Cars

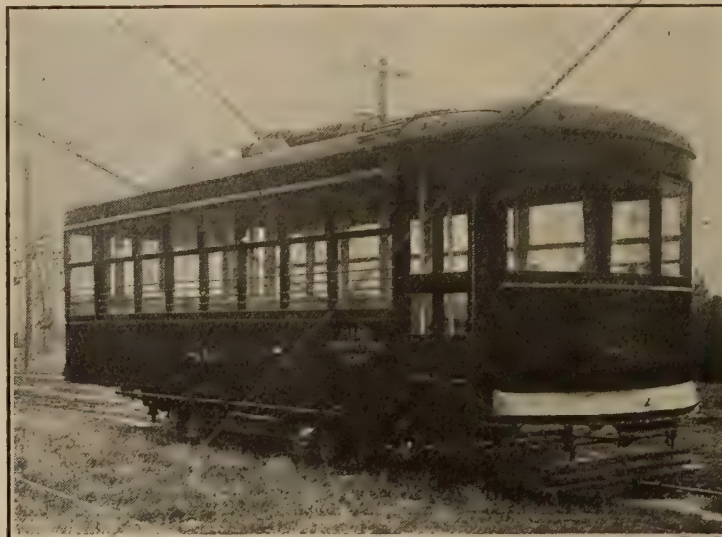
Car Seats

Car Curtains

Bronze Car
Trimmings

Bronze Motor
Bearings

Bronze Axle
Bearings



One Man Safety Car.

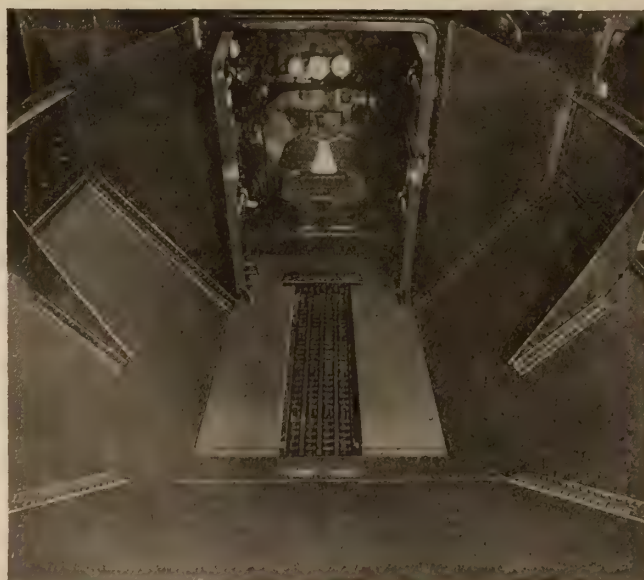
See our Exhibit
at Canadian
Electric Railway
Association
Convention
in Toronto,
June 27-30.

We solicit
inspection of cars
manufactured
by us for
Toronto
Transportation
Commission.

Brass Foundry and Forgings

Our Foundry is one of the largest and best equipped, and one of the most modern in the Dominion.

We are in position to machine castings and forgings of every description.



ELVIN Mechanical Stokers

SIMPLICITY OF CONTROL
FUEL ECONOMY
LIGHT WEIGHT
A ROOMY CAB
NO TANK SLIDE PLATES

*Manufactured in Canada by
Montreal Locomotive Works, Ltd.*

for

The Elvin Mechanical Stoker Company
50 Church Street New York, N.Y.

The Imperial Guarantee and Accident Insurance Co. of Canada

Imperial Protection. Accident and Sickness Insurance. Guarantee Bonds.
Plate Glass and Automobile Insurance. Automobile Fire Insurance.

A Strong Canadian Company

Head Office, 20 Victoria St., Toronto, Ont.

Branch Offices:

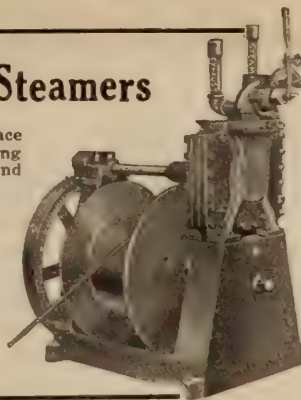
Yarmouth, N.S. Montreal, Que., Canada Life Bldg. Winnipeg, Man., Union Trust Bldg. Calgary, Alta., Canada Life Bldg. Vancouver, B.C., Union Bank Bldg.

Dake Snub Line Winch for Canal Steamers

To handle the heavy wire snub line. Takes up very little deck space and drum holds 120 ft. 1 1/4 in. wire. For a safety and labor-saving device it has no equal. A money-saver for the vessel owner and a godsend for the master in canalling his vessel through the St. Lawrence and Welland Canals. Send for special booklet and price. We also make a full line of Marine Machinery. Complete Catalogue of Dake Machinery on request.

DAKE ENGINE CO.
Grand Haven - Michigan

Canadian Office: 45 Adelaide St. East, Toronto, Ont.
CAPT. WM. J. STITT, Can. Sales Manager.



14 Contract Car Shops

in Chicago and its immediate vicinity use exclusively for Car Repairing purposes the

No. 29 Simplex Car Jack

As Contract Car Shops exist and prosper because they can build or repair cars cheaper than a railroad can, it is evident that their management, methods and tools are the secrets of their success.

It can be truthfully and broadly stated that:

Every railroad, contract shop and industry needs the modern Simplex Jacks to insure decreased man hours and costs.

Templeton, Kenly & Co. Ltd.

Established 1899

131 Front St. W., Toronto

Sole manufacturers of the

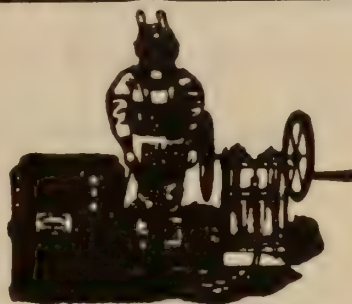
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R. G. DUN & CO.

The Mercantile Agency
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Established in Canada 1856

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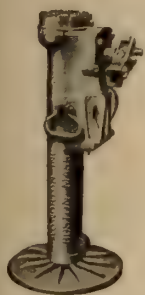
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Diving Apparatus

For Sale or Hire

Brass Founder and Coppersmith
13-15 Concord St., Montreal.



Norton Jacks

are the highest
grade lifting Jacks
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Made by
A. O. NORTON
Limited
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IT PAYS TO U - E

Woolery Ball Bearing Engines
and Railway Motor Cars

They stay in service the year round, have big reserve power, are Light to handle and require fewer Repairs than any other Engines on the market.

New 1923 Ball Bearing Models
Just Out

Manufactured by
Woolery Machine Co., Minneapolis, Minn.
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Inspection Cars
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Bearings
Engines, Power Decks and Safety
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SEND FOR DESCRIPTIVE BULLETINS

Fairmont Railway Motors, Inc., 39 Charlotte St., Winnipeg

BALL BEARING MOTORS AND RAILWAY MOTOR CARS

Here's Real News

The Hydro Electric Power Commissioners of Ontario have appointed a Sales Syndicate to advantageously liquidate all the

Equipment and Supplies

which can be released from the

Queenston-Chippawa Development

The majority of this Equipment—recently released—was purchased new and used only on the above undertaking. This is a splendid opportunity to secure really high grade, modern Machinery-Accessories and Supplies at prices that are right.

Our amended Stock List is now being prepared and we will be very glad to forward your copy, upon request. Time spent consulting this list will be time well spent. Someone will profit handsomely as those who purchase any of this "special offering" which is available are going to make one of the best purchases in their career.

We give below a general idea of what class of equipment is available.

Steam and Electric Shovels—Steam and Electric Locomotives—Air Dump Cars—Air Compressors—Channellers—Conveyors—Drills—Motors—Concrete Mixers—Concrete Cars and Auxiliary Equipment—Electric and Steam Hoists. In fact—almost everything you might require.

Inspection can be made at
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Our Representatives
will give every service

Put your name on our mailing list at once for complete "Sales Inventory"

Hydro Salvage Syndicate

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Niagara Falls, Ont.

Operated by

Canadian Equipment Co. Limited
Montreal

and

F. H. Hopkins & Co., Limited
Toronto and Montreal



THE CANADIAN NATIONAL RAILWAYS, traversing the nine Provinces of the Dominion of Canada, serve the Federal and each of the Provincial capitals, and link up the great agricultural and industrial areas with distribution centres and seaports on the Atlantic and Pacific.

The finest sporting and resort territories are reached, including Jasper National Park and other resorts in the Canadian Rockies; Algonquin Park, Muskoka Lakes, Georgian Bay, Lake of Bays, Kawartha and Rideau Lakes, Timagami, Nipigon and Minaki, which have an unlimited appeal to the Tourist.

The Canadian National route through the Rockies skirts Canada's highest peaks at the easiest gradient and lowest altitude of any transcontinental route.

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ENAMELED IRON SIGNS

The ideal signs for

Steam and Electric Railways,
Telegraph,
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Supplied in any sizes and colors, for station names, door signs, route numbers, etc. Guaranteed not to fade or be affected by the weather in any way.

Acton Burrows

Enameled Iron Signs

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The Jackson Electric Tie Tamper

Manufactured at Windsor, Ont.

Is now available to Canadian Steam and Traction lines at the same price prevailing in the States.

Write for particulars relative to this tool now used by the largest Railways in the United States.

Electric Tamper & Equipment Co.

Ludington, Mich., U.S.A.

THE one sure way to keep in touch with Canadian transportation activities, is a regular subscription to Canadian Railway & Marine World.

Canadian Railway and Marine World,
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Please put my name on your subscription list. \$2 is enclosed. Will mail \$2 on receipt of bill. This order may be discontinued at any time after the first year by written notice.

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more than TWICE as many as all other
Bascul and Lift Bridges COMBINED.
Consult us before adopting plans or under-
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ELECTRICAL—CIVIL—MECHANICAL
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Electrification of Steam Railroads.
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or special design, apply toThe Canadian Office and School Furniture Co.
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Preston Ontario**Bureau of Canadian Information**

THE Canadian Pacific Railway, through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In the Reference Libraries maintained at Montreal, Chicago and New York are complete data on natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added. No charge or obligation attaches to this service. Business organizations are invited to make use of it.

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LONDON, ENGLAND**REINFORCED BRAKESHOES**OUR BRAKE SHOES decrease main-
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Winnipeg—150 Princess St. Vancouver—609-613 Bank of Nova Scotia Bldg.**IMPERIAL BANK OF CANADA**

Capital Authorized.....	\$10,000,000
Capital Paid Up.....	7,000,000
Reserve Fund.....	7,500,000

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Letters of Credit, Travellers' Cheques and Drafts issued, available in all
parts of the world.

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CANADIAN BRONZE LIMITEDBrass Wearing Parts for Locomotives. Journal Bearings for Freight and
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DUPONT-SIMPLEX STOKER

KILL
LAST AD.

THE development of mechanical stokers for locomotives bears an important and necessary relation to fuel operating economy.

Increased economy under present conditions is a paramount issue in railroad management.

It is the purpose of the present management of this company to give users of the duPont Simplex Stoker an efficient device and expert and reliable service in the field.

The duPont Simplex Stoker merits your personal investigation.



PRESIDENT

STANDARD STOKER COMPANY, INC.

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McCormick Bldg., Chicago, Ill. duPont Bldg., Wilmington, Del
Foundries and Works, Erie, Pennsylvania.



Toronto's New Cars Successfully Sell Service

Because they are equipped to please the public.

KEYSTONE CAR SIGNS clear and legible day and night, make it easy to pick out the right car at a good distance, and to tell just where it is going.

SAFETY CAR LIGHTING makes the interior bright, cheery and inviting, and permits comfortable reading.

FARADAY CAR SIGNAL SYSTEMS offer a sure and most convenient means of signalling for a stop.

PEACOCK STAFFLESS HAND BRAKES give security against accident from failure of air brakes. They stand by with ample power to hold the car under any circumstances.

RICO ANTI-CLIMBERS by preventing telescoping in case of collision, afford an additional safeguard against injury and damages.

The steady growth in passenger receipts on Toronto lines can undoubtedly be credited in part to the favorable impression made by this equipment.

Operating costs on any Electric Railway can be kept down and efficiency kept up by the use of the Lyman Line of Equipment briefly described on the next page.

LYMAN TUBE & SUPPLY CO., LIMITED
 Montreal Toronto Winnipeg Vancouver

The LYMAN LINE

at the Toronto Convention

You will be very welcome at our Convention Booth, where, if you are interested, we can talk about

DAYTON RESILIENT TIES

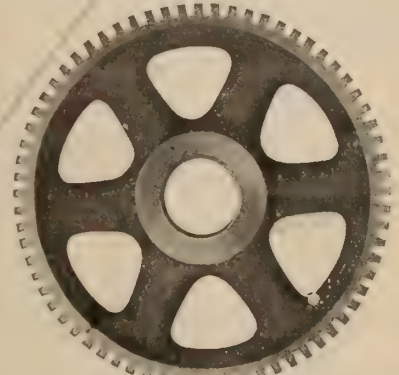
They cushion traffic Shocks—save foundation, pavement and rolling stock—reduce first cost and upkeep.

RICO VACUUM OILERS

By providing a constant, controlled oil flow and entirely excluding dirt, they greatly increase the life of journals. Moreover, they save waste and nine-tenths of the work of oiling.

NUTTALL HEAT TREATED GEARS and PINIONS

"BP" Forged Gears and Pinions combine hardness with exceptional toughness and strength. They practically never break, and are guaranteed to give $3\frac{1}{2}$ times the life of untreated gears in identical service. Nuttall Helicals are "the last word."



Nuttall "BP" Gear

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The window Fixtures, Trap Doors and Fixtures made by O. M. Edwards Co. have for years ranked first in design and finish.

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The surest cure for commutation troubles.

GARTON-DANIELS LIGHTNING ARRESTERS

Give positive protection to power lines, power house equipment and rolling stock.

SEGUR REPAIR PARTS

Segur Coil Winders, Spreaders, Tapers and other tools are wonderful savers of time and expense in upkeep of motors and generators.

LYMAN IDEAL TROLLEY WHEELS

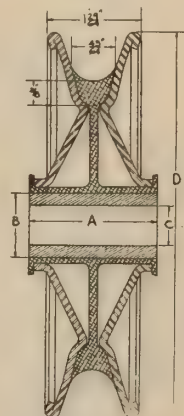
Light, perfectly balanced, low in cost, high in mileage.

SHELBY SEAMLESS TROLLEY POLES

Scientifically reinforced and tapered, they give maximum strength and elasticity, with minimum weight.

SAMSON "SPOT" TROLLEY CORD

You have only to see and handle this cord to be convinced of its superiority. Users have proved it.



Lyman "Ideal" Trolley Wheel



The "LYMAN LINE" includes no "second bests".

LYMAN TUBE & SUPPLY CO., LIMITED

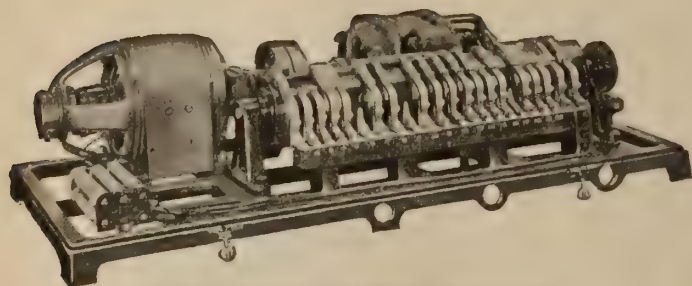
Montreal

Toronto

Winnipeg

Vancouver

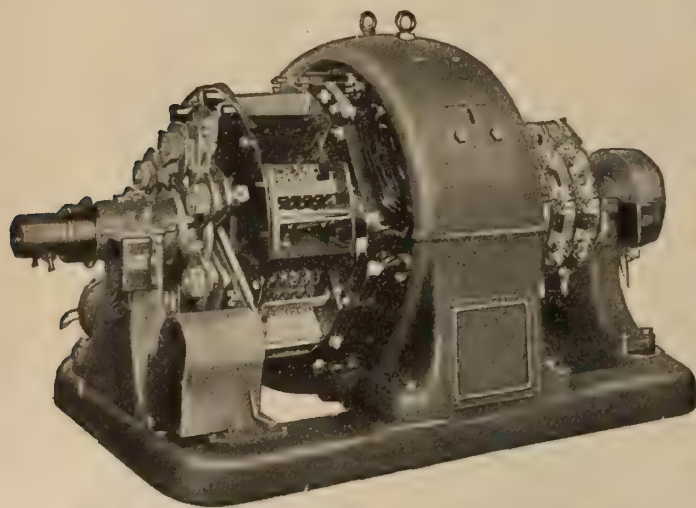
Automatic Means Economic



MOTOR DRIVEN MASTER CONTROLLER

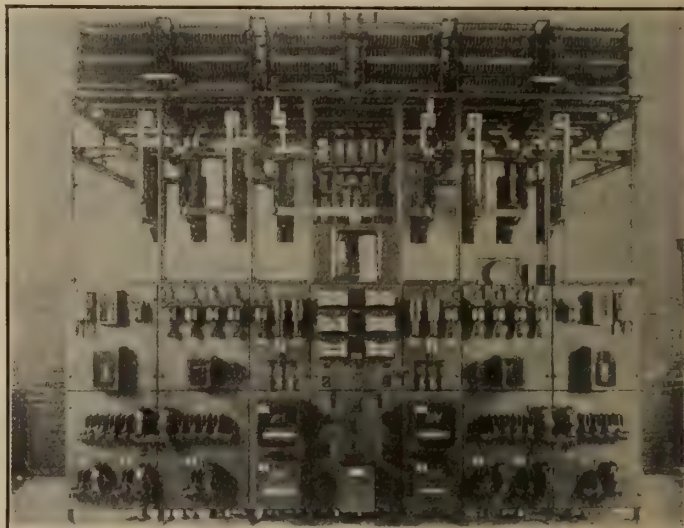
The Motor Driven Master Controller can be considered as the "brains," with the contact-making voltmeter and the underload relay as the "eyes" of an Automatic equipment.

The voltmeter registers the load demand and starts the controller. The controller then fixes the sequence of events and closes or opens the various control devices in the pro-



SYNCHRONOUS CONVERTER—AUTOMATIC OPERATION

IN Electric Railway Operation the Automatic Substation effects a great saving in labor, cuts down transmission losses and raises schedule speeds.



SWITCHBOARD FOR AUTOMATIC CONTROL OF TWO SYNCHRONOUS CONVERTERS

per order and at the proper time during the starting operations. It serves at once electrically and chronologically to interlock the various breakers, contactors, relays, etc.

After the machine has been delivering load and the economical demand ceases, the underload relay acts to shut down the station and advance the controller to its initial position ready for the next start.

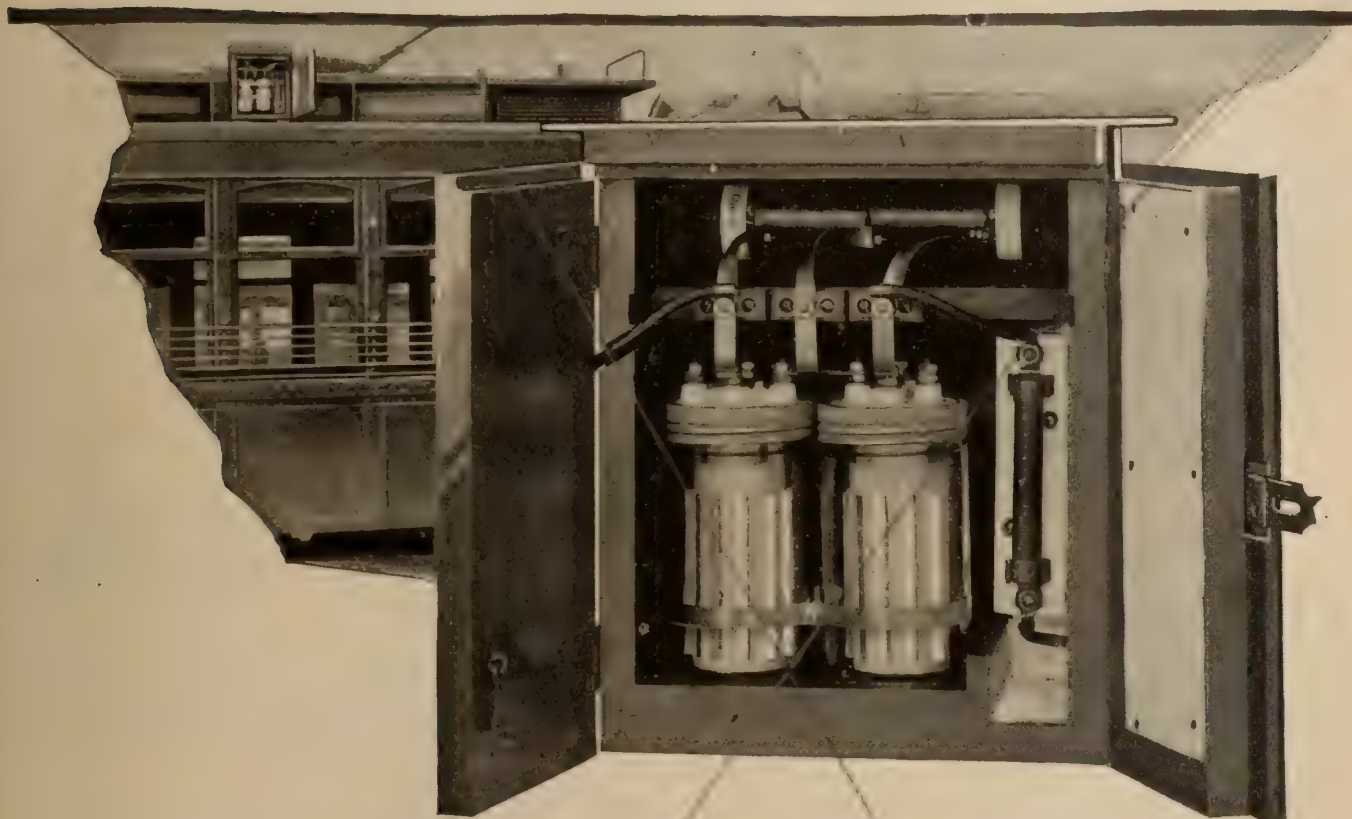
See our exhibit at the Canadian Electric Railway Association Convention,
Toronto, June 27, 28, 29, 30.

Canadian General Electric Co., Limited

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Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Sherbrooke, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.

*Do you want to prevent
lightning losses?*



**Protect your service and
cut down repair bills.**

Fifty electric railways having 5,000 cars equipped with C.G.E. D-C aluminum lightning arresters had only forty-three cases of damage from lightning during the past year—an average of less than one a railway and one every hundred cars.

In some cases the damages were slight—controller blow-out coils, brush-holders, etc. In some cases no damages had been suffered in two or three years, or longer.

Study these data and then study your maintenance records. If you don't know what lightning is costing you, you can't tell what these arresters will save you, but one thing is certain: the C.G.E. D-C aluminum arrester will prevent practically all damage to car equipments from lightning.

*See our exhibit at the Canadian Electric Railway Association Convention,
Toronto, June 27, 28, 29, 30.*

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*This Mark is Your
Guarantee. Look
for it on Your
Wrenches, Taps,
and Dies.*

This "Little Giant" Is SOME Wrench!

It is the toughest, simplest, most efficient wrench ever offered to the mechanic. That sounds like a big order, but go ahead and read our story, order a few for trial, and we know you'll never be satisfied with anything else.

Barked knuckles and raw tempers have been eliminated in shops using the LITTLE GIANT Pipe Wrench.

The end opening jaw design and extra length handle give a leverage that will turn the tightest nuts, bolts and pipes with less muscular energy.

The ease with which it handles the tight-corner, and close

overhead jobs puts it far in the lead when it comes to all around utility.

There are two drop forged, heat-treated steel parts and a nut in the make up of the LITTLE GIANT. They are practically indestructible. The double sets of teeth on the smaller sizes and the quadruple sets on the larger ones assure a life of from two to four times that of any other wrench you can buy.

Service life is a big factor, but "getting it done in a hurry" is often just as important. The LITTLE GIANT gives both service and speed.

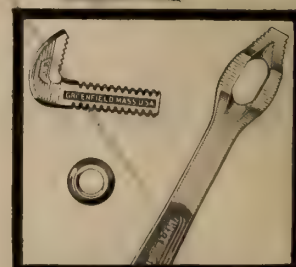
*Only
Three
Parts*

Ask your supply house or write direct to us.



London Office: Greenfield Tap & Die Corp., 139 Queen Victoria St., London, E. C. 4.

GTD Screw Plates, Taps, Dies, Reamers, Gages,
Pipe Tools, Twist Drills, Machine Tools.



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Proprietors

(REID NEWFOUNDLAND COMPANY LIMITED)

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610 Feet Graving Dock

WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT
DEEP WATER PIER

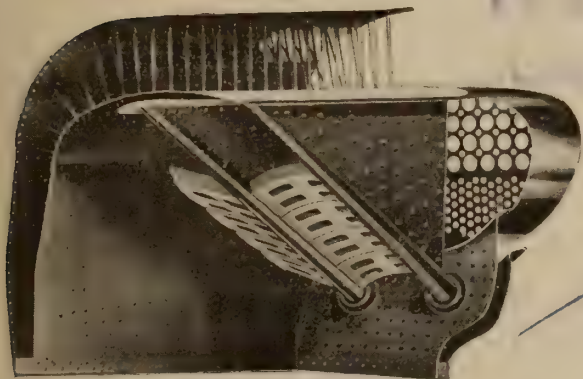
SHOPS EQUIPPED WITH MODERN
MACHINERY

PNEUMATIC TOOLS, ELECTRIC AND
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IN OPERATION

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IMPROVING UNDER-BOILERED LOCOMOTIVES



The Heart of the Locomotive

LOCOMOTIVE hauling capacity is often limited by the ability of the boiler to make steam.

In removal of this limit lies the opportunity for a large increase in earning power from every locomotive.

Thermic Syphons accomplish this by increasing steaming capacity from 10 to 20 per cent. Thus, an increase in power equivalent to many new locomotives is made immediately available.

This increased power can be readily added without delaying the locomotive at its regular shopping period. Start a Syphon program now.

LOCOMOTIVE FIREBOX COMPANY

Marquette Building, Chicago, Illinois

THE HOLDEN COMPANY, LIMITED

Montreal Toronto Winnipeg Vancouver

International Steel Twin Ties



London Street Railway—Sept., 1922

Remember That

We not only save you excavation and concrete, but prolong the life of the joints by placing large bearing plates under them, and our clips hold the rails in perfect lineament. In many cases the rails last from forty to fifty per cent longer. Does this mean anything to you?

Sarnia Bridge Co., Ltd.
Sarnia, Ont.

See Our Exhibit C.E.R.A. Convention, Toronto, June 27-30th.

CARTER'S

W-Z-C-Z-M-C

It Defies Rust!

Carter's Genuine Dry Red Lead is the most dependable rust preventative for Metal work of every description.

When mixed with pure linseed oil Carter's flows on freely and covers more space than other Red Leads.

Write for prices of this All-Canadian product. The complete Carter line includes Genuine Dry White Lead, Genuine Orange Lead and Litharge.

The Carter White Lead Co. of Canada, Limited
91 Delorimier Avenue, Montreal

DRY RED LEAD

FLANNERY

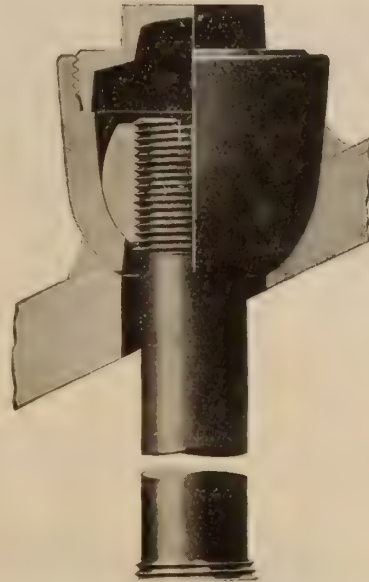
Time Is Proving F.B.C. Welded Flexible Staybolts

They have been on the market long enough to convince their first users of their worth.

No road has reverted to the threaded type sleeve because of dissatisfaction with the welded sleeve, once having installed it.

This is your assurance, as well as ours, that this assemblage is living up to our claims of being stronger, more efficient and more economical than any other type on the market.

May we advise with you regarding a trial installation of the F.B.C. Welded Flexible Staybolt assemblage?



FLANNERY BOLT COMPANY

VANADIUM BUILDING

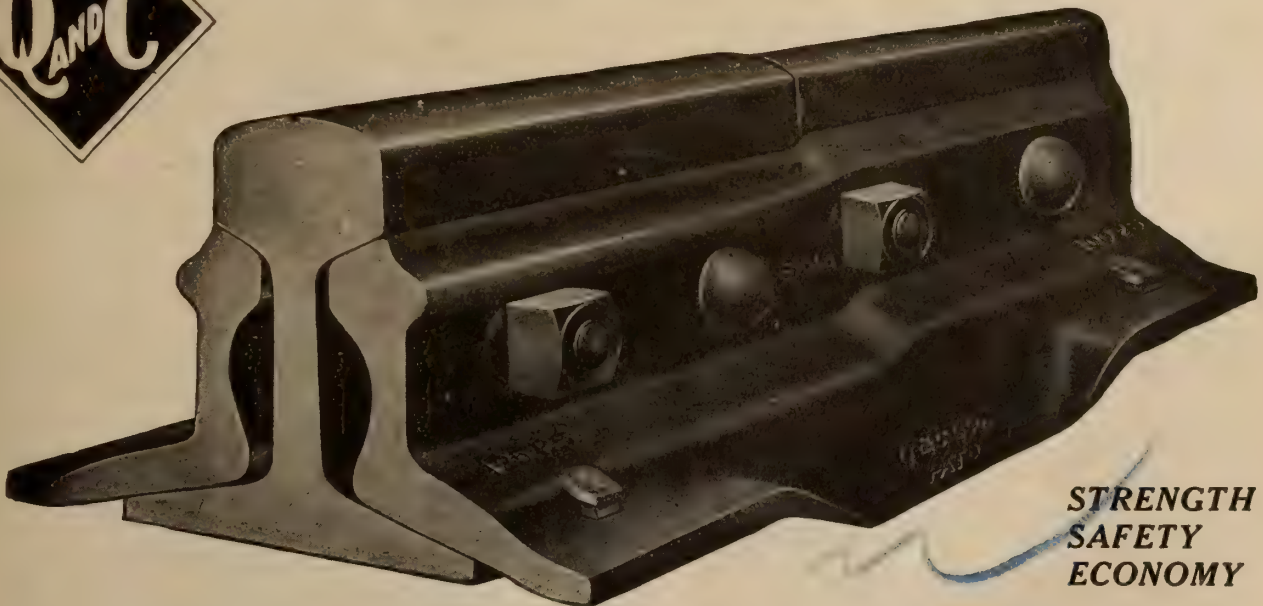
PITTSBURGH - - - PA.

*Manufactured and sold in Canada
by the Canadian Allis-Chalmers,
Limited, Toronto.*

FLEXIBLE STAYBOLTS



Q & C Rolled Steel Step Joints



**STRENGTH
SAFETY
ECONOMY**

The General Supply Co. of Canada, Limited

356 Sparks Street, Ottawa

Montreal

Toronto

Vancouver

North Bay

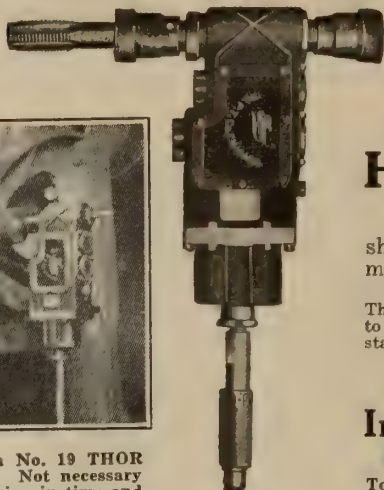
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NAME TO
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Repairing link cradles with a No. 19 THOR Reversible Close Corner Drill. Not necessary to remove the link cradles. Saving in time and labor over 80%.



**The Right
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There is a THOR for every operation in railroad work and shipbuilding—one particularly adapted to the individual requirements of each operation.

The superior performance of THOR Tools is, therefore, to be expected. The extra careful workmanship in THOR Tools enables them on job after job to deliver the goods far beyond expectations. Consequently, you find THOR, standard equipment in the leading plants today.

Buy your full supply of THOR Tools now. Immediate delivery.

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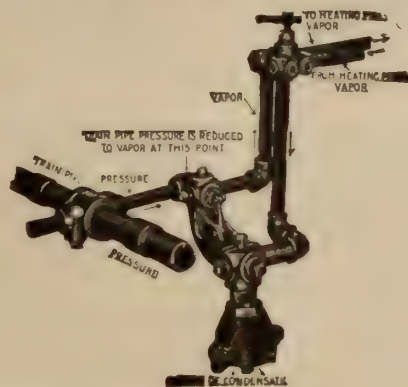
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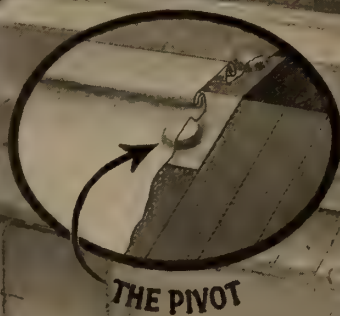
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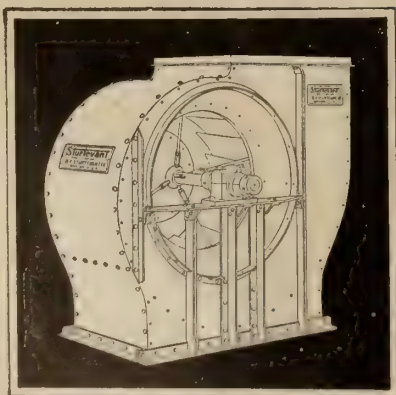
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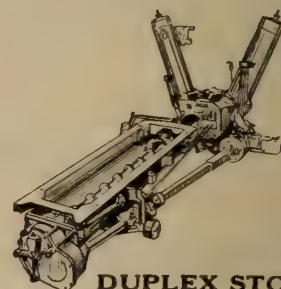
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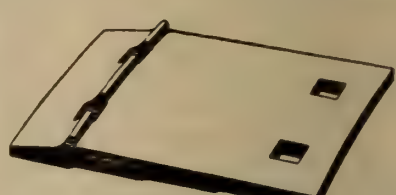
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Canada Iron Foundries Ltd.

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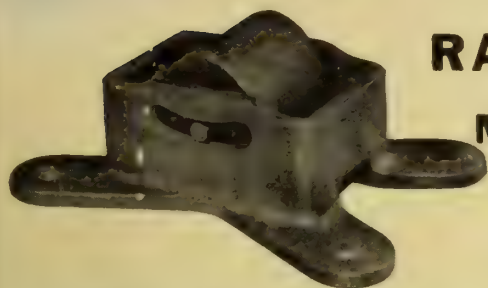
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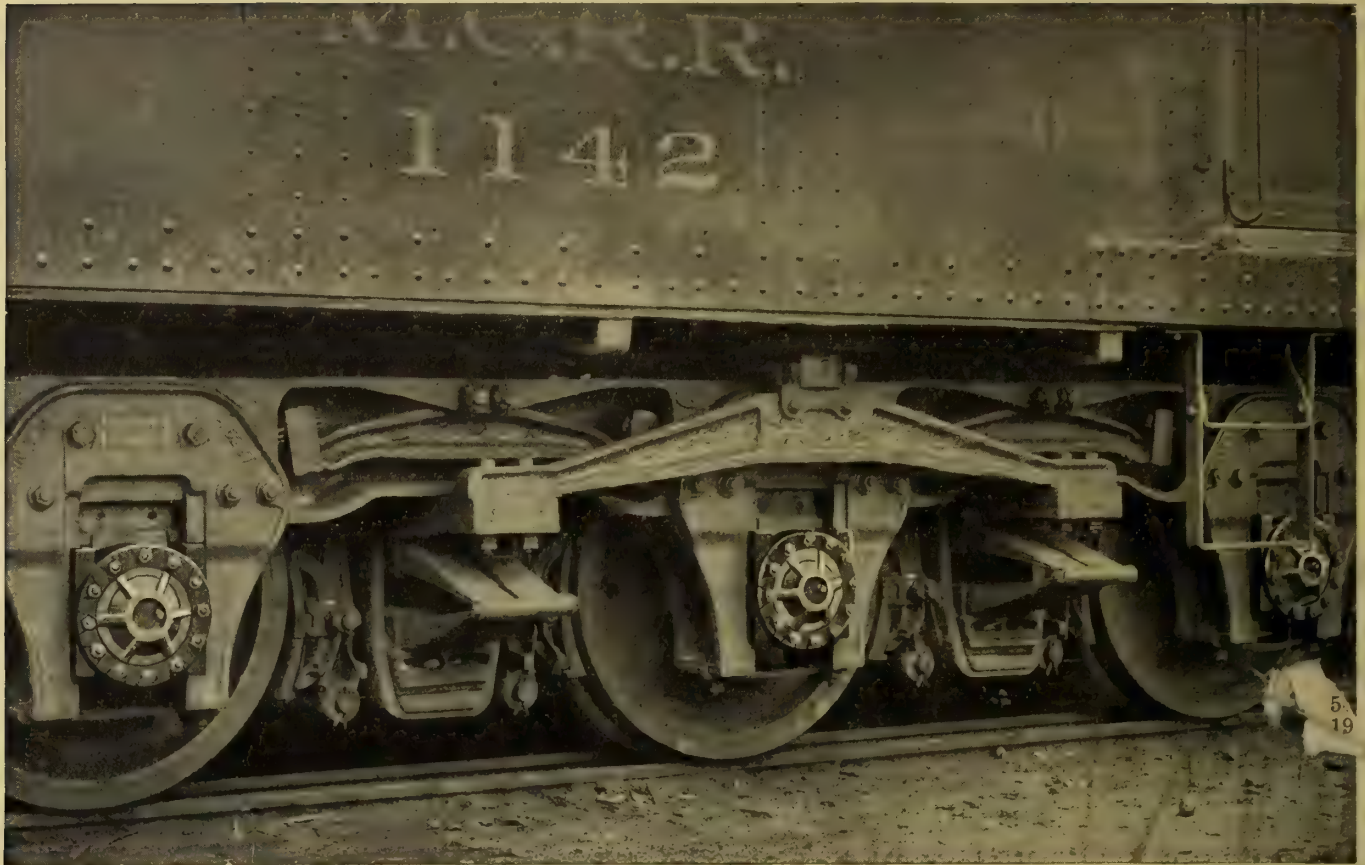
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383 Dorchester Ave., SOUTH BOSTON, 27 Mass.

Canadian Representative: Canuck Supply Co., Ltd., 371 Aqueduct St., Montreal, P. Q.



Friction Negligible

**KILL
LAST AD**
IF friction bearings did not generate heat there would be no hot boxes. And if there were no hot boxes railroads would be saved millions of dollars every year.

Stafford Roller Bearings reduce journal friction 90%—consequently they do not get hot. The snow which gathered around the journal of this car (above), while it was in daily service, remained there;

it did not melt away, although the weather was between 20 and 30 degrees above zero.

Besides eliminating hot boxes, the Stafford Roller Bearing reduces lubrication cost to the vanishing point and does away with all purchase of journal box supplies.

Stafford Roller Bearings—Never run hot—Never “freeze up”—Guaranteed three years.

STAFFORD ROLLER BEARING CORPORATION

LAWTON MICHIGAN

“IT ROLLS THE FRICTION AWAY”

marked

Canadian Railway AND Marine World

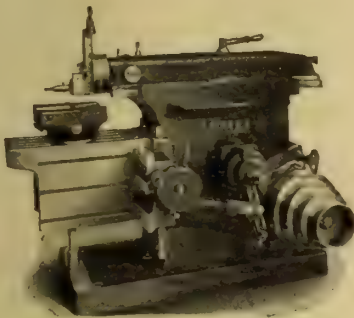
Founded in 1898 by Acton Burrows.

Number 305.

Index to contents pg. 339.

TORONTO, CANADA, JULY, 1923

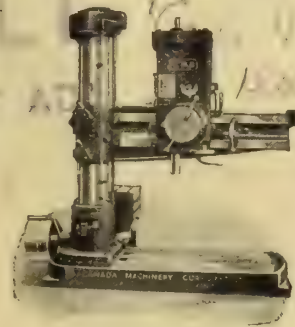
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Subscription Rates



26" x 30" Back Geared Crank Shaper



MACHINE TOOLS



4' Plain Radial Drill

give greater value for every dollar invested in them. They are built from the finest material available under careful supervision, and each machine is given a rigid test before shipment.

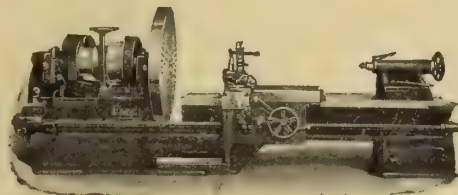
Long service, accurate production and genuine satisfaction are secured from every C.M.C. tool.

We build Engine, Gap, Coach Wheel, Driving Wheel and Double Axle Lathes, Planers, Punches and Shears, Shapers and Presses

Let us figure on your requirements.



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26" x 46" x 12" Quick Change Gap Lathe

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NEW YORK CHICAGO ST. LOUIS



Economy Cast Steel Draft Arms

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We have the largest stock of propeller patterns in Canada—and all propeller repair work is especially rushed to avoid costly "tie-ups." For new propellers, or blades, or complete replacements, wire or 'phone us.

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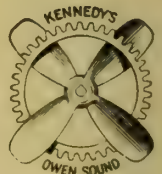
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Service shows the most successful car roof to be the

All Steel Dry Lading Roof

which made possible the following specifications:

No. 1. That should be weather-proof under all conditions, also rust-proof, fire-proof and burglar-proof.

No. 2. That should not require maintenance for at least ten years.

No. 3. That should be of low deadweight and give the car a low center of gravity.

No. 4. That should lessen strain on the superstructure of the car when the car is in motion.

No. 5. That should strengthen, rather than detract, from the strength of the car frame.

No. 6. That should give the greatest interior capacity and the lowest clearance limits.

No. 7. That should be flexible enough to conform to every service condition of the car.

No. 8. That should be possible to use again on the same or another car, even in case of partial or total destruction of the rest of the car by fire or wreck.

No. 9. That should not require roofing boards.

No. 10. That should be of low first cost.

No. 11. That should permit of inspection on the part of any shipper by merely closing the doors of the car and if no rays of light are seen through the roof, the shipper to consider it a weather-tight roof.

No. 12. That should be so constructed that the carlines, purlines and ridge, tie the sides and ends of the car together firmly, so that the weather-proof roof has only the one duty of protecting the contents of the car from the elements.

HUTCHINS CAR ROOFING CO., LTD.

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For Repairing Broken Locomotive Frames

If a composite statement were prepared from the scores of reports received weekly from over 500 Railroad Shops and Round Houses in the United States and Canada using the Thermit Welding Process for repairing locomotive

frames and other parts, it would read as follows:

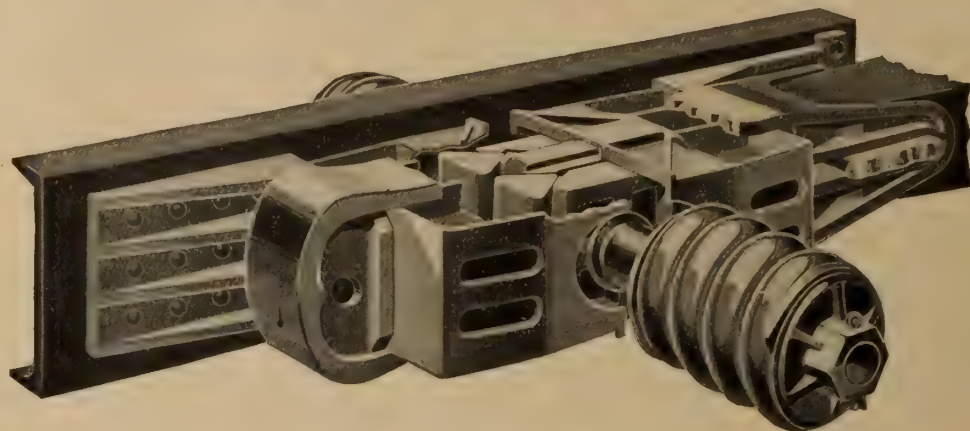
"Using lots of Thermit for welding both heavy and light frames; first class results; no failures; well pleased with your improved methods and practice which have greatly reduced the time and cost of welding."

Send for Pamphlet No. 2144

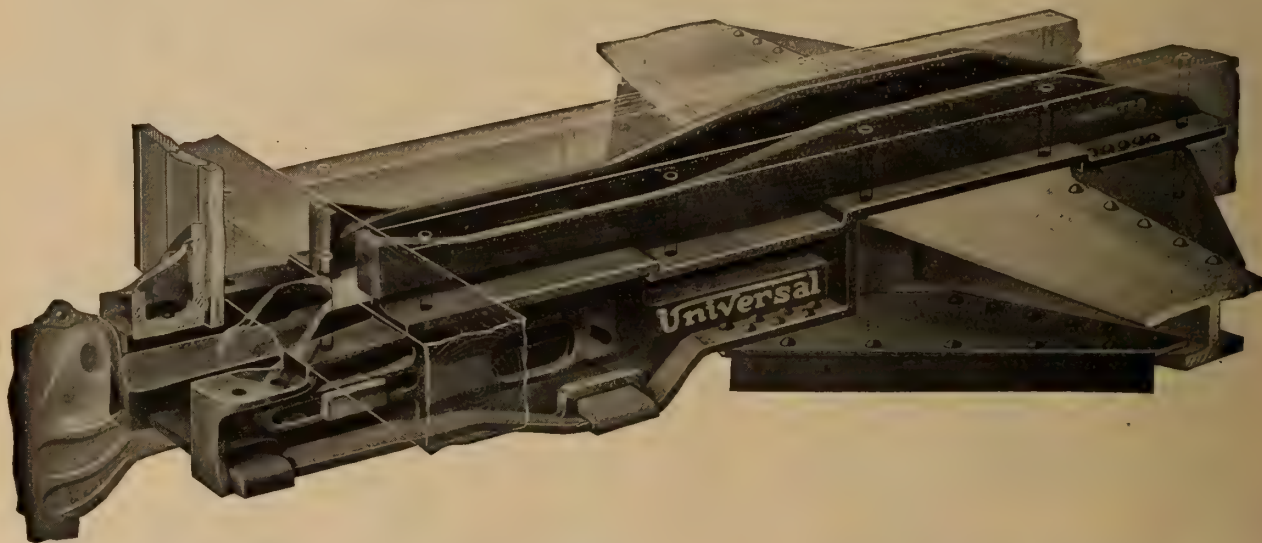
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Universal ATTACHMENTS MADE IN CANADA



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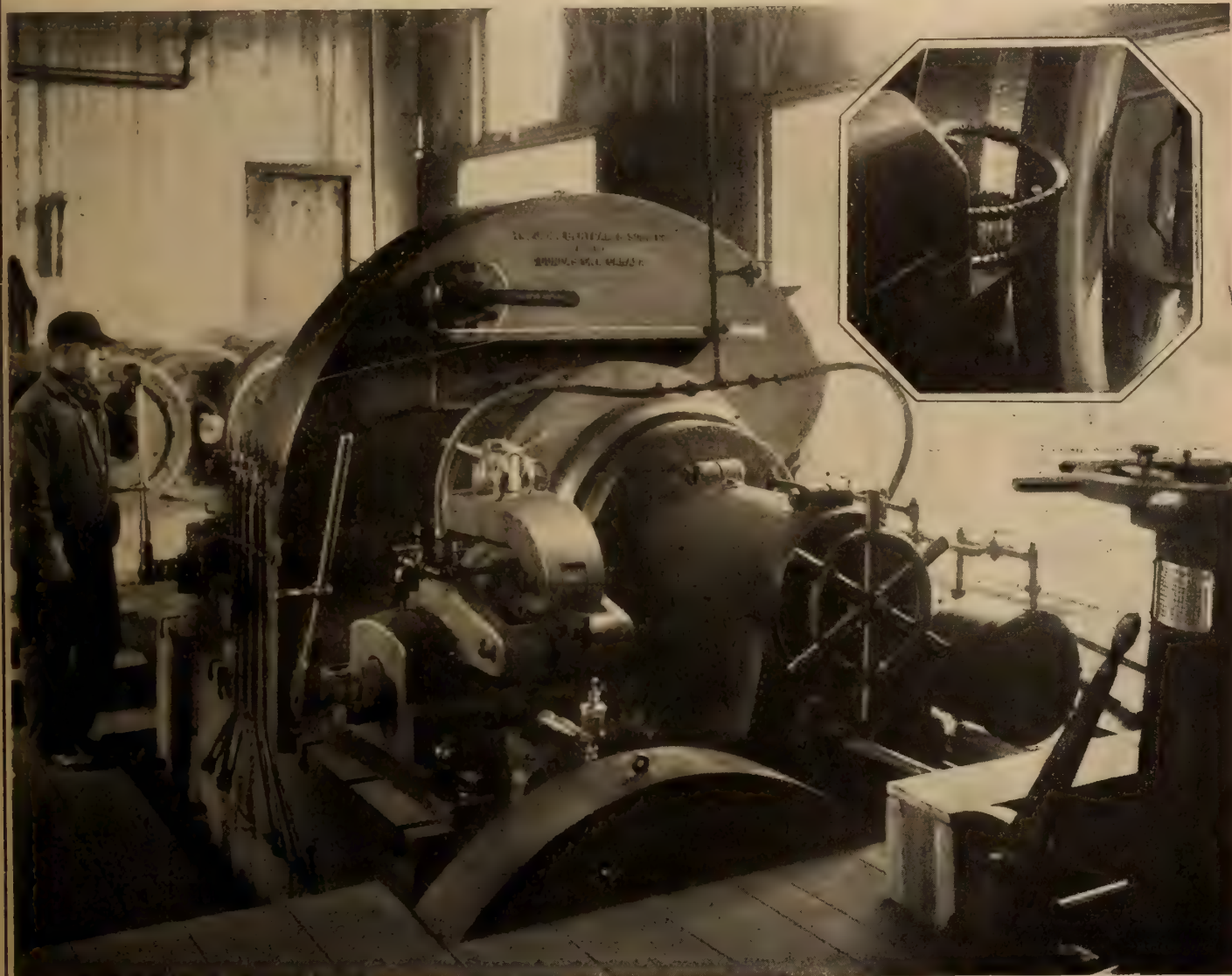
WEBB. G. KRAUSER

Transportation Building, MONTREAL



BERTRAM

MACHINE TOOLS



Shop View of No. 5 CAR WHEEL LATHE, a number of which we have recently furnished to Canadian Railways.
(Inset—enlarged view of cut on wheel.)

Note these features:

Pneumatic Tool Clamps,
Movement and Clamping of Tailstocks by Air
Cylinders,
Automatic Gap in Driving Gear,
New all-steel Herring-bone and spur gear drive,

A.C. Motor Drive through Speed Box,
Hardened, ground and lapped shoes on Tool Slides,
Full magnetic lathe controller with "start," "stop"
and "slow down" push button control stations,
Maximum Feed on Work $\frac{5}{8}$ " per revolution of wheel.

If interested, write us for photos and specifications.

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National Trolley Guard is an inverted copper or galvanized iron wire mesh mounted above the trolley wire. It catches the trolley wheel, should it leave the wire, and, being energized, carries the car to safety.



National Trolley Guard for Every Crossing—

The illustrations on this page show several ways in which National Trolley Guard has put Safety into dangerous track crossings.

On city tracks where both local and interurban passengers are carried over main line railroad tracks—

Where city line crosses high speed interurban right of way with pantograph collection—

On a dangerous double track curve, doubly dangerous because of the acute angle intersection and the curve—

Under an elevated structure, where the guard acts as a trough and softens the approach—

ALL instances of genuine appreciation of one of the most important phases of street railway operation—passenger safety.

Street railway officials in each case took out safety insurance. They installed National Trolley Guard. Why should you take chances?

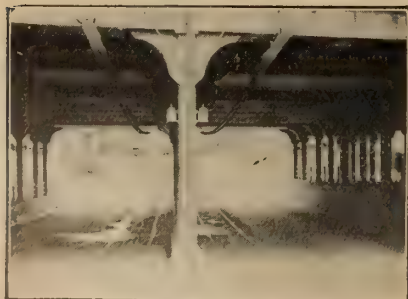
Let us send complete description of this safe-guard. It is very easily installed



Where City Line Crosses Interurban



On a Dangerous Double Track Curve



Unique Application under Elevated,
Eliminating Trough

Sold in Canada by

Dominion Insulator & Manufacturing Co., Limited

(Manufacturing Ohio Brass Company Products)

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The Choice of Men Who Know



THE small user of oxygen and dissolved acetylene can take full advantage of Dominion Oxygen Service.

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Our prices show a distinct saving. Be convinced by placing your next order with us.



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LAST



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Canadian National Railways

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BASIC OPEN-HEARTH STEEL
CASTINGS

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LAST AD.



CAST STEEL PLUNGER CONE
FOR TURBINE VALVE

Diameter - 13ft. 11in. Height - 7ft. 2in.
Weight - 25,455 lbs.

for every purpose for which they are required.

From 1 lb. to 100,000 lbs. each.

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General Offices:

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MONTREAL

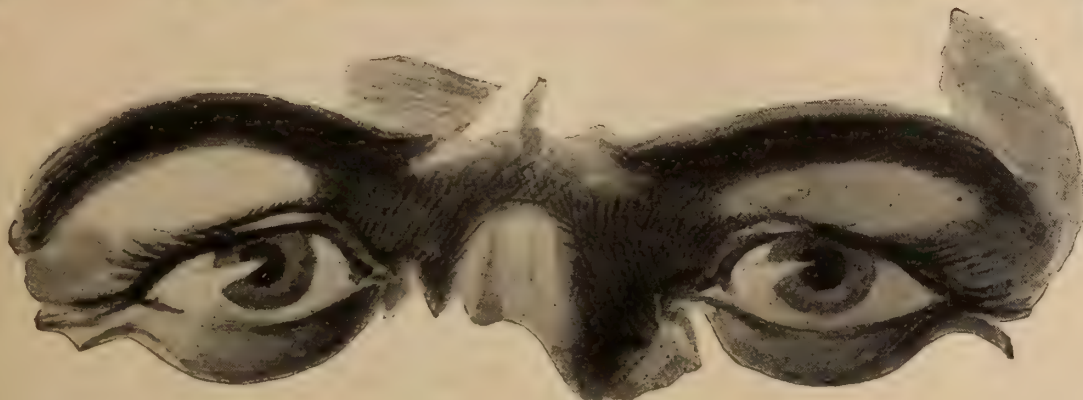
RAILWAY TRACK MATERIAL

**Angle Bars
Tie Plates
Spikes
Bolts
Nuts**



THE
STEEL
COMPANY
OF
CANADA
LIMITED

HAMILTON MONTREAL



EYES THAT COMMAND

THE eyes that read Canadian Railway and Marine World are the eyes that command; and the hands that turn its pages are the hands that direct.

For our readers are Canada's MASTERS of land and water transportation, and their skilled subordinates. They are the men who build and equip and operate our steam and electric railways, and the men who design, build, equip and operate Canadian ships, on both salt and fresh water.

Two systems of Canadian railways alone are understood to purchase current equipment and supplies averaging \$250,000,000.00 a year — not counting extension of lines—and, the men who do the specifying, the deciding and the buying are all readers of Canadian Railway and Marine World.

Rail and Water Transportation, and the many industries related to them, are more closely interwoven in Canada than in the United States, Great Britain and other industrial countries; for the Canadian Railways

pioneered in the industrial and agricultural development of Canada, and in the creation of Canada's Merchant Marine.

So the readers of Canadian Railway and Marine World are more than railway men or steamship men; they are the moving spirits in all that makes this young nation great.

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Puff-stuff is foreign to our columns. Inspired "write-ups," to flatter advertisers, run up against a "no admittance" sign. Even technical papers of deep interest are pared down to their vital essence.

And our oft-repeated advice to our advertisers is to remember that they are talking to busy men—and to make their business messages conform to that simplest definition of good advertising "Easy reading, worth reading."

CANADIAN RAILWAY AND MARINE WORLD

Toronto

Member of

Canada

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Business Newspaper Association of Canada,
Canadian National Newspapers and Periodicals Association,
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Above All—Efficiency!

Experienced railroad executives know that the first and most important point in the selection of lubricants is efficiency—the ability to render satisfactory service under the ever-changing conditions of operating service.

The attraction of “lower price per gallon” has sometimes induced the use of lubricants that are physically incapable of bearing the strains of railway work.

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Lubrication troubles go out!”*



Galena-Signal Oil Company

Toronto of Canada, Limited

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RIVETS
NUTS
WASHERS

*From Ore to Finished Product
— All Within the Empire*

All sizes and shapes for every purpose, including machine and carriage bolts and nuts (square or hexagonal), with rolled or cut thread, track bolts and nuts (square or hexagonal).

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Small Creeper Cranes or Big Cranes

The thousands of Brownhoists in use prove that they give good service. Each is backed by over 40 years experience. Write us your handling needs.

KILL
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The Brown Hoisting Machinery Co., Cleveland, Ohio

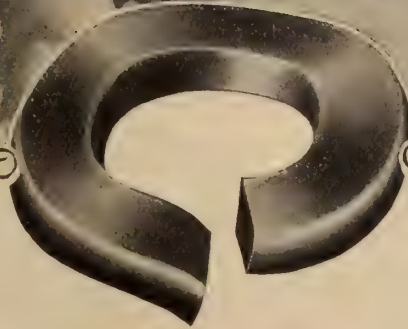
Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

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HIPOWER

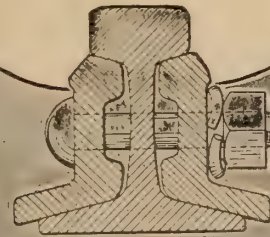


Permanent Security

HIPOWER Spring Washers maintain the permanent security of track joints. Their design prevents complete compression under ordinary wrenching.

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The **BOOSTER**

puts every loafing trailing wheel to work



Makes An Engine Do Perfect Work

EMERGENCY brakes—for unexpected slow down demands.

Locomotive Boosters—for unusual power demands.

Both are necessary.

Just as the emergency brake is ready to provide instant deceleration, so does the Booster stand ready to supply power in acceleration and in operating emergencies.

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Then write us for the latest operating data.

Write now for further information about this and other important devices which are daily helping to improve the operation of many railroads.

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Draught Over Sill Can Be
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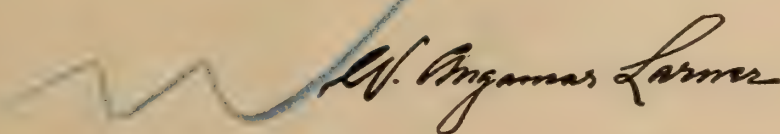
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CHILLED IRON WHEELS
for railway and street car
service. Capacity 20,000 per
day. 25,000,000 in service.

**ASSOCIATION OF MANUFACTURERS
OF CHILLED CAR WHEELS
1847 McCormick Bldg., Chicago**

THE map above shows the location of the 50 foundries in the United States and Canada, represented by the Association of Manufacturers of Chilled Car Wheels.

Chicago, 4	Sayre, Pa.
St. Louis, 2	Berwick, Pa.
Buffalo, 4	Albany
Pittsburgh, 2	Toronto
Cleveland, 2	New Glasgow, N. S.
Amherst, N. S.	Madison, Ill.
Montreal	Huntington, W. Va.
Mich. City, Ind.	Wilmington, Del.
Louisville	Houston, Tex.
Mt. Vernon, Ill.	Hannibal, Mo.
Ft. Wayne, Ind.	Reading, Pa.
Birmingham	Baltimore
Atlanta	Richmond, Va.
Savannah	Ft. William, Ont.
Boston	St. Thomas
Detroit	Hamilton
St. Paul	Ramapo, N. Y.
Kansas City, Kan.	Marshall, Tex.
Denver	Los Angeles
Tacoma	Council Bluffs
Rochester, N. Y.	

**American Railroad Association
Standards**

650 lb. wheel for 60,000 Capacity Cars
700 lb. wheel for 80,000 Capacity Cars
750 lb. wheel for 100,000 Capacity Cars
850 lb. wheel for 140,000 Capacity Cars

The Standard Wheel for Seventy-Two Years

CHILLED IRON WHEELS

Denver
Tacoma
Rochester, N. Y.

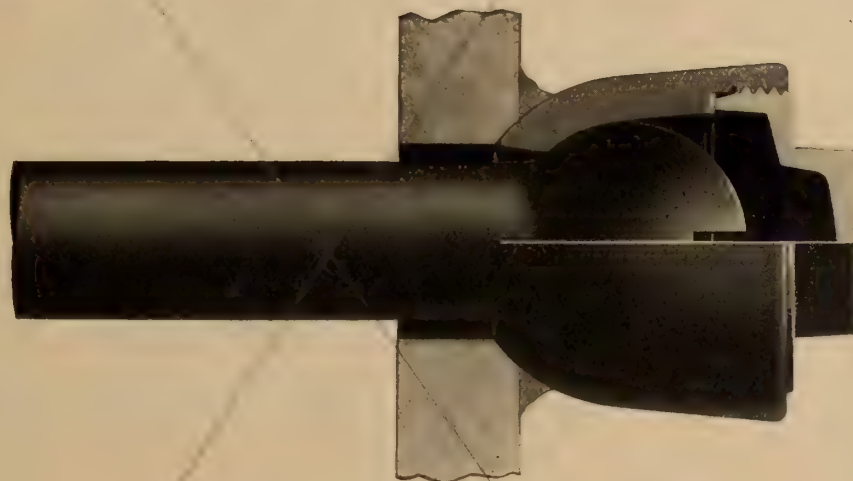
Los Angeles
Council Bluffs

American Railroad Association
Standards

650 lb. wheel for 60,000 Capacity Cars
700 lb. wheel for 80,000 Capacity Cars
750 lb. wheel for 100,000 Capacity Cars
850 lb. wheel for 140,000 Capacity Cars

The Standard Wheel for Seventy-Two Years

FLANNERY F. B. C. WELDED FLEXIBLE STAYBOLTS



The most efficient, economical and practical flexible stay-bolt assemblage yet designed for railroad use.

Adoption of the F. B. C. Universal Welded Flexible Staybolt by the leading railroads shows they have been convinced that through the installation of this type better and stronger boilers are secured, leakage is eliminated, and application and maintenance costs are decreased.

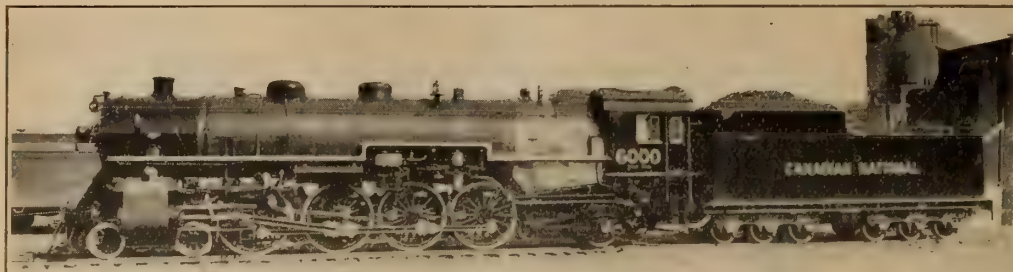
May we send you detailed information regarding this type?

*Manufactured and sold in Canada by the
Canadian Allis-Chalmers, Ltd., Toronto, Ont.*

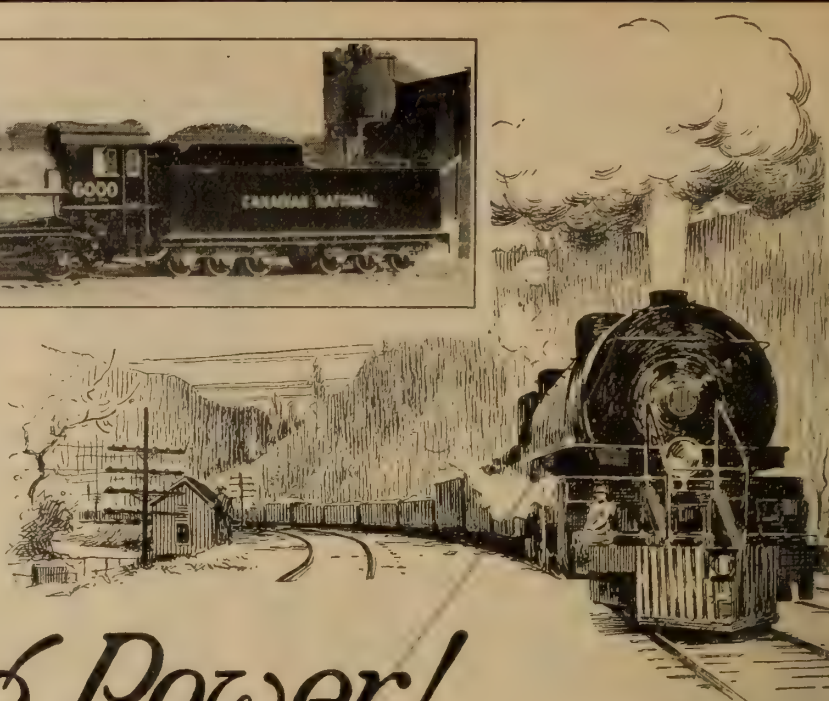
FIG.

FLANNERY BOLT CO.

PITTSBURGH, PA.



The illustration above shows the famous No. 6000, the first of the great new Mountain type locomotives now being built for the Canadian National Railways. A total of 56 Mikado, Santa Fe, Consolidation and Mountain type locomotives on this road, including the No. 6000, are DUPLEX STOKER-fired.



Earning Power!

There is a marked difference between the *actual* and *potential* Earning Power of hand-fired locomotives, hauling capacity being restricted to the limited physical strength and endurance of the fireman.

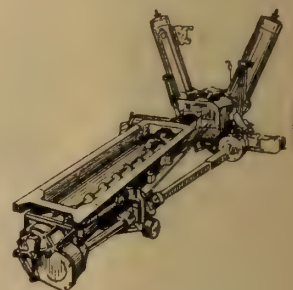
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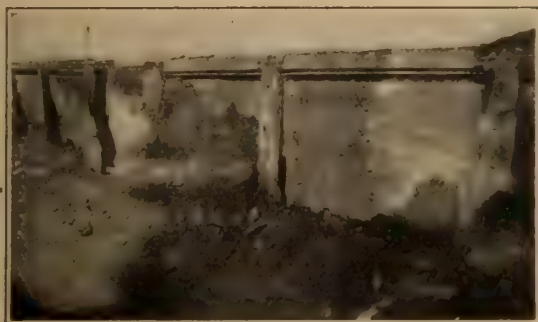
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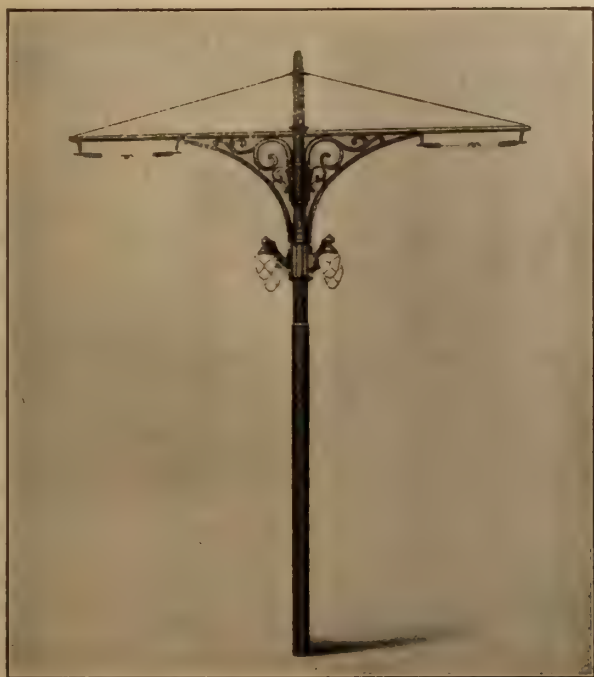
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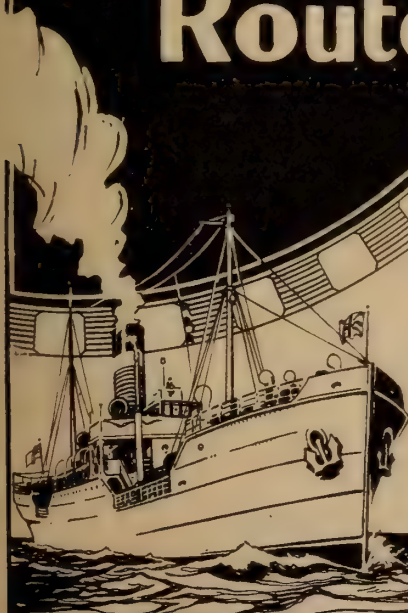
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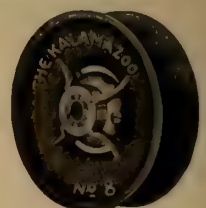


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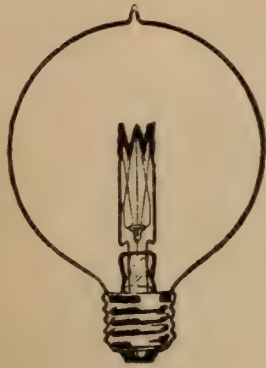


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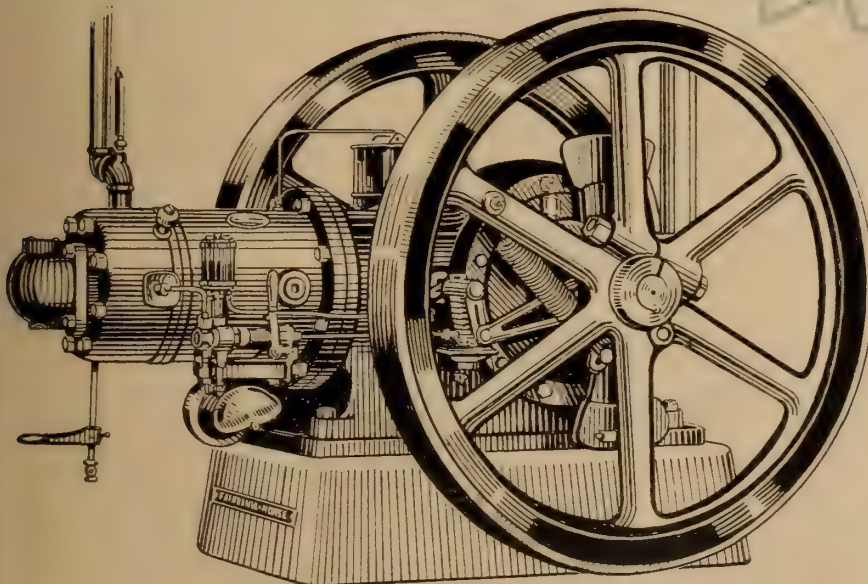
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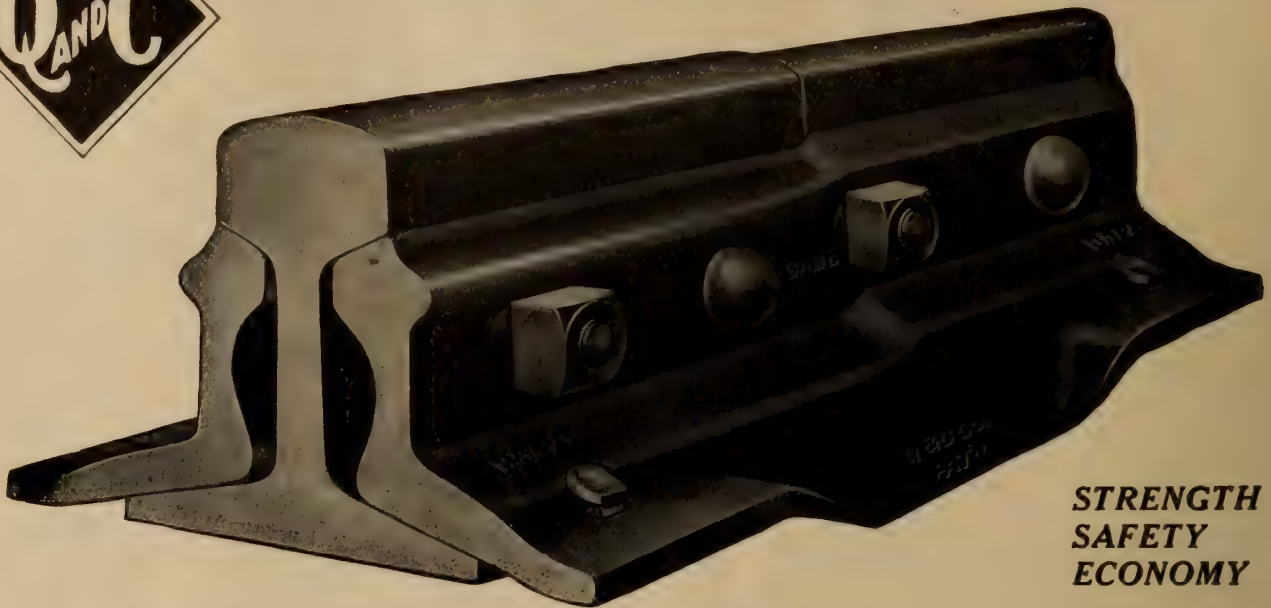
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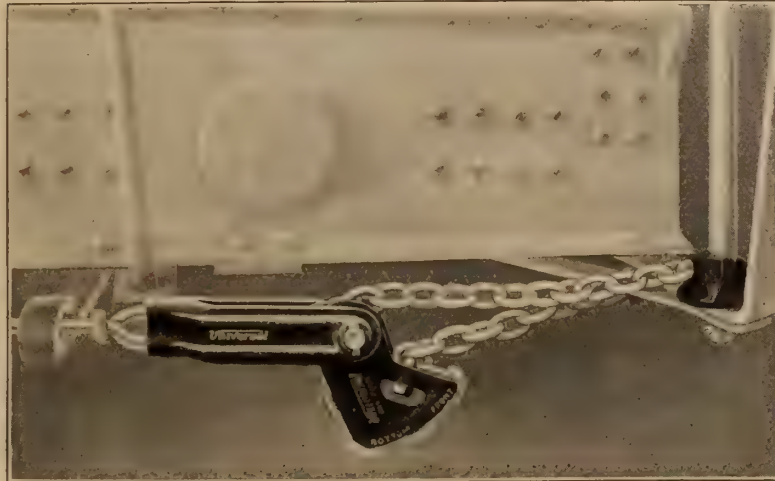
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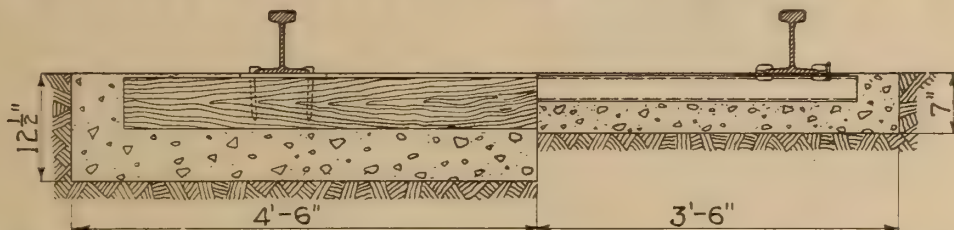
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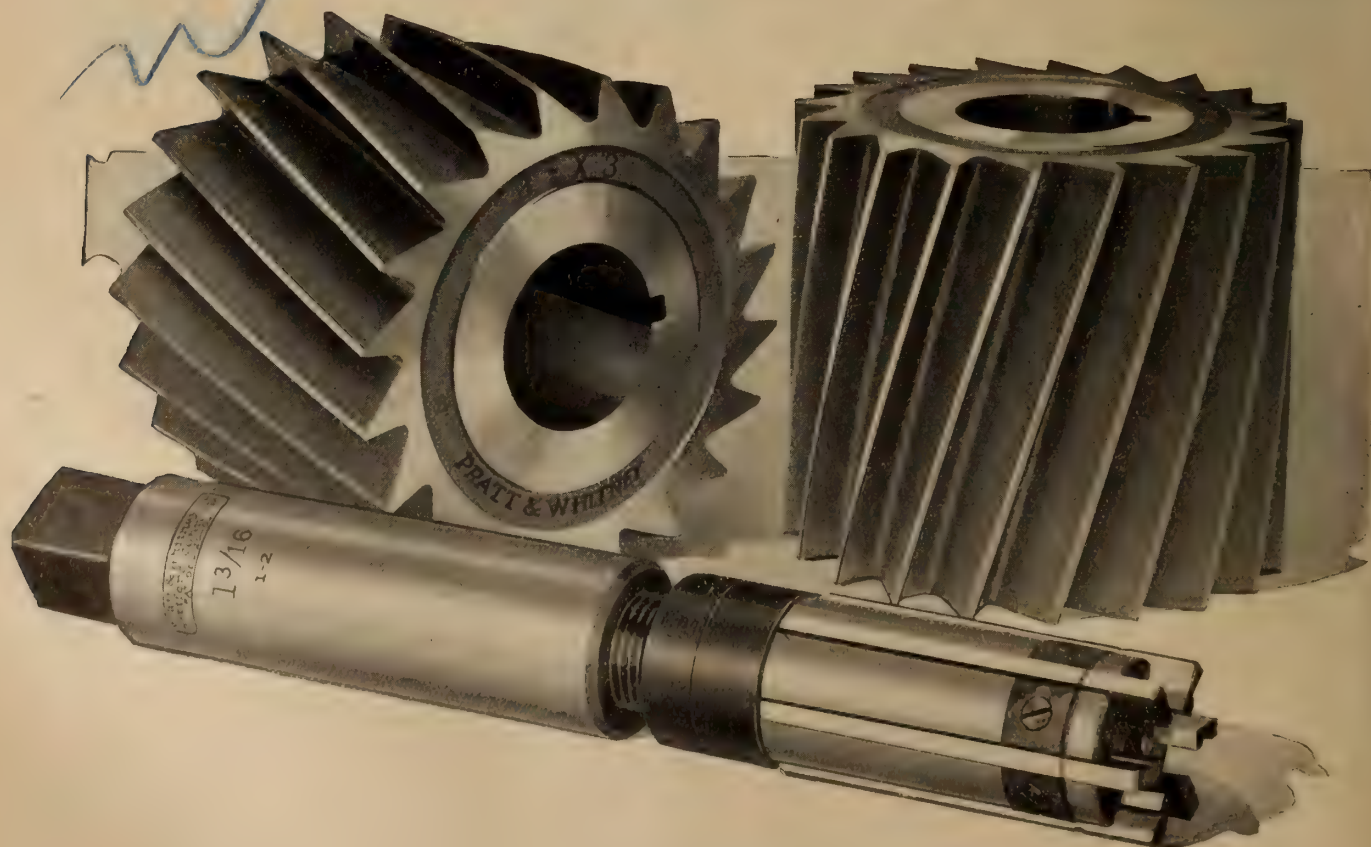
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Canadian Railway and Marine World

July, 1923

Mountain Type Locomotive, Canadian National Railways.

Prominent among the locomotives which the Canadian National Rys. have ordered this year, are the 16 mountain type being built by Canadian Locomotive Co., Kingston, Ont., which are the largest passenger ones in Canada. A large number of the details used in their construction are of C.N.R. standard design, and common to all of their large modern power. However, there are many new features necessarily introduced in the building of a new type with the dimensions and power of the mountain ones.

These locomotives are designated by the C.N.R. as the U-1-a class, road nos. 6000 to 6015. They have a total weight, without tender of 339,000 lb., weight on the drivers being 226,770 lb. The tractive power is 49,600 lb., and the factor of adhesion is, therefore, 4.5 The cylinders are 26 in. diameter by 30 in. stroke;

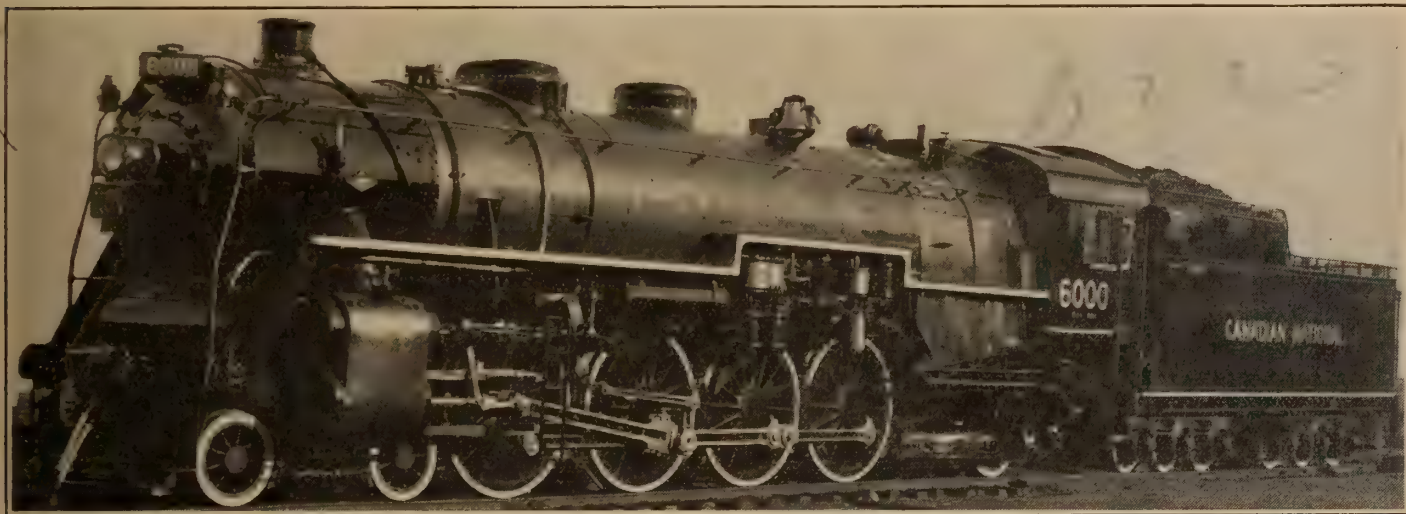
view of the size of these locomotives, and in order to take advantage of every means for efficient operation, they are equipped with mechanical stokers and feed water heaters, the boiler feed apparatus on the left hand side consisting of a pump, in connection with the feed water heater, and on the right hand side a Hancock type E. A. lifting injector of 3500 gal. capacity. The grates are of C.N.R. standard design, the rocking grate bars being of cast steel, and operated by Franklin power grate shakers.

The superheater used is the Robinson, one of the standard superheaters in England, but comparatively new on Canadian roads. It embodies many interesting features, prominent among these being the maintaining of steam in the superheater units at all times, this being calculated to lengthen the life of the

two systems, this arrangement giving a 3 point suspension. The equalization places approximately 57,300 lb. on engine truck; 226,770 lb. on drivers and 54,930 lb. on trailing truck.

The driving wheels are 73 in. diameter, with 66 in. centers of cast steel. The axles are 10 in. diameter at journals, except main journals, which are 12 in. diameter, and, due to weight consideration and in keeping with modern practice, are hollow bored.

The driving boxes are of cast steel, with bronze bearings and the boxes at the front pair of drivers are the Franklin lateral motion type, designed to compensate for the long wheel base necessary on large modern engines when taking curves. Franklin adjustable driving box wedges, and Franklin hard grease cellars are used throughout. A compara-



Mountain Type Locomotive, Canadian National Railways.

driving wheels 73 in. diameter, and boiler pressure 210 lb. The boiler is of the straight top radial stayed type, with a conical bottom, the largest course being 90 in. in diameter. The firebox proper is $84\frac{1}{4} \times 114\frac{1}{2}$ in. inside and the combustion chamber is $48\frac{1}{2}$ in. long. The boiler h.p., in percent of cylinder h.p., is 96.4%. There are $188-2\frac{1}{4}$ in. tubes and $40-5\frac{1}{2}$ in. flues; $22\frac{1}{4}$ ft. long, the flues being electric welded into back tube sheet, as per C.N.R. standard.

A feature of C.N.R. practice in crown staying, which has been followed on these boilers, is the alternation of successive groups of 4 transverse rows of crown stays, i.e., 4 rows of button head crown stays are succeeded by 4 rows of plain heads and so on alternately. This arrangement provides against the possibility of a boiler explosion, in the event of a burnt crown sheet, by reason of the sheet giving first at a point where stayed with plain head stays, and pulling down over some of these stays, at the same time, being held on either side by the button head stays, the pressure being relieved through the holes where the sheet comes over the plain heads. In

units.

The ash pans are of the C.N.R. standard hopper type, the location of the door hinges being such that the doors close of their own weight. An attachment, which is C.N.R. standard practice, and known as the ash pan sludge, is worthy of note. It consists of a $1\frac{1}{4}$ in. pipe from the delivery pipe of the inspirator to the ash pans, with valve operated from the cab, and a branch extending into each hopper. The arrangement is specially valuable, as it permits the direction of hot water into the pans to thaw them out, when the locomotives arrive at a terminal, in freezing weather, with pans partly filled.

The frames, with a single forward section, are of carbon steel, thoroughly annealed, rigidly braced with cast steel crosssties, and fitted with taper bolts throughout. The rear end is fitted with a Commonwealth cast steel cradle casting.

The equalizing system is of the usual type, the engine truck forming one system of equalization, while the 4 driving wheels on each side are equalized with the trailing truck, thus forming the other

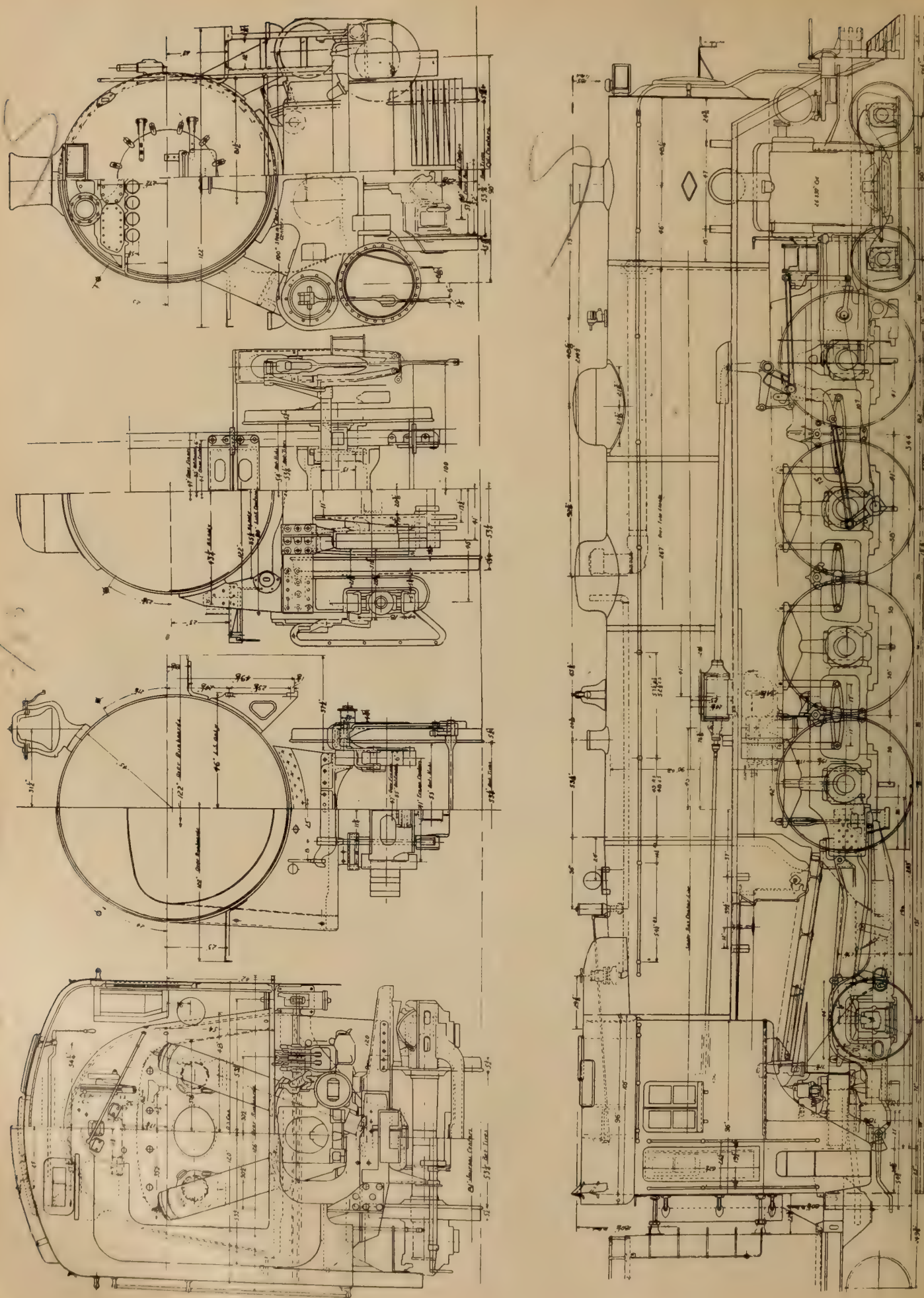
tively new feature in connection with the driving boxes is the application of the Franklin driving box spreaders, a permanent casting fixed at the bottom of the box. It prevents any spring to the sides of the box, and makes the removal and repacking of grease cellars a very simple, as well as quick, operation.

The crosshead is fitted with the Rogatchoff adjustment, which permits the adjustment of the shoes to take up wear.

The crosshead guides and piston rods are of such length that the piston may be carried out clear of the front cylinder head, without disconnecting the piston rod from crosshead.

The engine truck is of the Commonwealth constant resistance 4-wheel type, equipped with Preston hub slip liners and Armstrong oilers. The wheels are $34\frac{1}{4}$ in. diameter, and have spoked steel centers 28 in. diameter, common to all C.N.R. modern passenger engines. The trailing truck is also of the Commonwealth constant resistance type, with 43 in. diameter wheels and 36 in. cast steel wheel centers.

Steam distribution is provided for by Walschaert valve gear, of modern de-



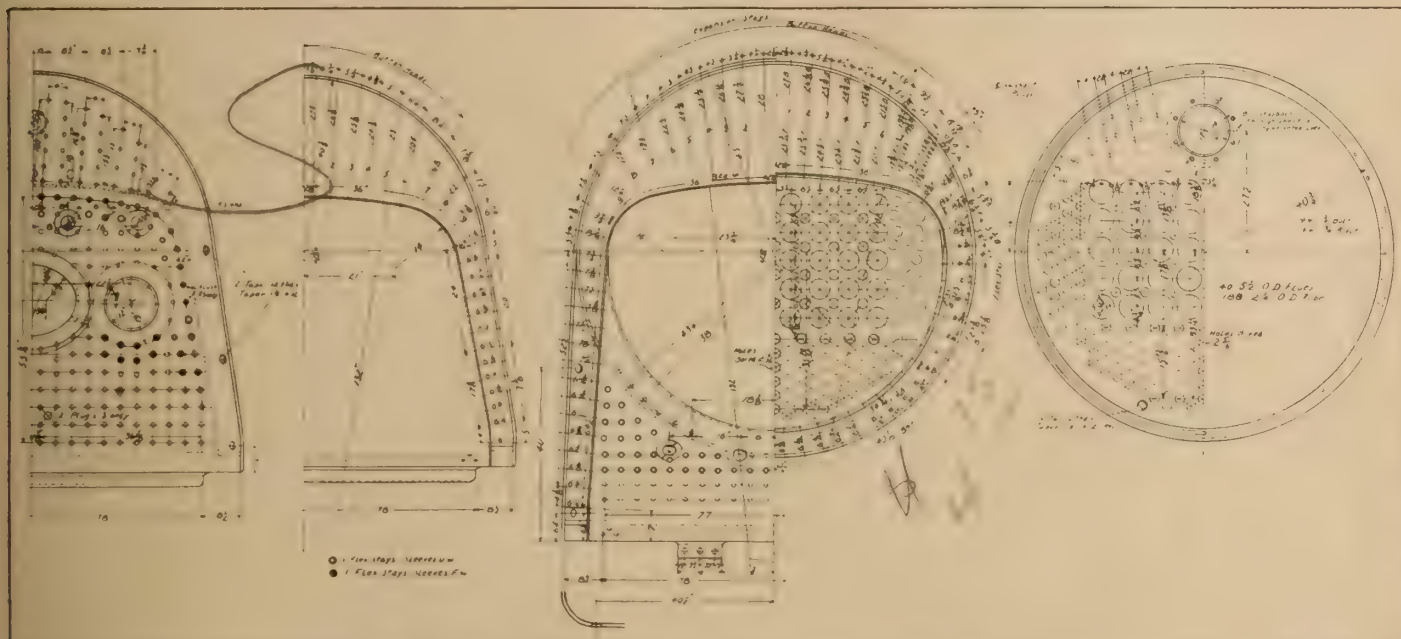
Elevation and Sections, Mountain Type Locomotives, Canadian National Railways.

sign. The diameter of the piston valve used is 14 in., and the valve setting is as follows:—Travel $6\frac{1}{2}$ in.; lap $1\frac{1}{2}$ in.; lead $\frac{1}{4}$ in.; exhaust clearance $\frac{1}{4}$ in.

The cylinders follow C.N.R. standard design, being equipped with railway standard by-pass valves, and 4 standard cylinder cocks to each cylinder, 2 being placed at the center of barrel and connected with a drain pipe from bottom of steam chest, this pipe being covered by the cylinder jacket, the 4th cock be-

lots of room for packing the operating valves, which are all of one standard design, entering the turret horizontally from the rear, with the valve seats at the front of the turret, 6 of the steam connections from the turret being taken from the front, these connections being fitted with a coupling nut, and tail piece, tapped to suit the several pipe sizes, thereby permitting the use of one size standard operating valve. These operating valves are fitted with extension

with a 14 in. Golden Glow reflector and C.M.S. focussing device, the cage body being no. 16 gauge copper, and C.N.R. standard separate number lamp case with sides oblique, this making for the maximum safety in operation, by reason of the easier and more certain identification of locomotive numbers. The water level indication is procured by the most modern method and consists of the C.N.R. standard water column, welded directly to back head of boiler and fitted



Boiler Sections, Mountain Type Locomotives, Canadian National Railways.

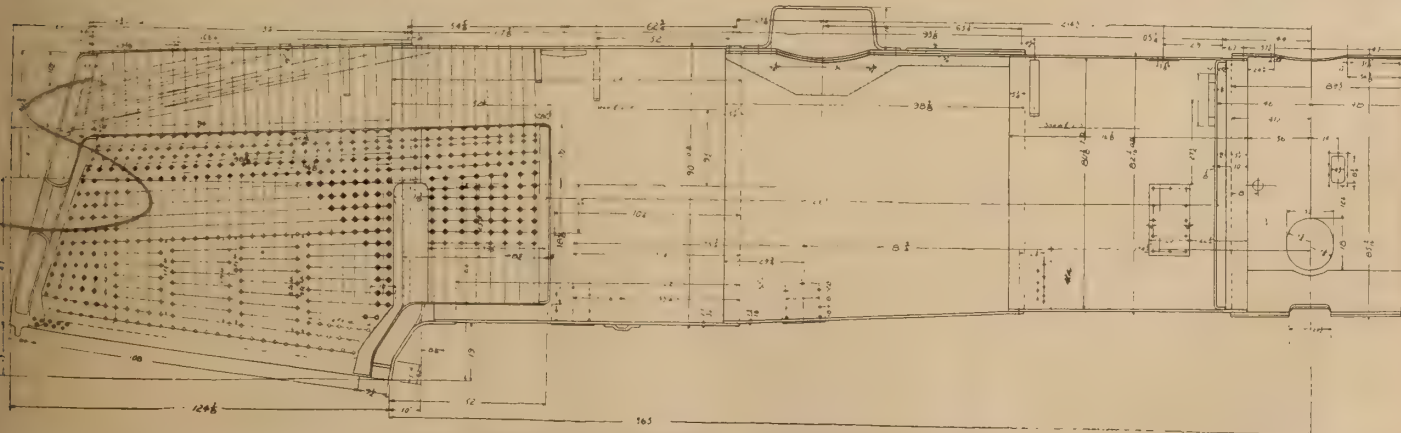
ing piped to the exhaust cavities which are drained from each quarter. All 8 cylinder cocks are operated in unison, by one set of levers. The cylinders are also equipped with the railway standard relief valve. The bottom of the cylinder casting is arranged so that the engine truck center plate is checked into it, thereby affording ample provision to withstand the thrust which this part is subjected to.

The cab is of the C.N.R. standard short

handles, carried into the cab and labelled. None of the valves are threaded into the turret, each one being secured with a cast steel flange, and 4 studs tapped into turret walls, bosses being provided inside turret, so that studs do not go all the way through. This eliminates any leaky threads in turret, as well as simplifying removal of the valves when necessary. Not only has the turret been placed outside the cab, but the inspirator, blower valves, and stoker engine valve, as well.

with C.N.R. standard try cocks and water glass fittings, the water glass being fitted with a special guard. The steamheat reducing valve is of the World Leslie type, and the piston and valve rod packing is King Metallic. The Franklin radial buffer and Unit safety bar are used between engine and tender, and Barco flexible joints are used between engine and the tender on the steam heat line.

The tender tank is of the water bottom type of C.N.R. standard design and con-



Boiler, Mountain Type Locomotives, Canadian National Railways.

vestibule type, which makes it possible to have almost all the short stays in sides of firebox, out clear of cab, the few that remain inside all being F.B.C. flexibles.

Great care has been given to the piping layout, and, as far as practical, it was laid out in the drawing room, rather than waiting for the first engine, as has usually been the case. The cast steel turret, with 8 outlets, has been placed outside 25 in. ahead of the cab, affording

This arrangement not only makes valves more accessible for packing, but removes the great danger of scalding, in case of a side-swipe, or similar accident, that would tend to burst steam pipes inside the cab.

The sand box is fitted with Hanlon sanders. Three World type safety valves are used, 1 muffled and 2 plain. The headlight equipment is made up of a Pyle National type K-2 turbo generator set, and Keystone type 1412 cage, fitted

struction, somewhat modified for the application of the Duplex mechanical stoker. The tank has a water capacity of 10,000 imp. gall. and coal capacity of 17 tons. The tender frame is of the Commonwealth cast steel type. Commonwealth 6-wheel tender trucks are used, with $5\frac{1}{2}$ x 10 in. journals. Flat side bearings are used, placed 52 in. apart both front and back.

The air brakes are Westinghouse no. 6 E.T., with $8\frac{1}{2}$ in. cross compound com-

pressor and S-5 governor. The pump is on the left side. There are 3 main reservoirs, 2 on right side and 1 on left side, with a total capacity of over 90,000 cu. in. The radiating pipe, connecting reservoirs and compressor, is so arranged as not to be visible, and is supported by cast iron brackets under the running boards. This radiating feature has been of good service in overcoming condensation, and consequent freezing, in low temperatures. The air brake piping on these locomotives has been given very careful study, which has resulted in a layout that is easy of access and of a very neat appearance.

The first of the locomotives, no. 6,000, was turned out of the works on May 31, and was taken to Montreal, where it was on exhibition for a few days, after which it was placed on exhibition in Toronto. Six of the locomotives will run between Montreal and Toronto, and 10 on the Atlantic Region.

Following are the chief details of the locomotives:—

Type	Mountain
Gauge	4 ft. 8½ in.
Type of cab	Vestibule
Fuel	Bituminous coal
Service	Passenger
Limiting height	15 ft. 3 in.
" width	10 ft. 8¾ in.
Weight in working order on drivers	226,770 lb.
" " " " " engine truck	57,300 lb.
" " " " " trailing truck	54,930 lb.
" " " " " total engine	339,000 lb.
" " " " " engine an tender	577,000 lb.
Wheelbase, rigid	19 ft. 6 in.
" engine	41 ft. 9 in.
" engine and tender	79 ft. 1¾ in.
Diameter of driving wheels	73 in.
Material of driving wheel centers	Cast steel
Leading truck wheels	34½ in. diam.; 28 in. spoked steel centers
Trailing truck wheels	43 in. diam.; 36 in. cast steel centers
Diam. and length of main driving journals	12 x 13 in.
Diam. and length of other driving journals	10 x 13 in.
Diam. and length of engine truck journals	6½ x 12 in.
Diam. and length of trailing truck journals	9 x 14 in.
Boiler, type	Radial stayed, with combustion chamber
Boiler, outside diam. first ring	90 in.
Boiler, working pressure	210 lb. per sq. in.
Tubes, number and diameter	188; 2¼ in.
Flues, number and diameter	40; 5½ in.
Length of tubes	49 ft. 6 in.
Combustion chamber, length	48½ in.
Heating surface, firebox and arch tubes	348 sq. ft.
Heating surface, tubes and flues	3731 sq. ft.
Heating surface, total	4079 sq. ft.
Superheating surface	332 sq. ft.
Firebox length and width	114½ x 84¼ in.
Grate area	66.7 sq. ft.
Valves, type	piston
Valve travel	6½ in.
Valves, diam.	14 in.
" lap and lead	Lap 1½ in.; lead ¼ in.
" exhaust lap or clearance	Clearance ¼ in.
Cylinders, stroke	30 in.
" diam.	26 in.
Tractive effort	49,600 lb.
Factor of adhesion	4.5
Boiler h.p. in % of cylinder h.p.	96.4
Special Equipment.	
Valve gear	Walschaert
Superheater	Robinson
Reverse gear	Franklin Precision
Stoker	Duplex
Injectors	Hancock type E, for 3,500 gal., right side only
Feedwater heater	Loco. Superheater Co.
Headlight equipment	Pyle National K-2 generator; Golden Glow reflector; C.M.S. focusing device
Engine truck	Commonwealth constant resistance
Trailing truck	Three World type
Safety valves	Westinghouse E.T. no. 6; S-5 governor; 8½ in. cross-compound compressor
Frames, material	Annealed carbon steel
Firedoor	Franklin clamshell
Driving box wedges	Franklin adjustable
Grate shakers	Franklin
Driving boxes	Cast Steel;
" Franklin lateral motion at leading drivers	
Oilers	Armstrong
Crosshead adjustment device	Rogatchoff
Sanders	Hanlon
Steam heat reducing valve	World Leslie
Packing	King metallic
Radial buffer	Franklin

Steam heat connections	Barco
Air bell ringer	Taylor & Arnold
Blow off cocks	Okadee
Tender	
Weight in working order	238,000 lb.
Capacity of tank	10,000 imp. gal.
Style of tank	Water bottom
Coal capacity	17 tons
Trucks, type	Commonwealth 6-wheel
Tender frame	Commonwealth cast steel
" wheels, type	
" Semi-steel center with steel tires	
" wheels, diam.	34½ in.
Journals, diam. and length	5½ x 10 in.

The Gaspé Peninsula Railway Situation.

A conference was held in the House of Commons, Speaker's chambers, recently with Sir Henry Thornton, President Canadian National Rys., with respect to the possibility of improving the service on the Quebec Oriental Ry. and the Atlantic, Quebec & Western Ry., which extend from Matapedia, on the junction of Intercolonial Ry., to Gaspé, Que. The position of the railways, details of the service at present given, and information as to the resources of the country were presented by Speaker Lemieux, who is M.P. for Gaspé, and C. Marcel, M.P. for Bonaventure. Sir Henry Thornton is reported to have said it would be best for him to discuss the matter with E. B. Reed, Chairman of the company controlling the lines, who was expected in Canada shortly thereafter.

Mr. Speaker Lemieux has advised Canadian Railway and Marine World that, as a result of the conference referred to above, W. D. Robb, one of the Canadian National vice presidents, has been instructed to survey the whole railway situation in the Gaspé district and to report thereon.

Canada Colonization Association Reorganized.—At a meeting of the re-organized directorate of the Association in Winnipeg, June 8, Sir Augustus Nanton, director, C.P.R., was elected President, and E. A. Field, Land Commissioner, Canadian National Rys., was elected Vice President. The directorate consists of members representing the Dominion Government, the Canadian Pacific and the Canadian National Railways. The C.P.R. is represented by D. C. Coleman, Vice-President, Western Lines, Winnipeg; J. S. Dennis, Chief Commissioner of Colonization and Development, Montreal; and P. L. Naismith, Manager, Department of Natural Resources, Calgary; the Canadian National Rys. are represented by W. D. Robb, Vice President, Insurance, Colonization, etc., Montreal; A. E. Warren, General Manager, Western Region, Winnipeg; E. A. Field, Land Commissioner; and A. A. Tisdale, Assistant to General Manager, Western Region, Winnipeg. The President and Vice President, with Messrs. Coleman, Warren and Field, and one of the Dominion Government directors, was appointed as an executive committee to deal with matters arising between meetings of the full board.

Disregarding Signals.—Among those who heard their country's call to "do their bit" at farming was a retired brakeman. He was ploughing up a piece of new land with a team, and had the reins fastened around his waist. Presently he saw a stump ahead, and instinctively he began waving the railway "stop" signal with both hands. The plough struck the stump and the brakeman went head over heels. Picking himself up, he shook his fist at the horses and roared: "You fools, don't you ever look back for a signal?"

Correspondence with C.N.R. Officers, Etc., Asked for.

Sir Henry Drayton, West York, Ont., moved in the House of Commons, recently, for: 1. A copy of all papers, correspondence, letters, documents, or other writings of any kind since Dec. 31, 1921, passing between (a) members of the Government or officials of the departments of the Government and the Canadian National Ry. Co., or Canadian Northern Ry. Co., or any other railway company owned by Canada or any of their officials; (b) members of Parliament and the Canadian National Ry. Co., or Canadian Northern Ry. Co., or any other railway owned by Canada or any of their officials. 2. A copy of all papers, correspondence, letters, documents, or writings of any kind between members of the Government and the late directors of the Canadian National Ry. Co., relative to the resignation of such directors. 3. A copy of all papers, correspondence, letters, documents, or writings of any kind between members of the Government or officials of the Government and the late directors of the Grand Trunk Ry. Co., relative to the resignation of such directors." The following discussion ensued:—

Hon. G. P. Graham, acting Minister of Railways: "It would take considerable time to get the returns asked for, the details of which, perhaps, my hon. friend has not fully considered. With regard to paragraphs 2 and 3 there would be no objection, but to get the information asked for in sub-section "b" of paragraph 1 would mean going into the files from every roadmaster up to the highest official. It would take a good many weeks to do this and would cost a good deal of money. My hon. friend might confine his question to something more definite."

Sir Henry Drayton: "We certainly do not want the Government to go to roadmasters or do anything of that kind. From our experience the return would not be very long."

Mr. Graham: "I cannot agree with that."

Sir Henry Drayton: "So far as I know, there was very little correspondence before the date referred to. It is only for the year. I do not want my friend, of course, to refer to the sectionmen and similar grades; his officers are quite sufficient."

Mr. Graham: "I understand my hon. friend will allow the use of the word 'officers' instead of officials. I understand from his explanation that he does not mean to go down the line."

Sir Henry Drayton: "It would be covered by using the words, 'officers and directors.'"

The Deputy Speaker: "The motion will be amended by using the words 'officers and directors' instead of the word 'officials.'"

Motion agreed to as amended.

Editor's Note:—Sir Henry was certainly astray in asking for correspondence, etc., with "the late directors of the Canadian National Ry. Co.," as there were no directors of that company until Oct. 4, 1922, when Sir Henry Thornton and others were appointed. The late directors, i.e., D. B. Hanna and his colleagues, were directors of the Canadian Northern Ry. Co., who were given power by order in council to also manage the Canadian Government Rys., and the Grand Trunk Pacific Ry.

Railway Operating Revenues, Expenses and Other Statistics for March.

The following comparative table for March, 1923 and 1922, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are not in all cases the same as reported in 1922.

The column headed "Canadian National" gives the figures for the combined steam railways in Canada, under the

Canadian National Ry. Co.'s directors' management, including the former Canadian Northern System, the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Provincial Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, nor lines west of the Detroit and St. Clair Rivers.

The column headed "Canadian Pacific"

includes also the Montreal & Atlantic and Esquimalt & Nanaimo Rys.

The items under side headings 1 to 6, inclusive, include rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, baggage, parlor cars, etc.

Operating Revenues	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
Freight	\$25,125,593.83	\$25,944,913.27	\$11,844,634.22	\$12,147,920.33	\$9,413,918.37	\$10,198,337.26
Passenger	5,693,506.23	5,190,300.93	2,470,300.96	2,171,405.05	2,421,855.37	2,317,250.85
Mail	593,557.54	626,076.75	268,297.55	280,909.91	279,094.72	297,455.74
Express	917,457.35	941,661.57	366,520.78	414,696.57	447,623.80	448,682.96
Other freight train	7,914.09	8,415.83	1,700.00		4,660.34	8,234.42
Other passenger train	439,990.45	428,126.99	169,431.71	161,068.87	251,973.04	246,334.91
Water line	54,556.24	51,447.03			54,556.25	51,449.08
All other	1,122,542.35	952,319.48	388,308.14	360,413.46	594,137.76	481,246.66
Total railway operating revenues	\$33,955,118.08	\$34,143,261.85	\$15,509,243.36	\$15,536,414.19	\$13,467,819.65	\$14,048,991.88
Operating Expenses						
Maintenance of way and structures	\$5,007,104.52	\$4,752,798.35	\$2,973,184.99	\$2,553,114.75	\$1,409,254.65	\$1,604,503.62
Maintenance of equipment	7,927,453.13	7,726,424.87	4,058,206.08	3,932,438.32	2,986,589.27	2,891,821.70
Traffic	1,007,109.97	980,033.03	309,840.14	345,275.07	628,722.01	561,126.47
Transportation	16,720,422.11	15,765,571.77	8,676,025.35	8,081,707.57	6,229,087.76	5,981,912.80
Miscellaneous operations	384,424.40	406,681.90	159,019.56	166,227.88	185,279.20	205,207.27
General	998,839.55	952,061.30	547,185.42	490,944.99	310,978.66	316,452.62
Transportation for investment	Cr. 27,254.64	Cr. 19,158.39	Cr. 26,014.43	Cr. 19,133.61		
Total railway operating expenses	\$32,018,099.04	\$30,564,412.83	\$16,697,447.11	\$15,550,574.97	\$11,749,911.55	\$11,561,024.48
Operating Income						
Net operating revenue	\$1,937,019.04	\$3,578,849.02	Dr. 1,188,203.75	Dr. 14,160.78	1,717,908.10	2,487,967.40
Railway tax accruals	593,605.82	456,209.36	236,045.35	130,450.97	259,128.30	251,615.00
Uncollectible revenues	5,714.43	9,697.95	5,689.07	3,028.94		
Hire of equipment	Cr. 613,599.80	Cr. 354,278.42	Cr. 368,088.83	Cr. 409,183.95	Cr. 536,346.25	Cr. 241,499.71
Joint facilities rents	Dr. 119,545.49	Dr. 81,294.91	Cr. 22,876.82	Cr. 9,336.98	Cr. 23,518.13	Cr. 3,859.00
Operating income	\$1,831,753.10	\$3,885,925.22	Dr. 1,038,972.52	\$270,880.24	\$2,018,644.18	\$2,481,711.11
Operating Statistics						
Average miles of road operated	38,823	38,305	20,799.3	20,765.2	13,919.9	13,877.2
Tons carried (revenue freight)	9,042,515	8,207,266	3,838,350	3,369,056	2,418,236	2,487,518
Tons carried one mile (revenue freight)	2,386,707,291	2,436,348,971	1,180,777,421	1,222,422,743	908,187,330	932,459,278
Tons carried (all freight)	10,727,207	9,698,673	4,735,919	4,189,170	3,096,033	3,053,999
Tons carried one mile (all freight)	2,731,393,533	2,705,540,619	1,397,029,679	1,385,567,905	1,026,901,013	1,029,697,009
Revenue passengers carried	3,535,788	3,352,108	1,858,070	1,777,690	1,230,892	1,151,194
Revenue passengers carried one mile	198,780,722	176,015,422	88,552,742	77,237,004	86,068,784	77,831,220
*Freight train miles	5,038,367	4,976,704	2,606,425	2,610,020	1,851,385	1,797,211
*Passenger train miles	3,961,322	3,589,011	1,749,478	1,622,992	1,760,957	1,550,104
Total train miles (revenue and non-revenue)	9,360,213	8,665,325	4,577,696	4,301,202	3,710,081	3,371,487
Freight car miles—loaded	112,596,291	108,124,857	56,806,340	54,711,767	40,547,785	39,827,771
Freight car miles—empty	40,924,159	49,490,478	21,600,461	25,319,809	13,891,228	16,554,108
Passenger train car miles	24,916,318	23,382,428	11,257,366	10,282,237	10,549,238	10,189,297
Total amount of payroll	\$19,041,242.66	\$17,747,789.27	\$10,628,341.59	\$9,929,423.99	\$6,706,461.07	\$6,254,356.02
Number of employees	150,220	138,469	85,803	77,840	52,123	49,741
Averages per mile of road operated						
Operating revenues	\$28.21	\$28.38	\$24.05	\$24.14	\$31.21	\$32.66
Operating expenses	\$26.60	\$25.41	\$25.90	\$24.16	\$27.23	\$26.87
Tons moved one mile (revenue freight)	1,983	2,025	1,831	1,899	2,105	2,168
Tons moved one mile (all freight)	2,270	2,249	2,167	2,152	2,380	2,394
Revenue passengers carried	165	146	137	120	199	181
*Averages per freight train mile						
Freight revenues	\$4.99	\$5.21	\$4.55	\$4.65	\$5.09	\$5.68
Tons of freight (revenue freight)	473.7	489.6	453.0	468.3	490.5	518.8
Tons of freight (all freight)	542.1	543.6	536.0	530.9	554.7	572.9
Loaded freight cars	22.3	21.7	21.8	21.0	21.9	22.2
Empty freight cars	8.1	9.9	8.3	9.7	7.5	9.2
*Averages per passenger train mile						
Passenger train revenues	\$1.93	\$2.00	\$1.87	\$1.87	\$1.93	\$2.14
Passengers carried	50.2	49.0	50.6	48.7	48.9	50.2
Passenger cars	6.3	6.5	6.4	6.3	6.0	6.6
Average operating expenses per train mile	\$3.42	\$3.53	\$3.65	\$3.62	\$3.17	\$3.43
Average length of haul (revenue freight), miles	263.9	296.9	307.6	362.8	375.6	374.9
Average passenger journey, miles	56.2	52.3	47.7	43.4	69.9	67.6
Average tons per loaded freight car	24.3	25.0	24.6	25.3	25.3	25.9
Average freight receipt per revenue ton mile	1.053c	1.065c	1.003c	.994c	1.037c	1.094c
Average passenger receipt per passenger per mile	2.864c	2.949c	2.789c	2.811c	2.814c	2.977c
Ratio of payroll to operating revenues	56.1%	52.0%	68.5%	63.9%	49.8%	44.5%
Ratio of payroll to operating expenses	59.5%	58.0%	63.7%	63.9%	57.1%	54.1%
Ratio of operating expenses to revenues	94.30%	89.52%	107.66%	100.09%	87.24%	82.29%

*Contains a proportion of mixed train miles.

The New Brunswick Ry. Co., which owns about 1,600,000 acres of forest land in New Brunswick, is reported to have arranged to reseed the burned over areas and so keep the lands in forest in perpetuity.

C.P.R.'s Winnipeg Telephone Exchange.—The C.P.R.'s private telephone exchange in Winnipeg, which connects all its departments, except the telegraph department, which has a separate exchange, was transferred from manual to

automatic operation, June 17. An attendant is in charge of the exchange continuously, which is reached by calling the general number N. 430 of the city system. Over 300 lines were affected by the change.

Railway Operating Revenues, Expenses and Other Statistics.

The table on the preceding page gives the gross earnings, operating expenses, net earnings or deficits, and other operating statistics for Canadian railways as a whole for March, compared with March 1922, and separately for the Canadian National and Canadian Pacific Railways. Tables on another page give the results secured by the Canadian National, Canadian Pacific and Grand Trunk Railways in April. A study of these tables bears out the statements made in our June number concerning the unfavorable results secured in March, but demonstrates that a substantial improvement was made in April.

In March, the railways as a whole experienced a decrease in gross revenue of \$188,143, compared with March 1922, and operating expenses increased \$1,453,686. The decrease in gross earnings arose from decreases in revenue from all of the chief branches of the service, except passenger, viz., freight, express and mail, the only increases being in passenger revenue and in relatively unimportant items. Operating expenses increased 4.8%; maintenance of way expenses 5% and transportation expenses 6%. The payroll for the month was 7% more than in March 1922, and the number of employees was 12.7% more. The result of the decrease in gross earnings and the increase in operating expense was a decrease of \$1,641,829 in net, and an increase in operating ratio of from 89.52 in March 1922 to 94.3, bringing about a large decrease in the operating income. The increase in tax accruals and in the hire of equipment credit are both worthy of note.

The freight traffic statistics for all roads show that while the number of tons of revenue freight carried during March 1923 was somewhat greater than in March 1922, the number of ton miles handled was somewhat less, which is explained, of course, by the large decrease in the average freight haul. The decrease in revenue from freight service, compared with March 1922, was due only partly to the falling off in ton mileage handled, however, as the average receipt per revenue ton mile was slightly less than in March 1922.

In March, as in January and February, passenger traffic was heavier than in the corresponding month of 1922. Not only was there a greater number of revenue passengers handled in March 1923, than in March 1922, but the average journey was greater, resulting in a substantial increase in revenue passenger miles. The increase, while resulting in increased passenger earnings, was not wholly reflected therein, owing to a reduction in the average receipt per revenue passenger mile.

An examination of operating statistics shows that, while the number of ton miles of revenue freight handled was smaller than in March 1922, the number of loaded freight car miles recorded was greater. While the average number of loaded freight cars per train was greater than in March 1922, the average car loading was 0.7 tons a car less, resulting in a substantial decrease in the average revenue train load. There was a gratifying reduction in the total empty freight car mileage operated, which is confirmed by the figure covering the average number of empties per train. The number of

passenger train car miles did not increase in undue proportion to the revenue passenger mileage, and increased average passenger journey served to keep down the passenger train mileage in relation to fact of there being a decrease in the number of cars per passenger train and a very slight increase only in the average number of passengers per car.

A new set of figures is introduced in the table covering March operations, viz., averages per day per mile of road operated. These figures were given formerly on a monthly basis, but on the daily basis a better unit of comparison is presented. The figures for March, taken by themselves, serve to convey quickly, an idea of the business handled by the roads during the month, and with what results.

Just how poor a month March was for the National system is shown by the figures for it alone. While in March 1922 the Government roads just about broke even, the operating ratio being 100.9, this year the March operating ratio rose to 107.66. Despite an increase in passenger traffic of 14.7%, and in passenger traffic revenue of 13.8%, the 2.5% decrease in freight revenue, and the 7.4% increase in expenses, combined to bring about the unfavorable result noted. The decrease in average car loading was 0.7 tons, but train loading was slightly heavier; a decreased movement of grain in March this year probably prevented a better trainload increase being recorded.

Although the C.P.R.'s March operating ratio was much better than in February, it was substantially larger than in March 1922. Freight traffic revenue decreased 7.7%; so that while passenger traffic revenue was 4.5% greater than in March 1922, total revenue was 4% smaller, and this, in combination with a 1.6% increase in operating expenses, caused the increased operating ratio.

There is no doubt that, for all roads, the unfavorable weather experienced in March was largely responsible for the falling off in average train loading, and the high level of operating expenses.

The April results were much more encouraging than in March. The C.P.R. gross earnings for April were \$13,651,494, or \$1,320,123 more than in April 1922; operating expenses, \$11,700,615, were but \$918,017 greater, which resulted in the net earnings for the month, \$1,950,879, being \$402,107 more than in April 1922. As was pointed out in our June number, the decreases in net suffered by the C.P.R. in February and March, compared with Feb. and March, 1922, wiped out the increase in net in January, but the increase in April places the net earnings for the first four months of the year ahead of the net secured in the first four months of 1922 by \$38,868.

The entire National system's gross revenues, for steam lines only, for April, were \$20,946,396, compared with \$15,162,081 in April 1922. Operating expenses were \$18,729,202, compared with \$16,132,644, leaving net earnings \$2,217,194, compared with an operating deficit in April 1922 of \$970,563. The G.T.R.'s gross earnings for April were \$10,838,158 compared with \$6,803,191 in April 1922, and operating expenses were \$7,763,879 compared with \$6,500,652, leaving net earnings of \$3,074,279, compared with \$302,539. The operating ratio in April

1923 was 71.63, compared with 95.55 in April 1922. In the first four months of 1923, the G.T.R. had an operating ratio of 84.28, and net earnings of \$5,909,049, while in the first four months of 1922 the operating ratio was 90.39 and the net earnings \$2,903,493.

The foregoing shows that with favorable weather conditions and a continuation of the heavy traffic movement, the railways accomplished quite a substantial improvement. Taking the C.P.R. as the standard, it is evident that returns are at least keeping up to the mark set last year. This is in itself, however, no argument for those who apparently still cherish the hope that the railways are in a position to make substantial rate reductions. It must be borne in mind that there is a lot of ground to be covered yet before railway operation is back on the same plane that it occupied before the inflation period, and rate reductions of consequence will not be in order until more progress toward a better operating ratio than yet obtained has been made.

Freight Car Conditions and Supply.

The Railway Association of Canada reports that on June 1 there were 196,419 freight cars on Canadian lines, of which 15,139 were in bad order. The A.R.A. allowance, on a 7% basis, works out to 13,748 allowable bad order cars, so that the excess number over the A.R.A. figure was 1,390. The actual bad order percentage was 7.7, compared with 7.4% at May 1. A shortage of 350 cars at June 1 was reported, compared with a shortage of 1,360 at May 1.

The American Railway Association's Car Service Division reports that on May 15 there were 2,251,813 freight cars on U.S. class 1 roads, of which 210,243 were in bad order, this representing a percentage of 9.3, compared with 9.2 on May 1. Out of 1,024,695 box cars, 90,365, or 8.8%; out of 61,098 refrigerator cars, 7,184, or 11.8%; out of 948,354 gondolas, 93,293, or 9.8%; out of 81,466 stock cars, 8,198, or 10.1%, and out of 94,272 flat cars, 8,027, or 8.5%, were in bad order. At May 23 the U.S. class 1 roads reported a shortage of 3,973 box cars, 14,620 coal cars, and 20,585 freight cars of all kinds, including box and coal cars.

Adjustment of Brake Power on Tank Cars.—The American Railway Association, Mechanical Division, has issued the following circular:—Request has been received from a majority of the owners and operators of tank cars for an extension of the effective date for complying with the provisions of circular S. III-11, issued May 15, 1919, and the tank car specifications for the adjustment of brake power on existing cars. It is stated that this request is due to the general business conditions prevailing for some time, and also to the fact that so many of the cars were scattered throughout the country, many of them having been stored on railway sidings, making it difficult, if not impracticable, for the owners to complete the work in the time limit set, which is July 1, 1923. This request has been granted by the general committee. The effective date for complying with the requirement of the tank car specifications in the matter of adjustment of brake power on existing tank cars is extended to July 1, 1924.

Birthdays of Transportation Men in July.

Many happy returns of the day to:

A. A. Allen, Vice President, The Holden Co., Montreal, formerly Master Mechanic, Timiskaming & Northern Ontario Ry., born at Grafton, Ont., July 7, 1870.

J. M. Bannerman, Superintendent of Investigation, Western Region, Canadian National Rys., Winnipeg, born at Poplar Point, Man., July 16, 1870.

W. E. Barnes, Superintendent of Motive Power, Maritime District, Canadian National Rys., Moncton, N.B., born at Shediac, N.B., July 24, 1879.

J. H. Black, ex-Superintendent, Timiskaming & Northern Ontario Ry., now at Toronto, born near Smiths Falls, Ont., July 8, 1874.

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., July 25, 1877.

C. E. Brooks, Chief of Motive Power, Canadian National Rys., Montreal, born at Constantinople, Turkey, July 3, 1886.

D'Alton C. Coleman, Vice President, Western Lines, C.P.R., Winnipeg, born at Carleton Place, Ont., July 9, 1879.

G. C. Conn, ex-Freight Traffic Manager, Pere Marquette Rd., Detroit, Mich., now Director of Traffic, Buick Motor Co., Flint, Mich., born at Woburn, Mass., July 1, 1867.

C. D. Cowie, Assistant to Vice President of Finance, Canadian National Rys., Montreal, born at Insh, Aberdeenshire, Scotland, July 25, 1887.

A. R. Curran, Paymaster, Central Region, Canadian National Rys., Toronto, born there, July 3, 1877.

H. Darling, Locomotive Foreman, Canadian National Rys., Smithers, B.C., born in Northumberland, Eng., July 27, 1873.

A. H. Eager, General Superintendent, Motive Power and Car Equipment, Western Region, Canadian National Rys., Winnipeg, born at Waterloo, Que., July 15, 1868.

Otis Grant, Superintendent, Leaside shops, Canadian National Rys., Leaside, Ont., born at McAdam Jct., N.B., July 13, 1869.

F. E. Hartshorn, Assistant Superintendent, Montreal Division, Quebec District, Canadian National Rys., Montreal, born at West Stewartstown, N.H., July 21, 1877.

S. J. Hungerford, Vice President, Operation and Construction Departments, Canadian National Rys., Montreal, born at Bedford, Que., July 16, 1872.

C. W. Johnston, Passenger Traffic Manager, Canadian National Rys., Montreal, born at Actonvale, Que., July 27, 1879.

M. Kelly, Division Engineer, Toronto Terminals, Ontario District, C.P.R., Toronto, born at Thamesville, Ont., July 6, 1878.

T. King, Superintendent, Detroit Division, Michigan District, Canadian National Rys., Durand, Mich., born at Dunbarton, Ont., July 18, 1869.

A. E. Lock, Superintendent Car Service, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Albany, N.Y., July 14, 1879.

W. B. Logan, General Storekeeper, Atlantic Region, Canadian National Rys., Moncton, N.B., born at Amherst, N.S., July 30, 1869.

G. A. McNicholl, General Passenger Agent, Jasper, Alta., and west, Western Region, Canadian National Rys., and Grand Trunk Pacific Coast Steamship Co.,

Vancouver, B.C., born at Montreal, July 31, 1876.

H. D. Mackenzie, Master Mechanic, Canadian National Rys., Edmundston, N.B., born at Churchville, N.S., July 22, 1864.

M. H. MacLeod, Consulting Officer to the Executive, Canadian National Rys., Toronto, born in Skye, Inverness-shire, Scotland, July 13, 1857.

R. G. McNeillie, General Passenger Agent, Field, Kootenay Landing and east, Western Lines, C.P.R., Winnipeg, born at Lindsay, Ont., July 1, 1883.

J. M. Macrae, Assistant General Freight Agent, Western Region, Canadian National Rys., Winnipeg, born at Stornoway, Scotland, July 31, 1884.

W. G. Manders, Freight Traffic Manager, Western Region, Canadian National Rys., Winnipeg, born at Owen Sound, Ont., July 24, 1876.

Neil Marple, Foreman Blacksmiths and Iron Machines, Michigan Central Rd., St. July 1, 1860.

J. E. Morazain, General Superintendent, Thomas, Ont., born in McKillop Tp., Ont., ent, Quebec District, Canadian National Rys., Quebec, born at Wheatland, Que., July 31, 1875.

P. C. Perry, Division Engineer, Canadian National Rys., Regina, Sask., born at Fort William, Ont., July 27, 1889.

R. E. Perry, Manager, Traffic Bureau, Atlantic and Central Regions, Canadian National Rys., Montreal, born at Drayton, Ont., July 5, 1876.

R. Preston, Superintendent of Motive Power, Eastern Lines, C.P.R., Montreal, born at Toronto, July 28, 1863.

C. J. Quantic, Superintendent of Motive Power and Car Equipment, British Columbia District, Canadian National Rys., Vancouver, B.C., born at Erin, Ont., July 18, 1882.

Gerard Ruel, K.C., Vice President and General Counsel, Canadian National Rys., Montreal, born at St. John, N.B., July 5, 1866.

Capt. J. Springett, Agent for Holland, C.P.R., Rotterdam, born at Eastbourne, Eng., July 20, 1879.

George Stephen, Assistant Freight Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Montreal, July 5, 1876.

Sir Thos. Tait, President, Fredericton & Grand Lake Ry. & Coal Co., Montreal, born at Melbourne, Que., July 24, 1864.

M. M. Todd, Vice President and Treasurer, Grand River Ry. and Lake Erie & Northern Ry., Galt, Ont., born there, July 22, 1891.

H. B. Walkem, ex-Assistant Engineer, C.P.R., Vancouver, now at Port Haney, B.C., born at Montreal, July 31, 1858.

G. A. Walton, General Passenger Agent, Eastern Lines, C.P.R., Montreal, born there, July 17, 1881.

N. B. Walton, Assistant General Superintendent, Smithers Division, British Columbia District, Canadian National Rys., Prince Rupert, B.C., born at Palmerston, Ont., July 27, 1884.

S. B. Wass, Construction Engineer, Neebing terminal yard, Canadian National Rys., Fort William, Ont., born in Perth County, Ont., July 11, 1880.

Railway Lands Patented.—Letters patent were issued during May for Dominion railway lands, in Manitoba, Saskatchewan, Alberta and British Columbia, as follows,—Canadian Northern Ry. 22,279.96 acres; and Nicola, Kamloops and Similkameen Ry., 8.71 acres.

Transportation Events of Twenty-five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for July 1898.

Sir Wm. Van Horne returned to Montreal from Europe.

Wheat carried from Fort William to Prescott, Ont., at 2½c a bushel.

Survey completed for C.P.R., Toronto-Sudbury line, by H. D. Lumsden.

Combined dining and restaurant cars on Intercolonial Ry., proved unsuccessful.

Yarmouth Steamship Co. placed s.s. Express on Halifax-Yarmouth, N.S. route.

G.T.R. competed with C.P.R., in harvesters excursions to the northwest, for the first time.

T. H. White appointed Chief Engineer, Ontario and Rainy River Ry., by Mackenzie & Mann.

Alfred Price, Chief Dispatcher & Car Distributor, C.P.R., Toronto, appointed Superintendent there.

Newfoundland Transinsular Railway completed. First through train made the 548 miles in 24 hours.

Position of Traffic Manager, Canadian Government Rys., at Montreal, held by A. H. Harris, abolished.

C.P.R. let contract for standardizing Columbia and Western Ry. gauge, between Traill and Leroy, B.C.

A majority of Manitoba and Northwestern Ry. bonds bought by syndicate, headed by E. B. Osler, Toronto.

Richelieu & Ontario Navigation Co's steamship Toronto, to run between Toronto and Prescott, Ont., launched at Toronto.

St. Catharines and Niagara Central Ry. from St. Catharines to Clifton, Ont., sold to G. M. Neelon, for \$35,000, subject to liens.

Semi-Centennial of G.T.R., from Portland to Yarmouth, Me., originally Atlantic & St. Lawrence Ry., celebrated at Portland, July 4.

G.T.R. appointments:—J. M. Herbert, General Superintendent, Eastern Division, Montreal; W. Cotter, General Superintendent, Western Division, Detroit, Mich.; J. E. Dalrymple, Assistant to General Traffic Manager, transferred from Montreal to Toronto, temporarily, to act as Divisional Freight Agent during Arthur White's absence owing to illness.

Ontario Traffic Service Co. Ltd. has been incorporated under the Ontario Companies Act, with \$40,000 authorized capital, and offices at Windsor, Ont., to act as general traffic manager; to advise in all matters relating to railway freight bills, rail and other shipping rates, classification of matter, manner of packing and shipping, and all other matters pertaining to the transportation of freight; to audit freight bills and demurrage accounts; to adjust claims for loss or damage of freight, and to do any other work incidental to the transportation of freight. The provisional directors are: W. E. Addyman, Herbert Baker, Windsor, Ont.; R. Wood, Detroit, Mich., described as traffic managers; and G. A. Scott, accountant, Windsor.

Great Britain's Fast Trains.—A London, Eng., cable states that the British railway companies have speeded up their trains for the summer traffic, and that several 80 miles an hour trains are being operated. Pullman car service is being extended, and other improvements are being introduced.

Railway Wages and Working Conditions in Canada and the United States.

The Railway Association of Canada has received notice from the American Federation of Labor's Railway Employees' Department, Division 4, the membership of which is made up of shopmen employed on Canadian railways, of a desire to re-open wage and working condition negotiations with the Association's wage committee. Wage and working condition disputes between the railways and their shop employees were prominent last summer, and full details of them were given in Canadian Railway and Marine World and of the formation of conciliation boards under the Lemieux Act, and the final settlement. The shopmen's agreement provides that negotiations may be re-opened on 30 days notice being given by either the railways or the shopmen; and such notice was given by the latter about June 10, simply stating that it was desired to discuss the revision of certain rules, and wage rates, the exact demands to be presented not being mentioned. It is expected, however, that the shopmen will want changes in the present rules governing overtime and Sunday work, in addition to increases in wages. Some 35,000 men are affected. The shopmen's wage schedule committee was summoned to Montreal on June 12, to formulate the demands to be presented to the Association.

As stated in our June issue, the maintenance of way employees on Canadian railways gave the required 60 days notification of their desire to re-open wage and working condition negotiations with the Railway Association. Discussion on this application will begin in the near future.

Delegates from numerous local lodges of the Railway Carmen of America, and general officers of that organization, met in Montreal during the latter part of May. Schedule negotiations of the past few years were reviewed and future policies discussed. Frank McKenna, Vice President of the organization, and also Vice President of the American Federation of Labor's Railway Employees' Department, Division 4, was re-elected Chairman of the C.P.R. carmen's joint protective board.

U.S. Situation.—B. W. Hooper, former Governor of Tennessee, has been re-elected Chairman of the U. S. Railroad Labor Board, and G. W. W. Hanger has been re-elected Vice Chairman. Both are members of the public group of the Board, which is composed of three railway members, three public members, and three members representing railway labor.

Proceedings in the maintenance of way employees' application for increased wage rates began before the U.S. Railroad Labor Board in Chicago on June 11. The increases asked range from 8c to 15c an hour, and are as follows per hour: shop foremen and assistant foremen, 15c; section foremen and assistants, 11c; mechanics, 14c; mechanics' helpers, 8½c; trackmen, 15c; track and shop laborers and watchmen, 11½c. The application affects over 100,000 employees, and, if granted in full, would increase the annual payroll over \$25,000,000. When the petition was first filed with the Board, 30 roads were concerned, but, prior to June 11, six of them had come to direct settlement with their men, viz., Chicago &

Northwestern; Chicago, Milwaukee & St. Paul; Missouri Pacific; Illinois Central; Kansas, Oklahoma & Gulf; San Antonio & Aransas Pass. Most of the lines granted wage increases averaging 3c to 4c an hour; on the C. & N. W., for example, bridge and building foremen received increases ranging from \$2.50 to \$12.50 a month; section foremen \$5 a month; assistant foremen, 5c an hour, and mechanics and laborers, from 1c to 4c an hour. Among the 24 remaining roads which appeared as defendants at the June 11 hearings, were the Chicago Great Western; Chicago, St. Paul, Minneapolis & Omaha; Denver and Rio Grande Western; Pennsylvania; Southern Pacific; Louisville & Nashville, and the Western Pacific. The employees' representatives were first heard, their argument being to the effect that living costs were increasing, that employees in outside industries had received wage increases, and that therefore maintenance employees should receive increases. They also brought up the "living wage" theory, which has figured prominently in past proceedings before the Board.

Numerous roads in the U.S. have recently granted small increases to various classes, the most notable being the Northern Pacific's increases to maintenance men, as follows: bridge and building foremen and assistants, \$10 a month; fence gang foremen, section foremen and assistants, \$6.84 a month; mechanics, 3¼c an hour; track laborers, 2c an hour, and track, bridge and tunnel watchmen, 2c an hour. The Philadelphia & Reading has granted clerical employees an increase of 3c an hour, and the Wabash has granted increases as follows: section foremen, \$4 to \$17 a month; mechanics, 4c to 9c an hour, and laborers, ½c to 4c an hour.

Freight Car Location on Canadian Railways.

The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on June 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, as follows: number of cars owned, 210,339; home cars on Canadian foreign lines, 11,696; home cars on U.S. lines, 46,627; home cars on home roads, 151,816; Canadian owned foreign cars on home lines, 8,451; U.S. owned foreign cars on home lines, 36,152; total cars on lines, 196,419; per cent on lines to total owned, 93.4; deficiency on lines to total owned, 13,920; home cars in bad order, 15,597; foreign cars in bad order, 542; total cars in bad order, 15,139; per cent in bad order, 7.7; privately-owned U.S. cars on lines, 2,563; privately-owned Canadian cars on lines, 987.

The C.P.R. ticket and telegraph offices in the Y.M.C.A. Building, Moncton, N.B., will, a press report states, be moved on July 1, to the Empress Block.

British Columbia and Alberta Freight Rate Equalization.

Full information about British Columbia's, and, latterly, Alberta's, appeal to the Dominion Cabinet from the Board of Railway Commissioners' judgment in the freight rates equalization case, was given in preceding issues of Canadian Railway and Marine World, to the point where the Government decided to postpone the hearing until the termination of the present parliamentary session. A Winnipeg press report of June 11 quoted G. G. McGeer, counsel for British Columbia, as authority for the statement that July 9 has been tentatively set as the date for the hearing at Ottawa, and went on to say: "Something in the nature of a surprise was the receipt of an amended appeal in which British Columbia and Alberta, through their Attorneys General, petition the Government jointly for equalization. It had been understood previously that the Alberta Government was supporting British Columbia in some phases of its application, but it was never anticipated the two governments would issue a joint appeal. Alberta goes even further than British Columbia in its application, and asks for equalization, on a mileage basis, of all commodity rates between the east and the west. British Columbia has always enjoyed lower rates on certain commodities shipped across Canada in competition with water transportation, and Alberta is now asking that these rates be equalized.

If the last part of the report quoted is correct, it would appear that the Alberta Government is asking the Dominion Cabinet to abrogate a principle on which the Board of Railway Commissioners has based many decisions, i.e., that a railway may put in lower than standard rates, to meet water competition, without being guilty of discrimination. Rates from Eastern Canada to the Pacific coast, to meet water competition, are such, and a demand for equalization of westbound rates as between B.C. coast and interior points is that the introduction of a water-compelled rate be considered discriminatory, and is, further, one that could not be granted without producing a real upheaval in rate structures, if the principle necessarily introduced were applied throughout the country. The more one considers the possibilities in connection with sectional rate reduction demands and appeals to governments, the more is one seized of the importance of leaving rate regulation where it belongs, viz., with the Board of Railway Commissioners.

Flood Damages in Manitoba and Alberta.—Further heavy rainstorms are reported to have done considerable damage to the Canadian National Rys. in Manitoba, the most serious damage being on the Winnipeg-Verdun line, where 12 bridges are reported to have been carried away on June 2, between Dunrea and Margaret, a distance of 6 miles. The rainfall appears also to have been exceptionally heavy at the end of May and the beginning of June in Southern Alberta, and to have caused washouts on the C.P.R. Crowsnest pass line, bringing about the suspension of traffic for several days. The flooding and damage in other districts of southern Alberta, is reported have caused the Trans-Canada and Imperial Limited trains to be detoured through Lethbridge on June 1.

Canadian Pacific Railway Construction, Betterments, Etc.

St. John, N.B., Tracks.—The question of the C.P.R. tracks on Germain St. West, St. John, N.B., came before the city council there, June 9, J. M. Woodman, General Superintendent, and C. C. Kirby, District Engineer, being present. It was stated that under an agreement between the Dominion Government, the city and the C.P.R., the Government planned certain reclamation work which would have enabled the C.P.R. to remove the tracks from Germain St. West, but this work had not been done. The tracks could not be removed without doing a considerable injury to the business of the port, and the property owners were entitled to consideration. The only solution of the difficulty, it was stated, was to press the Government to complete the reclamation work. The matter will be looked into to see if some temporary relief can be provided for the property owners.

Fredericton Station.—A press report states that a contract has been let to Rhodes, Curry & Co., Amherst, N.S., for the erection of a new station at Fredericton, N.B.

Shawinigan Falls Embankment Protection.—We are officially advised that a contract has been let to the Grenville Constructed Rock Co., Montreal, for putting in rip-rap near Shawinigan Falls, Que., between miles 13 and 15, on the St. Maurice Subdivision, Quebec District. The object is to reinforce the embankments and to protect the railway's property from the action of water, which, on the completion of a power development project in the vicinity of La Gabelle, will be raised so that it will back up against the railway embankments. About 90,000 cubic yards of rock will be used in the work, which is expected to be completed by Sept. 30.

Interprovincial & James Bay Ry.—The Board of Railway Commissioners has authorized the building of bridge 62.5 over Windfall Creek, Baby Tp., Que., on the line under construction to the Quinze River and that grading has been done considerably farther.

Rouyn Goldfields.—A press report states that, as a result of a conference between members of the Quebec Government and C.P.R. officials, an investigation will be made of the Rouyn gold mining area, to decide whether it would be advisable to extend the Interprovincial & James Bay Ry., now nearly completed, to the Quinze River, a further distance of 40 miles to the center of the Rouyn district. The Quebec Government is building highways into the district, and is said to have promised to co-operate in building a railway if investigations show that it would be justified. As stated in Canadian Railway and Marine World for May, we were officially advised in April that there was no foundation for press reports that the C.P.R. was making a survey for a branch, from some point on the extension of the Interprovincial & James Bay Ry. to the Quinze Falls, into the Rouyn mining area, and that we were advised that the terminus of the line would be at the Quinze River, from which point it was expected that a connection will be given to the Rouyn area by steamboat via Lake des Quinze, Lake Expance, Ottawa River and Kenogewis River, also that this steamboat service would be operated from Gillis Bay, instead of from the outlet of Quinze Lake,

and would be independent of the railway.

Buells Creek Bridge.—The Board of Railway Commissioners has authorized the replacement of the skew half-deck plate girder span at bridge 1.3, Buells Creek, Brockville Subdivision, Ontario District.

Timiskaming Subdivision Bridge.—The Board of Railway Commissioners has authorized the removal of the timber trestle at bridge 26.5, Timiskaming Subdivision, Algoma District, and replacing it by a second hand 40-ft. deck plate girder span, removed from another point.

Rosetown Southeasterly Branch.—In 1919 the Dominion Parliament authorized the construction of a branch southerly from Rosetown, Sask., for 50 miles, and thence easterly for 30 miles, and a location survey was made in the same year. Grading was started in 1920, about 20 miles south of Rosetown, and was completed for 45 miles by the end of 1921, a portion of this being on a revised location. The section of the former location from Rosetown to mile 20.2 is to be abandoned, and the line will be linked up with the Mildren-Empress line, now under construction. The section from mile 20.2 southerly, which has been graded, is to be completed this year. The revised location joins with the originally approved location at mile 59.8, which is continued easterly to the bank of the South Saskatchewan River.

Kipp-Retlaw Line.—The location survey of this projected line from Kipp, Alta., 8 miles west of Lethbridge, northerly and easterly to Retlaw, mile 57 on the line from Suffield to Lomond, shows a total length of 39.71 miles. Some grading has been done, and it is proposed to carry the work on to the crossing of the Little Bow River, about mile 26, this year.

Wymark-Archive Line.—The location surveys for the line from Wymark to Archive to link up the Swift Current Southeasterly Branch, with the Moose Jaw Southwesterly Branch, authorized by the Dominion Parliament in 1919, shows a total length of a little over 100 miles. About 25 miles of grading have been completed, and work is reported to be in progress on a second 25 miles.

Tuffnell-Prince Albert Line.—This is an extension of the Manitoba & Northwestern Ry., and the location surveys show a line running about due northerly from Tuffnell, Sask., for 140 miles, and then westerly and southerly into Prince Albert, a further distance of 70 miles. A contract for grading the first 50 miles is reported to have been let to Grant Smith & Co. and McDonnell Ltd., Vancouver, B.C. (June, pg. 277.)

Leancoil Grade Revision.—A press report states that orders have been given for the installation of a 3-position, upper quadrant, 10-volt automatic block signal between Leancoil and Golden, B.C. The order includes 32 mechanisms, 70 relays, 18 switch boxes, relay and battery housing, etc.

Victoria, B.C., Terminal Building.—A press report states that the company proposes to go ahead shortly with the construction of a marine terminal building at Victoria, B.C. The building will, it is stated, front on Belleville St., will be 4 stories high, and will provide accommodation for all the company's offices there, including the B.C. Coast Steam-

ship Service. F. M. Rattenbury is mentioned as the architect.

Electrification in Western Mountains.—A Winnipeg press report of June 19 credits D. C. Coleman, Vice President, Western Lines, with having stated that surveys are being made of the water power available on the Columbia River, in British Columbia, in the vicinity of the main transcontinental line, and that, if traffic demands and financial conditions warrant it, a start may be made next year in electrifying sections of the main line through the mountains.

United States Railways' Financial Results.

An article in Canadian Railway and Marine World for June, concerning the U.S. class 1 railways' earnings, pointed out that in March they had the best month for a long period, and, for the first time since the Interstate Commerce Commission had fixed the fair annual return at 5½%, had exceeded it. In April, the results were still better, the net operating income being \$83,197,800, equivalent to an annual return of 6.5% on the valuation. The March earnings represent an annual rate of 5.84%. In April 1922 the net operating income was but \$49,979,000, or at the annual rate of 3.99%. Operating revenues for April were \$522,955,700, an increase of more than 25% over April 1922; operating expenses, \$403,869,000, were about 20% greater than in April 1922. Although gross earnings increased only about 25%, freight traffic, as expressed in terms of net ton miles handled, showed an increase of over 50%, the proportionately smaller increase in gross revenues being due largely to lower prevailing rates in April of this year. The extraordinary increase in freight traffic is due largely to the miners' strike being in progress in April, 1922, resulting in a large decrease in coal traffic.

For the first four months of 1923, U.S. class 1 roads secured a net operating income of \$266,246,000, representative of earnings on an annual basis of 5.49%. For the first four months of 1922 net operating income was \$210,842,900, equivalent to an annual earning rate of 4.44%. Gross earnings for the first four months of 1923 were 18.8% greater than in the first four months of 1922, and operating expenses were 18.15% greater. Traffic is still heavy on U.S. roads, with every prospect of continuing so, and continued favorable earnings seem assured.

English Channel Tunnel.—A Paris, France, cable states that plans for the tunnel under the English Channel from Dover, Eng., to Calais, France, are being completed rapidly. In a bulletin issued by the France-Great Britain Association, which is doing the propaganda work, M. Tempest, Chief Engineer of the project, discusses methods of construction, and approves of Colonel Lynde's suggestion, which has been endorsed by M. Javary, the engineer of railways in France, which will connect with the tunnel, for the opening of shafts in the middle of the channel, and working in both directions, disposing of the excavated material by deporting it in the tideway. The estimated time for the construction of the tunnel is put at anything between 5 and 8 years.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta & Great Waterways Ry.—A press report states two ballast trains are operating from the gravel pit at mile 151, and reballasting the line between Lac la Biche, mile 113, and mile 170. During 1922, a total of 179,000 cubic yards of ballast was distributed along the line, after 53,000 new ties had been put in. (May, pg. 205.)

Alma & Jonquiere Ry.—We are officially advised that the Alma & Jonquiere Ry., which is being built by the Quebec Development Co., in connection with its power development plans, at the Grande Descharge of Lake St. John, Que., starts from about a mile east of Hebertville station on the old Quebec & Lake St. John Ry., now Canadian National Rys., and will run thence northerly to Isle Maligne, about 10 miles. There will be three bridges, one across the Bedard River, between miles 9 and 10; and two to cross the Little Descharge, between miles 1 and 2, which at the point of crossing is divided into two arms separated by a considerable island. The mile-posts start at Isle Maligne, and run to the junction with the C.N.R. These bridges, which will be single track, will consist of steel superstructures resting on concrete substructures. Their dimensions will be as follows: Bedard River bridge, between stations 428+76 and 429+38; one 60 ft. deck plate girder span resting on 2 abutments, with wing walls containing 90.2 cubic yards of concrete. Little Descharge, right channel, between stations 125+45.5 and 128+85.5, three 60 ft. deck plate girder spans, resting on 3 piers and 2 abutments, with wing walls, containing 948.7 cubic yards of concrete. Little Descharge, right channel, between stations 114+76.25 and 118+03.75, four 80 ft. deck plate girder spans, resting on 3 piers and 4 abutments, without wing walls, containing 610.3 cubic yards of concrete. These three bridges are being erected as part of the railway, but a fourth bridge is being erected across the Grande Descharge as a part of the power plant. It will be double track from station 7+18 to station 11+30, with a total span of 412 ft. It will consist of two 90 ft. and one 220 ft. through truss spans resting on 2 piers and 2 abutments, with wing walls, containing 2,828 cubic yards of concrete. The contractors for grading are Gagne & Gagne, St. Felicien, Que.; the steel for the Bedard River bridge is being supplied and erected by Dominion Bridge Co., Montreal; and that for the other bridges by Canadian Bridge Co., Walkerville, Ont. (June, pg. 279.)

Burrard Inlet Tunnel and Bridge Co.—A press report states that the C.P.R. has entered an objection to the passing by the Dominion Government of the plans for the proposed bridge across the second narrows of Burrard Inlet, Vancouver, B. C., in so far as its approach over the C.P.R. tracks is concerned. The plans provide for a 22 ft. clearance overhead, on columns 60 ft. apart, and it is said that the C.P.R. asks that the supporting columns be placed 99 ft. apart, so as to clear its right of way entirely. (May, pg. 205.)

Duluth to Port Arthur.—Robert Waldron, Duluth, Minn., who is promoting the construction of a railway from Duluth to Port Arthur, Ont., using the abandoned Duluth & Northern Ry. as a foundation, was in Port Arthur, June 18, and

is reported to have discussed the project with the city council, and the chamber of commerce. It is proposed to form the Duluth & Ontario Ry. Co., with the following officers and directors: President, R. Waldron; Vice President and Superintendent, D. W. Owens, Biwabik; Secretary and Auditor, H. W. Conrad, Duluth; Treasurer and Purchasing Agent, W. L. Allerton, Duluth; director, J. S. Sabrer, Pierre, S.D. F. W. Grassweller, Duluth, is the company's Attorney, and R. M. Hunter is Right of Way Agent. Mr. Waldron is reported to have stated that trains will be operated on the existing line, which runs from Knife River, northerly towards the Canadian boundary, for 102 miles, by Aug. 1, and that financial arrangements were in progress for the construction of an extension of the line from the present end of track towards the International Boundary at Pigeon River, to be started this year. Nov., 1922, pg. 568.)

Edmonton, Dunvegan & British Columbia Ry.—A press report states that a survey party under Major Crysedale of Vancouver, has started work on a general survey of the country between Spirit River, Alta., which is at present reached by the E. D. & B.C. Ry., and the British Columbia boundary at Pouce Coupe, and thence across to Pine Pass, B.C., also that the survey is being made in the interests of the C.P.R., which is operating the E. D. & B.C. Ry., and that the C.P.R. has eyes on the Pacific Great Eastern Ry., which is being operated to Quesnel, is practically fully graded to Prince George, and has an extension located through the Pine River Pass to Pouce Coupe. Another press report states that a survey party was working westerly from Hudson's Hope, on the Peace River, May 31, having started from Spirit River, and expected to cover about 250 miles farther west during the season. (June, pg. 279.)

Esquimalt & Nanaimo Ry.—The Canadian Bridge Co., Walkerville, Ont., is reported to have started work on the erection of the final section of the steel work of the Johnson St. bridge at Victoria, and to expect to have it completed by Aug. 30. The section now being built will carry the permanent railway tracks, the southern half of the bridge on which the railway tracks are laid temporarily, being intended to carry general traffic only. (June, pg. 279.)

Fort Alexander Ry.—The Manitoba Pulp & Paper Co., which controls the Fort Alexander Ry. Co., incorporated recently by the Manitoba Legislature to build a railway from near Beaconia, on the Canadian National Rys. Grande Beach line, to Fort Alexander, where it is proposed to erect a pulp mill, is reported to have arranged for placing a \$3,000,000 issue of bonds on the market for railway construction purposes. (May, pg. 205.)

Michigan Central Rd.—Preliminary work is reported to be in progress for the construction of the substructure of the new bridge at Niagara Falls. The work includes the scaling of the cliffs on both sides of the gorge, making them practically perpendicular, and the placing of a concrete face thereto. The work on the New York side of the river is being done by the Gass Thurston Co., Detroit, Mich., and that on the Ontario side by

Federal Construction Co., Toronto. The existing bridge is to be removed, and a project is reported to be under consideration for purchasing it, and re-erecting it as a general traffic bridge.

A contract is reported to have been let to the Dominion Construction Co., Toronto, for a considerable portion of the work of constructing new yards at St. Thomas, Ont. (June, pg. 279.)

North Sydney to Baddeck, etc.—A press report states that V. MacFadden, engineer, Dominion Coal Co., North Sydney, has submitted to the Nova Scotia Government a project for building a railway, to be operated by electricity, from North Sydney to Baddeck, and thence to English Harbour in one direction, and to Iona, on the Canadian National Rys. in another.

Pacific Great Eastern Ry.—The British Columbia Minister of Railways is reported to have announced recently that construction work had been suspended during the past 8 or 10 months. Grading has been completed to Cottonwood Creek, and track has been laid to 14 miles beyond Quesnel. Plans for further construction had not been decided upon. Another press report, which is unconfirmed, states that the C.P.R. has some idea of taking hold of the line and extending it to a connection with the Edmonton, Dunvegan & British Columbia Ry. (June, pg. 279.)

(See also Edmonton, Dunvegan & British Columbia Ry.)

Quebec and Chibougamou Ry.—G. R. Hall Caine, a member of the Imperial Parliament, who arrived in Montreal from England, June 12, is reported to have stated prior to sailing that he would negotiate with the Dominion Government respecting the construction of about 200 miles of railway to open up new areas for settlement. He is reported to have referred, at Montreal, to the development of pulp wood areas for the supply of the British market, and to have stated that it is proposed to build a railway from Port Alfred, Que., by the Peribonka River, for 120 miles in three sections of 40 miles each. The district through which the line would run is said to be suitable for agricultural settlement. Port Alfred is at mile 18, from Ha Ha Bay Jct., on the Roberval-Saguenay Ry., on the navigable waters of the Saguenay River, and the Peribonka River flows from the north in to Lake St. John. The Mistassini River flows northward, into Lake Chibougamou. The charter of the Quebec and Lake Chibougamou Ry. Co., which was granted by the Quebec Legislature in 1919, covers this construction. Full details of this project, and of surveys of the projected railway from Quebec to Lake Chibougamou were given in Canadian Railway and Marine World for Dec., 1920. pg. 655. (Nov. 1922, pg. 568.)

St. John & Quebec Ry.—A resolution was passed in the House of Commons, June 1, authorizing an extension of time to Dec. 31, 1925, for the construction of the St. John & Quebec Ry., now terminating at Centerton, N.B., northerly to Andover, about 26 miles. The passing of the resolution, the Minister of Railways explained, was necessary owing to the fact that a subsidy was involved. The railway is owned by the New Brunswick Government, and is operated by the

Canadian National Rys., under an agreement for 60% of the gross receipts. A bill to carry into effect the terms of the resolution was passed through its various stages the same evening. (June, pg. 279.)

Theodosia Arm, B.C.—A press report states that a logging railway is being built at Theodosia Arm, B.C., by Merrill & King Logging Co.

Timiskaming & Northern Ontario Ry.—We are officially advised in connection with the Swastika-Larder Lake line, which the Timiskaming & Northern Ontario Railway Commission is about to build under the Nipissing Central Ry's charter that the route selected starts from the T. & N. O. Ry., at Swastika station, mile 165.8 from North Bay, and extends easterly through Teck, Lebel, Gauthier, and McVittie Townships, passing through the heart of the Kirkland Lake mining district. It is not probable that the line will be built farther east than McVittie Tp. at present, and a terminus will be laid out there temporarily convenient to the Larder Lake gold mining properties. Maximum gradients of 1.5 or 2% and maximum curves of 10° will be used in order to reduce the cost of construction. The grading quantities will be approximately 12,000 cubic yards a mile, and there will be no large steel bridges. We are also officially advised that a contract for the construction of this line has been let to R. A. and I. A. Sinclair, Toronto. The contract will be carried out by Sinclair Construction Co., Ltd., successors to the late Angus Sinclair, which has its head office in Toronto. The construction headquarters on the work will be at Swastika, and the work will be under R. A. R. Sinclair's direct supervision. He will be assisted by A. T. Connacher, General Superintendent, who held the same position with Angus Sinclair on all his construction work. The general contractors will sublet the grading, concrete and bridge work, also the fencing, but will do the track laying and ballasting with its own force.

Vancouver Harbor Railway.—A recent press report stated that tenders were under consideration for the supply of steel rails, fastenings, frogs, switches, switch stands, etc., for the terminal railway being built by the Vancouver Harbor Commission, in connection with the Ballantyne Pier, Vancouver. (Nov. 1922, pg. 568.)

Welland to Port Colborne, Ont.—We are officially advised that Port Colborne, Ont., residents want to secure the construction of a spur line from Welland into that town, and that a conference was held recently at which the matter was discussed with representatives of the Michigan Central Rd. and the Toronto, Hamilton & Buffalo Ry. The C.P.R. would be interested in the construction of such a line, through its share in the ownership of the T.H.&B.Ry. The matter is being dealt with by J. N. Beckley, President, T.H.&B.Ry.

Grant Hall Prize.—The medal offered for competition at the Bishops College School, Lennoxville, by Grant Hall, Vice President, C.P.R., and chairman of the school directors, for proficiency in speaking at the meetings of the school debating society, during 1922-3, has been awarded to G. N. Moxley.

During a heavy wind and hail storm in Saskatchewan, June 6, the roofs of six freight cars in a moving C.P.R. train were blown off.

Exemption of Government Railways, Etc., from Sales Tax.

In the article on this subject, in Canadian Railway and Marine World for April, on pg. 160, it was stated that a letter had been received from the Customs and Excise Department, which read in part as follows:—"On account of the changed status of the Canadian Government railway group, which took place on Jan. 20 last, the Department has ruled that, with effect from that date, the exemption enjoyed prior to that date by certain lines of the Canadian National Rys. would become non-effective, and that goods purchased by the Canadian National Rys. for all lines are taxable. This ruling does not alter the exemption in respect of goods purchased by the Timiskaming & Northern Ontario Ry., and the Hydro Electric Power Commission of Ontario, when such goods are for their own use."

It was pointed out that the Customs Department letter quoted showed that the Minister of Customs was misinformed, when he sat in the House, a short time before, that, "the sales tax is being collected from or paid by all railways."

Early in April, Canadian Railway and Marine World was advised by the Customs Department that the question of sales tax on purchases by railways operated by the Hydro Electric Power Commission of Ontario was receiving attention, and that the question whether or not the railways were owned by the Commission was the point which the Department was determining. Canadian Railway and Marine World was advised on April 24 that "Sales to the Toronto & York Radial Ry. Co., whether for the sole use of that railway, or for the purpose of resale, are held to be properly subject to payment of sales tax." We have no information as to whether sales to the Guelph Radial Ry., which is operated by the Hydro Electric Power Commission for the City of Guelph, and to the Hydro Electric Railways, Essex District, comprising the lines formerly owned and operated by the Sandwich, Windsor & Amherstburg Ry., and now operated by the Commission for various border municipalities, are held to be subject to payment of sales tax.

Canadian Railway and Marine World has been further advised that goods bought by the Timiskaming & Northern Ontario Ry. and by the Hydro Electric Power Commission of Ontario for their own use, and not for resale, are exempt from sales tax. We presume that this reference to the Hydro Electric Power Commission of Ontario applies to its purchases other than for railways which it operates.

Since the foregoing matter was put in type, the following information has been received from the Customs and Excise Department:—"Sales to electric railway lines, formerly operated by the Toronto and York Radial Ry. Co., are held to be subject to sales tax. Sales to electric railway lines operated by the Hydro Electric Power Commission of Ontario, but which are owned by the cities of Guelph, Walkerville and Windsor, are subject to payment of sales tax. As a result of an investigation, it has been definitely established that the electric railways operated by the Hydro Electric Power Commission are not entirely owned by the Commission. The Hydro Electric Power Commission of Ontario is a Provincial Government institution. Sales made to this Commission,

for its own use, and not for resale, are, therefore, held to be exempt from sales tax."

The resolution of which the Finance Minister gave notice in the House of Commons on May 11, contains the following: "(4) The taxes imposed by sections 16A, 19B, 19BB and 19BBB of the Special ar Revenue Act shall apply to goods sold or imported by: (i) His Majesty in the right of His Majesty's Government of Canada; (ii) His Majesty in the right of His Majesty's Government of any province of Canada, for the purpose of resale; (iii) Any railway operated by or under the authority of the Legislature or the Lieutenant Governor in council of any province; (iv) Any commission, board or public utility which is operated by or under the authority of the Legislature or Lieutenant Governor in council of any province." The foregoing amendments are to go into force on Jan. 1, 1924.

The Customs & Excise Department has further advised Canadian Railway and Marine World as follows:—"The amendments respecting tax on sales go into effect on Jan. 1, 1924. The ruling exempting sales to the Hydro Electric Power Commission of Ontario, for its own use and not for resale, remains in force until that rate."

Freight and Passenger Traffic Notes.

The Canadian National Rys. have changed the starting time of the Continental Limited from Vancouver, from 7.45 p.m. to 9.50 p.m.

The Canadian National Rys. inaugurated a direct train service from Montreal to Murray Bay, Que., June 11. Formerly passengers had to change at Quebec.

The rate for transporting automobiles between New Brunswick and Prince Edward Island, and vice versa, by the car ferry Prince Edward Island, is reported to have been reduced from \$6 to \$4.

Canadian National Rys. freight officials at London, Ont., are reported to have stated that during May over 30,000 freight bearing cars passed through the yards there, the largest number ever recorded in one month.

The C.P.R. is reported to have made a new rate for transfer of automobiles by boat between various points in British Columbia, such as Kuskanook and Nelson; Robson West and Arrowhead; Nelson and Kaslo, and other points.

The Canadian National Rys. started a fast week day train between Lindsay, Peterborough and Toronto, on June 23. Its schedule is, leave Peterborough 7.10 a.m., reach Toronto 10.15 a.m.; leave Toronto 7.05 p.m., reach Peterborough 10.30 p.m.

The Canadian National and Canadian Pacific Rys. are reported to have put into effect on June 15, a 33½% reduction on through carload lots of settlers' effects from St. Paul, Minneapolis and Duluth to the prairie provinces. This reduction follows a similar one on carload lots of settlers' effects from border points which became effective May 1.

C.P.R. Colonization Work.—Since 1881 the C.P.R. has expended over \$60,000,000 for colonization, land settlement, irrigation and similar work, directly accounting for the occupation of over 20,000,000 acres of farm land in western Canada.

Neebing Terminal, Canadian National Railways.

It is axiomatic in the science of railway operation that congested and inadequate terminal facilities render impossible the handling of traffic with the maximum efficiency and economy, and, conversely, that well planned and adequate terminal facilities go a long way in promoting the variety of railroading which is successful in reducing transportation costs to the public.

Owing to the development in the western provinces and the annual increase in the acreage seeded in the prairie provinces, the traffic passing through the gateway at the head of Lake Superior has been steadily growing larger each year, with the result that railway and terminal facilities at Port Arthur and Fort William would soon be heavily taxed to properly meet the traffic requirements, particularly during the busy autumn months. In the case of the Canadian National Rys., it became evident to the management that larger and improved terminal facilities would soon be required to efficiently and expeditiously handle the heavy grain and general traffic passing through the twin ports, through which, in addition to a large westbound traffic in coal and merchandise, the great bulk of the prairie grain passes on its way to eastern and Euro-

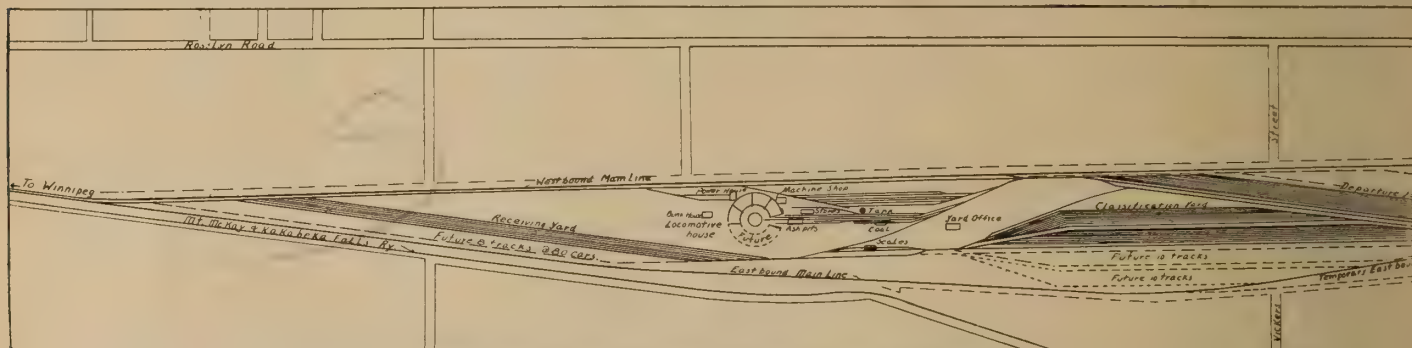
pean markets. Realization of the impending need for enlarged terminal facilities resulted in the C.N.R. management undertaking the construction of a large terminal near West Fort William, location and layout plans of which are given herewith.

tions taken by the two routes in leaving Fort William. The former Grand Trunk Pacific line from Mission terminal to Sioux Lookout is now known as the Graham Subdivision, Fort William Division, Manitoba District, Canadian National Rys., while the Canadian Northern line from Port Arthur to Atikokan, the first divisional point west of Port Arthur on the way to Winnipeg, is known as the Kashabowie Subdivision, Rainy River Division, Manitoba District, Canadian National Rys. From Mission terminal to Sioux Lookout is 189.4 miles, and from Port Arthur to Atikokan 142.6 miles. From Mission terminal to Winnipeg, via Sioux Lookout, is 441.5 miles, and from Port Arthur to Winnipeg, via Atikokan, is 438.7 miles.

As stated in Canadian Railway and Marine World for Oct., 1922, p. 516, the Canadian National Rys. are building a line diversion on the Kashabowie Subdivision between mile 35.65 and 38.59 west of Port Arthur, and also a connection between the Graham and Kashabowie Subdivisions, the latter connection leaving the Graham Subdivision at mile 30.52 west of Fort William and entering the revised Kashabowie Subdivision line 4,589 ft. west of mile 35.65 west of Port Arthur. The connection will be 0.66

to build the new terminal and the connection as outlined above, and it is felt that this disposition of the problem will result in future traffic being handled with maximum efficiency and economy.

The land secured for the new facilities, which will be known as the Neebing terminals, is in Neebing Township, the area being about 3 miles long and $\frac{1}{4}$ mile wide. All street and road allowances were closed upon acquisition of the property by the railway. On the location plan the new facilities are shown at the northwest side, between the diamond crossing made by the intersection of the Canadian National Kashabowie Subdivision line with the C.P.R. double track line, and Twin City Jct., where the Canadian National Rys. North Lake Subdivision line leaves the Kashabowie Subdivision. The new terminals are shown in larger scale on the layout plan, on reference to which it will be seen that in the immediate future there will be provided an eastbound receiving yard with 8 tracks, each track having capacity for 80 cars, making a total capacity of 640 cars; an eastbound classification yard with 20 tracks, 50 to 75 cars capacity each, making the total capacity 1,250 cars, and a westbound departure yard of 13 tracks, each having capacity



Layout Plan, Neebing Terminal, Canadian National Railways.

mile long, and will be carried over the Mattawin River, and the C.P.R. double track line to Winnipeg, which parallels the river between the Canadian National Graham and Kashabowie Subdivisions at that point, on a plate girder bridge 700 ft. long. This connection is intimately related to the terminal development scheme at West Fort William, as, when the connection and the terminal development are both completed, eastbound traffic on the Graham Subdivision will be diverted to the Kashabowie Subdivision, via the new connection, and operated via the Kashabowie Subdivision to the head of the lakes, while westbound traffic destined for movement via the Graham Subdivision will be operated over the Kashabowie Subdivision to the connection. The Graham Subdivision mileage between Fort William and the point of the new connection's entry, on which are several temporary trestles, will be abandoned.

The two routes, that furnished by the original Canadian Northern Ry., and that by the original Grand Trunk Pacific branch, were built to operate in competition, and not as co-ordinated lines of one railway, and the situation is but one of a large number of similar ones facing the C.N.R. management, where duplicated facilities have to be co-ordinated as well as possible. Careful studies of the situation resulted in the decision

for 80 cars, making a total capacity of 1,040 cars. There will also be a car repair yard with 6 tracks, and a total capacity of 108 cars, so that the total standing capacity of the yardage to be constructed immediately will be a little over 3,000 cars. Provision for future extension of the yard facilities is shown in the layout plan. The yard track to be laid in the immediate future, together with locomotive house and other trackage, will require the building of 43.8 miles of track. The yard tracks will be laid with 80 lb. steel.

The chief unit in the locomotive terminal facilities to be provided will be a 24-stall locomotive house, 22 of the stalls to be 100 ft. long and the remaining two, 130 ft. long, drop pits to be installed in the two long stalls to handle locomotive truck and tender wheels. The house will have concrete foundations on piling, brick walls, timber frame and mill type roof, with 5-ply tar and gravel covering, and will be divided into 4 bays of 6 stalls each, by fire walls equipped with fire doors. In general construction, the new house will greatly resemble that built in 1921 at Moncton, N.B., as described and illustrated in Canadian Railway and Marine World for Dec. 1921, pg. 625. Provision for future extension, by completing the southern side of the house circle, is shown on the layout plan. The ashpit, near the locomotive house,

The Canadian National Rys. have two routes from the head of Lake Superior to western Canada. The southern route, via the original Canadian Northern line, has Port Arthur for its eastern terminus, the terminal facilities consisting of yards, locomotive maintenance facilities for somewhat more extensive locomotive repairs than those commonly classed as running repairs, a large terminal elevator, coal and ore dock, freight sheds for interchange of freight with steamship lines, and trackage serving these facilities. The northern route is by what was formerly the Grand Trunk Pacific Ry., Fort William Branch, from Fort William to Sioux Lookout on the National Transcontinental Ry., and thence via the latter railway to Winnipeg. This G.T.P. Fort William Branch has its eastern terminus, known as the Mission terminal, at West Fort William, there being yards, locomotive house, a large G.T.P.R. elevator, coal docks and freight sheds. The Canadian Northern Ry. Port Arthur terminals, and the Grand Trunk Pacific Mission terminal are shown on the location plan, which also shows the direc-

will be arranged to serve 4 tracks. The house will be equipped with pipe lines, for steam, water and compressed air, and the steam line branches will be equipped with flexible joints for locomotive connections. Provision has been made for adequate artificial lighting and for the installation of equipment for carrying on running repairs. It is not anticipated that locomotive work heavier than running repairs will be carried on, due to the proximity of the back shop facilities at Port Arthur. The turntable serving the locomotive house will be 85 ft. long, twin span, the concrete turntable pit being on piling, and the table will be operated by electric motor.

The machine shop, at the north side of the locomotive house, and connected thereto, will be of the same type of construction as the locomotive house, and will be 80 x 50 ft. It will be equipped with the usual machines necessary for the efficient handling of running repairs, with modern sanitary arrangements, and will contain a thoroughly equipped first aid room.

The power house, of similar construction to the locomotive house, and connected thereto as shown, will be 60 x 40 ft. The boiler room portion will be 40 x 40 ft., and will have its floor depressed 6 ft. below the base of rail level in the locomotive house. The primary installation will consist of two 150-h.p.

tracks, and will be of 350 tons capacity, electrically operated. The sand supply equipment will be constructed as a part of the coaling plant, with separate structures for wet sand storage and for drying. The sand will be elevated to the dry sand bin by compressed air.

Track scales, of 150 tons capacity, will be located, as shown by the layout plan, in the neck between the receiving and classification yards.

A yard office, 85 x 30 ft., of brick construction, on concrete foundation, will be located as shown, and will provide offices for the yardmaster and his staff, and for the grain inspection staff, and will also contain a conductors' registration room and a room for switchmen.

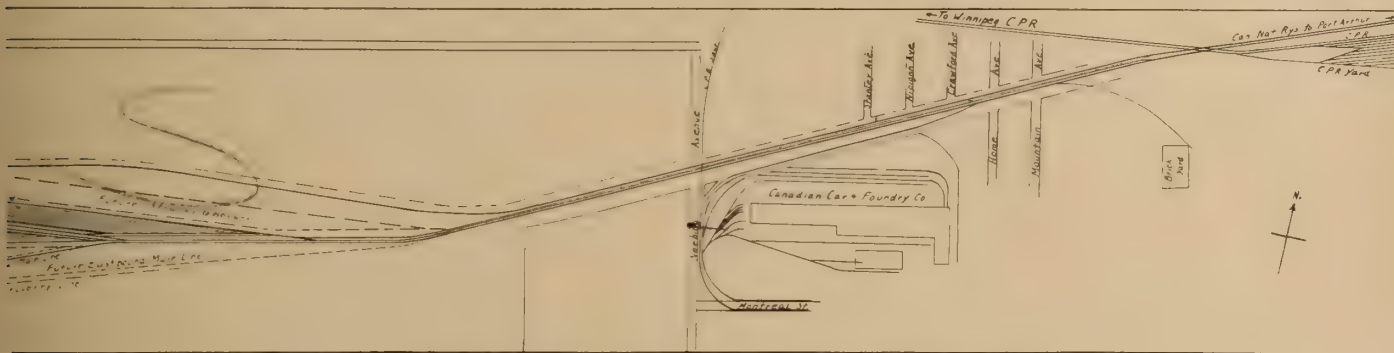
A bunk house, with sleeping accommodation for 20 men, will be located at the west side of the locomotive house.

Water for the terminal will be supplied by the City of Fort William, from its Loch Lomond plant, from which the water, of exceptionally high quality for both domestic use and locomotive boiler supply, is piped by gravity. A 150,000 gall. steel tank will be erected to the east of the stores building and will be served by an 8-in. cast iron main, 2.36 miles long, connected to the city's high pressure main at Neebing Ave. Connections will be run off direct from the main, to serve the locomotive house for washout purposes, and to serve fire hydrants,

line from the locomotive compressor before the terminal test of the brakes can be made.

The layout plan shows that the westbound main line runs to the north of the yard area, while the eastbound main line is located to the south. The areas bounded by the broken lines indicate the provision made for increasing the yard trackage when such becomes necessary. The westbound and eastbound main lines converge at the east end of the property before the crossing with the C.P.R. double track line is reached, while at the west end convergence is secured but a short distance west of the eastbound receiving yard. In locating the yards, the layout was planned to fit the topography of the ground as much as possible, no drainage facilities being required, with the exception of several ditches and a few small culverts. The grading for the initial units will amount to about 175,000 yards.

In operating these new facilities, grain trains from the west, whether coming from Winnipeg via the southern route, or via the Graham Subdivision and the connection to the Kashabowie Subdivision, will stop at the eastbound receiving yard, from whence the cars will be switched over a hump, or by flat switching, into the classification yard, where they will be classified for the various elevator and other terminal



Layout Plan, Neebing Terminal, Canadian National Railways.

locomotive type boilers, and provision will be made for doubling the boiler plant capacity when necessary. The power house will have a 125-ton capacity coal hopper in the rear, served by trackage as shown in the layout plan, the hopper track to be 13 ft. above the boiler room floor. The power house compressor room will be 20 x 40 ft., and the initial installation will be an electrically driven air compressor of sufficient capacity to meet the locomotive house, machine shop and other requirements. The heating system for the power house, locomotive house and machine shop will include low pressure steam coils in the pits and along the walls in the locomotive house, with vacuum returns.

The stores building, to the east of the locomotive house and north of the locomotive house entry and exit tracks, will be of brick construction, 100 x 30 ft. The main room in this building will be for miscellaneous stores, 30 x 40 ft., and in addition the building will contain the locomotive foreman's, clerk's, storekeeper's and timekeeper's offices, and locomotive crews' registration room, locker room and rest room. A modern oil storage tank installation will be made in the basement, with a complete set of pumps for handling oil.

The coaling plant, to the south of the tracks serving the locomotive house, will supply coal to locomotives on three

standpipes, ashpit, and other facilities, although cross connections, by-passes and valves will be installed, so that in case of damage to a portion of the main, water can be secured from the tank.

A sewer system will be installed, with an outflow into the Kaministiquia River, the location of which, in relation to the terminals, is shown in the location plan. This system will supply drainage from the locomotive house, turntable, ash pit, stand pipes, etc. Septic tanks and filtration system will be installed to take care of the sewage from the lavatories in the various buildings.

Electric current for power and lighting will be bought in Fort William, and will be received at 22,000 volts. This will necessitate the construction of a power line to the yard. Transformers will be located at strategic points within the terminal area, to step down the current as required for serving the various units. The locomotive house and other buildings, the area in which hump switching operations will be carried on, and the west ladder of the westbound departure yard, will be lighted electrically. An electrically operated compressor, with tripping system, will be installed at the west end of the westbound departure yard, to charge up the long trains made up for the west before the locomotive couples on, so that no time will be lost in charging the train

tracks at Port Arthur and Fort William. The hump for gravity switching will be southeast of the locomotive house, between the eastbound receiving yard and the classification yard, and a track for flat switching will be built around the hump, for use when business through the yard is such that flat switching will be more economical than the use of the hump. From the classification yard, transfer trains will take the cars to the various yards and elevator tracks in Port Arthur and Fort William. Returning, the transfer trains will bring the empty cars, and cars loaded with coal and other freight received from lake steamships, to the westbound receiving, classification and departure yards, where they will be made up into trains for westbound movement. The routes to be followed by road locomotives, in coming to the house after cutting off from their trains, or in leaving the house to proceed to their trains, are evident from the track arrangement shown in the layout plan.

When the new terminal is completed and placed in operation, all freight trains on both routes, except through freight and way freight trains, will terminate there, instead of at the Mission and Port Arthur terminals, as at present. Passenger business, east and westbound, will not affect the new yard or locomotive house, and passenger loco-



Location Plan, Neebing Terminal, Canadian National Railways.

motives will be handled by the locomotive terminal facilities at Port Arthur. Fast freight trains will be handled at Port Arthur, as will also the way freights, and the locomotives for these trains will be handled at the Port Arthur locomotive house. The locomotive terminal facilities at Mission terminal will be abandoned, and the equipment transferred to the new locomotive house, machine shop and power house. The present yards at Mission terminal and Port Arthur will remain practically as they are, for handling business at those points.

The location plan shows clearly the relationship of the new terminals to those existing at Port Arthur and Fort William, and the strategic location obtained for the new facilities is evident. It is also evident that the new yards will round out the terminal system, and by serving as a large primary classification area for cars destined for the numerous elevators along the water front, for those containing freight other than grain for lake furtherance, and for those for industrial tracks in Port Arthur and Fort William, will create smooth and efficient handling of eastbound traffic. Similarly, for westbound traffic, the new terminal will serve as a large final classification area for empty cars, and cars containing coal and other freight from lake steamships, which moves through these ports in large volume. The construction of these large yards, together with the provision of adequate locomotive handling facilities, constitutes an assurance that the rapidly growing traffic through Fort William and Port Arthur will not bring about a state of terminal congestion, and is thus an assurance that the inefficiency and expensiveness invariably caused by terminal congestion will be avoided.

As stated above, the construction of these terminal facilities is directly correlated to the building of the cut-off connecting the Graham and Kashabowie Subdivisions, and it is evident that this work, which will obviate the necessity for operating the portion of the Graham Subdivision to be abandoned, and which will consolidate the terminal handling work for both the southern and northern routes, will produce important operating economies. The co-ordination of line and terminal facilities, which were planned originally to operate in competition, constitutes a problem which is difficult of solution, in the very nature of things, but there can be no doubt that the solution worked out by the C.N.R. management in this particular case will bring about all the economy possible in the operation of the two routes from the head of the lakes to Winnipeg.

At the time of writing, good progress is being made with the work, and although construction was necessarily slowed down to some extent during the winter, it is the intention to have the new terminal ready to begin operation in time to handle the 1923 grain crop. Work is also proceeding on double tracking the line from Twin City Jct. to Port Arthur, and also on the grading for the connection between the Graham and Kashabowie Subdivisions, the latter work being done by contract. Tenders have been called for on the steel work for the 700 ft. plate girder bridge which will carry the connecting line over the C.P.R. double track line and the Mattawin River. All work at the terminal is being done by railway forces, with the exception of the pipe line con-

struction and the water tank erection, which are being done by contract.

The work is being carried on under the direction of C. B. Brown, Chief Engineer, Operation Department, C.N.R., by the Canadian National Rys. Western Lines engineering organization, under the supervision of H. A. Dixon, Chief Engineer, Western Region. S. B. Wass, Terminal Engineer, who was also in direct charge of the terminal development work at Moncton, N.B., is in direct charge of this work.

Traffic Orders by Board of Railway Commissioners.

Express Rates on Fish from Northern Alberta.

33,692. May 25. Re application of Alberta Fish Co., for the same express rates from fish shipping points north of Edmonton, Alta., to Chicago as are applied from British Columbia points. Upon hearing the matter at Edmonton, Sept. 11, 1922, the Alberta Fish Co. and the Dominion and the Canadian National Express Companies being represented, and what was alleged; and upon the report and recommendation of its Assistant Chief Traffic Officer, the Board orders that, effective on or before July 1, 1923, the following rates, in cents per 100 lb. by express, be published on fish (except live fish), in carloads, minimum weight, 20,000 pounds, on classification weight basis, to Chicago, Ill., viz., from Caslan and Lac la Biche, Alta., 415. From Assineau, Driftpile, Faust, Indiana, Kinuse, Sawridge, Wagner, Wide-water, Alta., 435.

Maine Central Railroad Tariffs.

33,709. May 31. Re application of Maine Central Rd. Co., under the Railway Act, 1919, sec. 323, for approval of bylaws passed May 9, 1923, authorizing G. H. Eaton, Freight Traffic Manager, to determine and fix tolls to be charged for freight and milk traffic carried by the company, and M. L. Harris, General Passenger Agent, to determine and fix the tolls to be charged for passenger traffic carried by the company, and to specify the persons to whom, the places where, and the manner in which such tolls shall be paid; and authorizing L. Snow, Chief of Tariffs, and said M. L. Harris, to prepare and issue such tariffs. Upon the report and recommendation of its Assistant Chief Traffic Officer, the Board orders that the said bylaws be approved, and that order 25522 and 26122, dated Oct. 10, 1916, and May 16, 1917, made herein, be rescinded.

C.P.R. Ambulance Classes.—The prizes and certificates awarded, following the examinations in first aid work, to the classes conducted for employees of the C.P.R. Angus shops, Montreal, were presented to the successful competitors by J. Burns, Works Manager, June 1. The classes were conducted by W. Mansell, a member of the team which in 1918 and the two following years won Lord Shaughnessy's shield for efficiency in first aid work, against teams from all over the Dominion. Of the awards, 28 were for first year work; 27 for second year work; 4 for third year work; and 7 for the work of subsequent years. One of the men, who received the bar for passing more than 4 years' work, has 14 of them.

The Newfoundland Railway Situation.

The Newfoundland Legislative Assembly as constituted at the general election in May, when Sir Richard Squires' government was sustained by 23 to 13, met on June 6. The chief business of the session is the agreement made between the Newfoundland Government and the Sir W. G. Armstrong Whitworth & Co., London, Eng., the Imperial Government being a party as guarantor of bonds, for the development of a power plant on the Humber River, and the establishment of pulp and paper mills on a large scale, with the carrying through of which it is understood that a complete settlement of all outstanding matters connected with the Newfoundland Ry., will be effected with the Reid Newfoundland Co.

The Humber River development project will, it is reported, involve the expenditure of from \$20,000,000 to \$25,000,000 and to aid in raising the necessary capital the Imperial Government is guaranteeing £2,000,000 of 25-year bonds, and the Newfoundland Government agrees to guarantee \$9,000,000 of 20-year sinking fund bonds. The proceeds of the Newfoundland guaranteed bonds are to be expended in construction in the Humber River Valley, and the proceeds of the Imperially guaranteed bonds are to be expended in Great Britain, on plant and machinery. Work has been started on the construction of a spur line to the site of the development, and a contract is reported to be in process of arrangement, with Major General J. W. Stewart, Vancouver.

A press report stated that in connection with the introduction of the legislation confirming the agreement for the power plant construction, on June 14, it was announced that the Government and the Reid Newfoundland Co. would withdraw all claims against each other in respect to the Newfoundland Ry., and that in consideration of the payment by the Government of \$2,000,000 the company would transfer to the Government all its rights in the railway, its 8 coastal steamships and its drydocks at St. John's, together with other property.

Transportation of Explosives, Etc., by Freight.

The Board of Railway Commissioners passed general order 382, May 11 as follows:—Amending Rules and Regulations for Transportation of Explosives and Other Dangerous Articles by Freight, by striking out rule 1685 and substituting therefor the following:—"1685. (1) On lines where regular trains are operating in freight service only, cars containing explosives must not be hauled in a train that carries passengers.

(2) Where only a mixed train service is operated, or where passengers are carried in a caboose car of a freight train—“(a) a car containing a shipment of explosives (not exceeding 5,000 lb.) may be hauled, provided the explosives are contained in but one car, the said car to be so placed in the train that not less than 6 freight cars are between it and the car carrying passengers, and not less than 2 freight cars between it and the locomotive hauling the train.

“(b) a car containing a freight shipment of explosives (not exceeding 1,000 lb.) may be hauled, provided the said car

be so placed in the train that not less than 3 freight cars are between it and the car carrying passengers and not less than 1 freight car between it and the locomotive hauling the train.

“(c) Provided, further, that in the case of a shipment exceeding 5,000 lb., or should there be 2 or more cars containing explosives at any one time, a special train must be run to carry such shipments over the branch or mixed train run.

“(d) Whenever it is practicable to do so, cars containing explosives must be placed between freight cars not bearing 'acid' or 'inflammable' placards. Cars containing explosives must have air and hand brakes in service.”

Greater Winnipeg Water District Railway Operation, Etc.

In addressing the members of the Greater Winnipeg Water District Board, the Mayor of Winnipeg referred to the position and future prospects of the railway from St. Boniface to Shoal Lake. He is reported to have stated that the line was only saved from being scrapped in 1921, after very long and careful deliberation. As a result of the economies made in its management and operation, the loss in operation would be reduced from \$77,000 to \$40,000. It was anticipated that in a year or two the railway would pay its way. The successful operation of a railway line depends on colonization of the country, and a real and permanent improvement cannot be made in the revenues of the line until the land through which it runs is under the Board's authority. The Board should try to obtain a land grant. An effort was made to obtain one land grant from the Dominion Government, but it was unsuccessful. If the railway is to be made of real service, the Board must have the land under its own direction, and so be in a position to encourage dairying and other industries.

Timiskaming & Northern Ontario Railway Finances.

In reply to questions asked in the Ontario Legislature recently, by W. F. Nickle, Kingston, Premier Drury said that the amounts received by the province from the T. & N. O. Ry. Commission on account of interest were as follows: 1912-13, \$250,000; 1913-14, \$225,000; 1914-15, \$225,000; 1915-16, \$1,000,000; 1916-17, \$250,000; 1917-18, \$300,000; 1918-19, nil; 1919-20, \$100,000; 1920-21, \$200,000; 1921-22, \$600,000. The province had provided on account of capital, as follows: 1912-13, \$950,000; 1913-14, \$550,000; 1914-15, \$236,000; 1915-16, \$950,271.82; 1916-17, \$410,182.40; 1917-18, \$228,874.14; 1918-19, \$346,587.35; 1920-21, \$917,986.55; 1921-22, \$304,182.82; 1922-23, \$1,750,000, including 10 new locomotives and \$2,054,182.82 on account of the James Bay extension. The railway property was carried on the books of province as an asset valued at \$25,653,675.02; no amounts had been written off for depreciation in any of the above years; the railway was kept up-to-date from earnings. The Commission and the Government proposed to extend the railway northward to James Bay, of which extension 70 miles were under construction, at an estimated cost of \$3,500,000.

Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 382, May 11.—Amending rules and regulations for the transportation of explosives and other dangerous articles by freight. This order is given fully on another page of this issue.

33,642. May 8.—Authorizing Michigan Central Rd. to rebuild its gates at places where it and Pere Marquette Ry. cross Main St., Dutton, Ont.

33,643. May 9.—Approving location of C.P.R. A-3 standard station at Oxbow, Sask.

33,644. May 9.—Ordering Canadian National Rys. to provide station facilities at Bruderheim, Alta., by Sept. 15.

33,645. May 9.—Declaring that for the present, C.P.R. crossing near Milton station, Ont., is protected to Board's satisfaction.

33,646. May 9.—Declaring that for the present, Canadian National Rys. crossing near Cooking Lake, Alta., is protected to Board's satisfaction.

33,647. May 9.—Ordering C.P.R., within 60 days, to install improved type of automatic bell with wigwag signal at crossing of Pembroke St., Pembroke, Ont.

33,648. May 11.—Rescinding order 33,366, Feb. 8, suspending rule 5-A in supplement 4 to C.P.R. tariff C.R.C. no. W-2 658.

33,649. May 9.—Authorizing C.P.R. to build across Macleod-Pincher Trail, Sec. 3, Tp. 9, Range 26, West 4th Meridian, Alta.

33,650. May 11.—Declaring that for the present, C.P.R. crossing at Blackie, Alta., is protected to Board's satisfaction.

33,651. May 11.—Authorizing Millet Village, Alta., to make highway across C.P.R.

33,652. May 12.—Declaring that for the present, Canadian National Rys. crossing near Concord station, Ont., is protected to Board's satisfaction.

33,653. May 12.—Authorizing Michigan Central Rd. to install wigwag signal in addition to electric bell, at crossing of Talbot Road, near Shedden, Ont.

33,654. May 12.—Authorizing Canadian National Rys. to cross and divert highway at mile 1395.6, Nechako Subdivision, s.e. ¼ Lot 3832, R. 5, Coast District, B.C.

33,655. May 12.—Authorizing Canadian National Rys. to build spur for E. J. Shepard, Ltd., Hamilton, Ont.

33,656. May 12.—Authorizing use of subway under Toronto, Hamilton & Buffalo Ay. on Hamilton and Ancaster Road, Ancaster Tp., Ont.

33,657. May 14.—Approving Halifax & Southwestern Ry. (C.N.R.) plan and profile of 4 ft. arch and two 5 by 3 ft. culverts on Chester Subdivision, N.S.

33,658. May 14.—Authorizing Canadian National Rys. to extend second track across single track of Fort William Municipal Ry. on Frederica St., Fort William, Ont.

33,659. May 14.—Approving Canadian National Rys. location and detail plan of combination station and agent's house, at Summerstown, Ont.

33,660. May 14.—Approving C.P.R. location and detail plans of no. 10 station, to be erected at Erickson, B.C.

33,661. May 15.—Declaring that for the present, Niagara, St. Catharines & Toronto Ry. crossing of 4th Ave., Niagara Falls, Ont., is protected to Board's satisfaction.

33,662. May 15.—Authorizing Winnipeg Electric Ry. and Canadian National Rys. to operate over crossing at Pembina Highway, Winnipeg, without previously stopping.

33,663. May 16.—Authorizing Canadian National Rys. to cross Mount McKay and Kakabeka Falls Ry. on Yonge St., Fort William, Ont.

33,664. May 14.—Amending order 32,132, Feb. 27, 1922, authorizing C.P.R. to build crossing 50 ft. east of line between Lots 6 and 7, Con. 1, Etou Tp., Ont., by providing that cost be paid by Ontario Lands and Forests Department, instead of by C.P.R.

33,665. May 15.—Authorizing C.P.R. to erect portable station at Hosmer, B.C.

33,666. 33,667. May 17.—Authorizing Canadian National Rys. to rebuild bridges over l'Achigan River, mile 26.22 from Joliette, Que.; and Midway Creek, mile 147.3 from Capreol, Ont.

33,668. May 17.—Dismissing application of Ontario Public Highways Department for a level crossing of Canadian National Rys. over Bloor St. East or Danforth Ave. extended, in Scarborough Tp., Ont. Bloor St. or Danforth Ave. to be carried under C.N.R. by a subway 60 ft. wide by 16 ft. high.

33,669. May 17.—Ordering that cost of maintenance of subway at Station Ave., Shawinigan Falls, Que., under Canadian National Rys., be paid 75% by town and 25% by C.N.R.

33,670. May 16.—Authorizing Town of Victoriaville, Que., to build crossing over Canadian National Rys. at St. Paul St.

33,671. May 17.—Authorizing Canadian National Rys. to rebuild bridge over Ouatahouaniche River, mile 13.09 from Chambord Jet., Que.

33,672. May 17.—Rescinding part of order 32,913

in so far as it requires installation of wigwag signal at crossing of Milford St., Fairville, N.B., by C.P.R., and ordering, in lieu thereof, that C.P.R. provide a standard illuminated danger sign on bell post.

33,673. May 16.—Ordering that brush obstructing view at crossing of C.P.R., 2 miles west of Oakbank station, Man., be cleared away before June 1 in each and every year.

33,674. May 17.—Ordering Canadian National Rys. to erect 3rd class station building at Mecheche, Alta., by Sept. 1, 1924.

33,675. May 21.—Approving map showing general location of Nipissing Central Ry. proposed line from Liskeard to Wendigo Lake, thence to a point in McGarry Tp., and from Wendigo Lake to Swastika, Ont.

33,676. May 14.—Authorizing New Brunswick Public Works Department to divert highway over C.P.R. at Arthurette.

33,677. May 21.—Declaring that for the present, the Canadian National Rys. crossing west of Carp station, Ont., is protected to Board's satisfaction.

33,678. May 21.—Authorizing Michigan Central Rd. to enter J. E. Willbrod's lands in Wainfleet Tp., Ont., to remove obstructions to view at crossing between Lots 19 and 20, Con. 6.

33,679, 33,680. May 18.—Approving supplements to Bell Telephone Co.'s agreements with Kawartha Telephone System, Durham County, Ont.; and Wright & Pontiac Telephone Co., Ottawa and Pontiac Counties, Que.

33,681, 33,682. May 21.—Authorizing Canadian National Rys. to build bridges over Indian River, north branch, Fraser Tp.; and Shekak River, Algoma District, Ont.

33,683. May 18.—Approving agreement between Bell Telephone Co. and Seabright Telephone Co., Victoria and Ontario Counties, Ont.

33,684. May 17.—Authorizing Canadian National Rys. to rebuild bridge over Apishkanogama River, Sudbury District, Ont.

33,685 to 33,687. May 18.—Approving Bell Telephone Co. agreements with Woburn Telephone Co., Frontenac County; Albert Hill, St. Maurice County; and Wakefield & Masham Telephone Co., Ottawa and Pontiac Counties, Que.

33,688. May 16.—Authorizing Toronto, Hamilton & Buffalo Ry. to enter lands of Thomas Kelly and Stanley House and remove trees, etc., obstructing the view at crossing of Red Hill Road, Saltfleet Tp., Ont.

33,689. May 21.—Authorizing Canadian National Rys. to rebuild bridge over Muskego River, Sudbury District, Ont.

33,690. May 23.—Authorizing C.P.R. to build spur for N. Vermilyea, Winnipeg.

33,691. May 14.—Authorizing New Brunswick Public Works Department to divert highway over C.P.R. at Muniac, N.B.

33,692. May 25.—Prescribing express rates on fish in carloads, from points in Alberta to Chicago, Ill.

33,693. May 25.—Extending until July 1, time within which Canadian National Rys. may build roadway to station and loading track at Sprague, Man., as required by order 32,874, Sept. 20, 1922.

33,694. May 25.—Declaring that for the present, C.P.R. crossing near Whitby station, Ont., is protected to Board's satisfaction.

33,695. May 25.—Approving supplements to Bell Telephone Co. agreement with Glengarry Telephone Co., Glengarry and Prescott Counties, Ont.

33,696. May 25.—Approving clearances at Canadian National Rys. siding for Growers Cold Storage & Ice Co., Grimsby, Ont.

33,697. May 26.—Amending order 33,610, April 30, authorizing Canadian National Rys. to build spur for Northern Forest Products, Ltd., at Giscome, B.C.

33,698. May 26.—Extending to Aug. 1, time within which Canadian National Rys. may regrade 5% approaches to crossing at Ross Jet., Sask.

33,699. May 26.—Authorizing Canadian National Rys. to build spur for Ideal Coal Co., Wayne, Alta.

33,700. May 28.—Authorizing C.P.R. to replace skew half-deck plate girder span at bridge 1.3 over Buell's Creek, Brockville Subdivision, Ont.

33,701. May 28.—Authorizing Canadian National Rys. to rebuild bridge carrying highway over its tracks at Lots 18 and 19, Con. 1, Blenheim Tp., Ont.

33,702. May 26.—Authorizing C.P.R. to build spur for C. B. Allison & Co., Rochester Tp., Ont.

33,703. May 29.—Authorizing Canadian National Rys. to rebuild bridge carrying highway over its tracks at Maple Ave., Lincoln County, Ont.

33,704 to 33,706. May 28, 26, 31.—Authorizing C.P.R. to build spurs for St. Maurice Power Co., La Gabelle, Que.; Berry Growers Co-operative Union of British Columbia, Port Haney, B.C.; and John Carroll, Peterborough, Ont.

33,707. May 31.—Authorizing opening for traffic of connection between G.T.R. and Canadian Northern Ontario Ry. at Napanee, Ont.

33,708. June 1.—Amending order 32,987, Oct. 11, 1922, relieving C.P.R. from speed limitation of 10 miles an hour at crossing near Wingham station, Ont., by showing mileage as 2.45, instead of 2.94.

33,709. May 31.—Approving Maine Central Rd. bylaws authorizing G. H. Eaton, Freight Traffic Manager, and M. L. Harris, Passenger Agent, to issue tariffs of tolls.

33,710. May 31.—Authorizing Canadian National Rys. to rebuild bridge between Lots 2 and 3, Con. 4, Blenheim Tp., Ont.

33,711. June 1.—Declaring that for the present, C.P.R. crossing near Wingham station, Ont., is protected to Board's satisfaction.

33,712, 33,713. May 29.—Approving supplements to Bell Telephone Co.'s agreement with South Norfolk Telephone Co., Norfolk County, Ont.; and Brighton Municipal Telephone System, Northumberland County, Ont.

33,714. June 1.—Authorizing Canadian National Rys. to rebuild bridge at highway on Lot 7, Stamford Tp., Ont.

33,715. May 29.—Authorizing Canadian National Rys. to build drainage scheme for Ranfurly station grounds, Edmonton Division, Alta.

33,716. June 1.—Authorizing Interprovincial & James Bay Ry. (C.P.R.) to build bridge 62.5 over Windfall Creek, Baby Tp., Que.

33,717. May 29.—Amending order of Railway Committee of the Privy Council, 9,528, May 21, 1901, to provide that Canadian National Rys. crossing of Charlotte St., Peterborough, Ont., be protected by gateman between 6.30 a.m. and 10.30 p.m., daily, during January, February, March and April.

33,718. June 5.—Authorizing C.P.R. to replace timber trestle at bridge 26.5, Timiskaming Subdivision, by a second hand 40-ft. double plate girder span.

33,719. May 29.—Authorizing Canadian National Rys. and Peterborough Radial Ry. to operate over crossing at Charlotte St., Peterborough, Ont., without first stopping.

33,720 to 33,723. June 5.—Authorizing Canadian National Rys. to rebuild bridges across the Burnt River, at four points, viz., mile 36.7, 35.4, 37.1 and 41.1, from York River, Glamorgan Tp., Ont.

33,724. June 5.—Authorizing Oshawa Ry. to build spur for Pedlar People, Ltd., Oshawa, Ont.

33,725. June 5.—Ordering Canadian National Rys. to provide a one-pen stock yard at Entwistle, Alta.

33,726. June 5.—Ordering C.P.R., within 60 days, to install a wigwag signal and electric bell at crossing of Brock Road, Puslinch station, Ont.

33,727. June 5.—Authorizing Canadian National Rys. to open for traffic, line from mile 3.9 Riverhurst Subdivision to mile 5.5 Craik Subdivision, 3.67 miles, in Tps. 17 and 18, Range 20, west 2nd meridian, near Regina, Sask.

33,728. June 7.—Authorizing Kettle Valley Ry. to build spur for Union Oil Co. of Canada, Peniticon, B.C.

33,729. June 6.—Authorizing C.P.R. to replace Howe truss span at bridge 51.86, New Brunswick Coal & Ry., over Coal Creek, by 85 ft. pony span.

33,730. June 6.—Authorizing C.P.R. to build spur for City of Montreal, near Papineau Ave.

33,731. June 7.—Ordering that cost of installing half-interlocking plant at crossing of British Columbia Electric Ry., and Vancouver, Victoria & Eastern Ry. on Georgia Ave., Vancouver, B.C., be paid by V.V.&E.Ry., the cost of changes in location of signals governing movements on B.C.E.R. to opposite sides of the street to be paid 75% by B.C.E.R. and 25% by V.V.&E.R.

33,732. June 7.—Authorizing Canadian National Rys. to rebuild bridge carrying highway between Lots 74 and 76, Stamford Tp., Ont., across railway at milepost 1.30, London Division, Ont.

33,733. June 6.—Authorizing Brantford Municipal Ry., and Lake Erie & Northern Ry. to operate without first stopping cars over crossing on West Mill St., Brantford, Ont.

33,734. June 9.—Authorizing Canadian National Rys. to build spur for Welland Cotton Mills, Ltd., Welland, Ont.

33,735. June 6.—Further extending to June 30, time within which Canadian National Rys. may build spurs for Carroll Bros., near Sherkston, Ont.

33,736. June 8.—Approving supplements to agreement between Bell Telephone Co. and Ingersoll Telephone Co., Oxford County, Ont.

33,737. June 11.—Approving proposed addition to Montreal & Southern Counties Ry. station on McGill St., Montreal.

Canadian National Rys. Operating Results.—R. B. Hanson, York-Sunbury, N. B., asked in the House of Commons recently:—"What were the earnings and expenses for the fiscal year, or last accounting period, of the following divisions of the Canadian Government Rys.: From Montreal to St. Flavie; from St. Flavie to Moncton; from St. John to Halifax and from Truro to Sydney?" The acting Minister of Railways, Mr. Graham replied "As pointed out by a former Minister of Railways on March 21, 1922, railway accounting methods do not provide for the presentation of receipts, expenses, surplus or deficits by operating divisions".

American Railway Association, Mechanical Division, Annual Meeting.

The American Railway Association, Mechanical Division, annual meeting was held at Orchestra Hall, 220 South Michigan Ave., Chicago, June 20, 21 and 22, J. Coleman, General Superintendent of Car Equipment, Central Region, Canadian National Rys., Toronto, and chairman of the general committee, presiding. The programme was as follows:—

June 20.—Addresses by chairman, J. Coleman; R. H. Aishton, President, American Railway Association; and W. J. Storey, President, Atchison, Topeka & Santa Fe Ry. Message from W. W. Atterbury, Operating Vice President, Pennsylvania System. Reports of following committees: General; nominating; locomotive design and construction; locomotive

and car lighting; electric rolling stock. Individual papers on the development of the locomotive, by S. Vauclain, President, Baldwin Locomotive Works; and on the training of apprentices, by J. Purcell, Assistant to Vice President, Atchison, Topeka & Santa Fe Ry. Discussion on possibilities for increasing efficiency of modern locomotives.

June 21.—Address by C. H. Markham, President, Illinois Central Rd. Reports of following committees: Car construction; arbitration; prices for labor and materials; brakes and brake equipment. Individual papers on the development of railway cars, by E. F. Carey, President, Pullman Co.; and on increasing of locomotive mileage, by C. F. Giles, Superin-

tendent of Machinery, Louisville & Nashville Rd. Discussion on co-operative research. Election of officers.

June 22.—Sir Henry Thornton, President, Canadian National Rys., was to have made an address, but was unable to do so, owing to prior engagements and asked Mr. Coleman to give a message on his behalf. Reports of following committees: Safety appliances; wheels; specifications and tests for materials; loading rules; tank cars; design of shops and engine terminals. Discussions on shop management problems of today; economies from modern shop machinery; modern repair track facilities; and handling of miscellaneous material on car repair tracks.

Specifications and Tests for Materials Committee.

The committee on specifications and tests for materials, of which F. M. Waring, Engineer of Tests, Pennsylvania System, was chairman, reported that sub-committees are working on specifications for the following: Reports to be ready next year; mechanical rubber goods; welding wire; water gauge and lubricator glasses; wrought iron; steel sheets for passenger equipment; paints.

Since no action had been taken by the Association toward promulgating the tentative specifications submitted in the committee's report of 1921 for revision of standard specifications for carbon steel axles for cars, locomotive tenders and engine trucks, and for revision of standard specifications for carbon steel castings, the committee withdrew their recommendations, and submitted new revisions of the axle and steel casting specifications for approval. The recommendations for the revision of standard specifications, dealt first with specifications for galvanized sheets, recommending some changes, and that the specifications be considered as recommended, rather than standard practice. These specifications have been revised with the co-operation of the manufacturers, and had been changed in form; in providing for a copper bearing base metal when specified; in varying requirements for weight of coating for different gauge sheets; in reducing requirements for bend test of coatings, because of heavier coatings specified, and including permissible variations in weight, size and gauge.

The report dealt with specifications for carbon steel axles for cars, locomotive tenders and engine trucks; steam heat hose; and mild steel bars, and recommended that the new specifications proposed be changed from standard, to recommended, practice. The specifications for carbon steel axles for cars, locomotive tenders and engine trucks have been revised to remove requirements for annealing, because the standard practice is to use unannealed axles; the carbon range was raised slightly, in the interest of securing a stiffer axle in the larger sizes; the addition of a requirement for calipering actual diameter of test axle; the removal of engine truck axles from the title, as the majority of such axles are bought under annealed forging specifications, and the requirements of these specifications are intended for tapered axles; one drop test formula is given for all lengths of axles; revision of permis-

sible variations allowing somewhat wider tolerance on over-sizes on account of difficulties in forging; and the addition of a table of maximum weights for both smooth forged and rough turned axles. Weights specified were obtained from actual weighing of a large number of axles at the manufacturers' and represent current practice. The form of the specifications for steam heat hose has been changed and long length, as well as car heating, hose is covered; the rack steaming test is substituted for the digester test and hydrostatic and deflection tests added; tolerances are given for outside and inside diameters; the physical test requirements for tube and cover and friction have been changed slightly to agree with standard practice, but the quality of hose has not been affected. The specifications for mild steel bars as set forth were shown combined, into one specification, with revised specifications for structural steel for passenger equipment, and structural steel for freight equipment, the report stating in this connection: "Since these materials are of the same grade, it seems advisable to combine the specifications into the prevailing form in use by other associations."

Revisions in Specifications for Materials were recommended as follows: Annealed carbon steel castings for locomotives; annealed carbon steel castings for passenger and freight equipment cars—specifications revised and combined into one specification. The proposed specifications are the same as those reported as information in the committee's report of 1922, and represent the recommendations of the joint committee of the Association and the American Society for Testing Materials. They have also been approved by the A.R.A. car construction and coupler committees. The principal changes are in the method of expressing the requirements; limits for carbon have been omitted, and the form of the physical requirements changed, so that minimum yield point is specified, while tensile strength is not. The tensile strength is required to be reported, however, as it is necessary that it shall be obtained, as the elongation and reduction of area are made a function of the tensile strength. The committee feels that the specifications represent the best that have yet been offered and recommends that members of the association put them into force for the purchase of steel castings

at the earliest opportunity.

Lap-welded charcoal iron boiler tubes for locomotives. The principal changes were revision of the tolerances for gauge, so that the tubes shall be not less than the thickness specified. Some changes were made in the physical test requirements so as to bring the specifications into harmony with those of the American Society for Testing Materials.

Lap-welded and seamless steel boiler tubes for locomotives. The changes were of the same nature as those for charcoal iron tubes.

Rivet steel and rivets for steam boilers and other pressure vessels. The principal changes were the inclusion of chemical requirements, the omission of tensile requirements for rivets, and the addition of a table of permissible variations for bars.

Lined journal bearings. The number of compositions specified was reduced to one, for both the back and the lining metal. It was pointed out that the compositions selected are those in most general use and demonstrated as satisfactory.

Engine bolt iron. The principal change concerned form, and variations in tensile requirements, with variations in the sizes of bars.

Solid staybolt iron. The principal changes were in the form and wording of some sections; also, in the reduction of manganese permitted from 0.10% to 0.05%.

Hollow staybolt iron. The principal changes were the reduction in manganese permitted, from 0.10% to 0.05%; revision of the tensile test requirements to include elongation measured in 4 in., yield point changed from 0.55 to 0.60 tensile strength, and the addition of a splitting test.

Tender tank hose. While there was no change in the quality of hose required, there were some changes in form, and as concerns friction and the physical requirements in tube and cover.

Bronze bearings for locomotives. The revision applied only to sec. 2 of the existing specification, changing the phosphorus quantity from 0.2-0.6 to 0.1-0.25. The change was made because the existing specification was rather high for a so-called medium bronze, the new percentage being more in line with common practice.

New Recommended Practice Specifications were suggested as follows: Specifications for glasses for reflex type water

gauges have been drawn up so as to require a high grade of glass, and the committee requests that the members put them into effect and give their experience.

General instructions on standard methods of tests for mechanical rubber goods. Separate specifications for each of the following: wrapped cold water hose; wrapped air hose; braided air hose; fire hose; axle light belting. The general instructions on standard methods of tests for mechanical rubber goods and the individual specifications for hose and for axle light belting were prepared by a sub-committee working in co-operation with representatives of the Rubber Association of America. The committee requested that the members put these specifications into effect and give the benefit of their criticisms. The individual specifications do not contain any methods of tests. All of these have been transferred to the general instructions.

The committee recommended that the revisions and new specifications submitted to letter ballot of the Association.

Car Construction Committee's Report.

The committee on car construction, of which W. F. Kiesel, Jr., Mechanical Engineer, Pennsylvania System, was chairman, reported on car door fasteners, the proposition of permanently fastening end doors on box cars, needed improvement in side door conditions, journal box gauges for bolt holes, dust guard opening, lid lug and wedge seats, center sill area, limiting outline for freight cars, and maximum loaded weight of cars equipped with F axles. By far the greater part of the committee's report was taken up with designs for standard single and double sheathed cars, and most complete drawings were submitted. The following specifications for A.R.A. box cars were presented:

General Requirements. Cars, when delivered, shall be complete in all parts ready for service, shall conform to A.R.A. standards, recommended practice and to the following specifications. Where the A.R.A. standards, recommended practice, design, and these specifications permit option, there shall be a definite agreement between the builder and purchaser as to which of the optional details shall be used. They shall also agree as to method of place of inspection of cars and of material. The purchaser shall furnish the builder all necessary information relating to paint, marking, lettering, and stamping, in addition to that covered by A.R.A. requirements, for both material and completed car. All lumber used shall be kiln dried. All steel plates $\frac{1}{4}$ in. and less in thickness, pressed parts made therefrom, and channel side sills, shall include a content of copper of not less than 0.20%.

Axles. Journals and wheel fits shall be finished smooth and true to gauge. Journals shall be burnished. The heat number of the axle shall be transferred from the back collar to the other end of the axle in the presence of the inspector.

Side frames. The size of journal shall be cast on outer side of each steel frame, in numbers not less than 1 in. high.

Truck bolsters. The owners' initials and the car number shall be stencilled in letters and numbers not less than 1 in. high on one side of each bolster.

Center plate bearing surface. For cen-

ter plates cast integral with truck bolster, the center plate bearing surface shall be machine finished or ground. All center plate contours shall conform to limiting gauges.

Fundamentals governing areas of sections. Where such fundamentals are specified in A.R.A. standards, or recommended practice, they refer to grade A material in proposed specification for carbon steel castings, which require a yield point not less than 29,250 lb. per sq. in., with an elongation, per cent. in 2 in., of not less than 1,450,000 divided by tensile strength. If grade B material, having a yield point of not less than 36,000 lb. per sq. in., with an elongation, per cent. in 2 in., not less than 1,600,000 divided by tensile strength, is used, a reduction of area of $12\frac{1}{2}\%$ will be allowed. Rolled or forged steel which meets the same yield point and elongation requirements shall have the same allowance for reduction of area.

Draft gear keys shall be quenched and tempered carbon steel forgings.

Rivet holes shall match, and drifting shall not be allowed. Holes which do not match shall be reamed. Rivets, after they are driven, shall completely fill the holes, and shall have heads of the proper shape lying tightly against the sheets or castings.

Flanging of sheets must be true to shape, to provide close contact with contiguous parts.

Joints in superstructure and roof must be water tight. Asphaltum paper about $\frac{1}{16}$ in. thick shall be placed between riveted joints of all-steel roofs.

Brake pipes shall have smooth edges free from fins and burrs. A thin coat of graphite grease shall be applied to the male threads only, and care shall be taken to keep the grease from the inside of pipe and fittings. Connections shall be tested under 100 lb. gauge pressure, using soapsuds to determine leaks. The completed brake installation shall be finally tested to determine proper working and absence of interferences.

All metal parts shall be free from scale and rust, and thoroughly clean, before they are painted.

Metal in contact with wood or metal, and where not accessible after assembling, must be covered with one coat of thick paint, red lead lute or lamp black lute.

Trucks (except wheels, axles and parts contained in journal boxes) and underframes shall have two coats of paint, the first preferably of freight car color and linseed oil, and the second A.R.A. black paint.

Two coats of approved paint shall be applied to the outside of superstructure and one coat to the inside of steel sheets. All-steel roofs shall have two coats of paint on each side.

The joints between floor boards and sheathing or lining shall be carefully filled with asphaltum, or similar compound, which will not be brittle at 0 deg. F., and will not flow at 150 deg. F.

White lead paint shall be used for all stencilling.

The committee also submitted designs for three types of standard trucks, with bolster designs, for cast steel bolsters with integral and separable center plates, also pressed steel bolsters. Concerning all the designs submitted, the report said: "The committee's intent is to make designs that will establish fixed conditions, permitting the use of detail designs standardized by the Association, or the substitution of other parts preferred by

the individual railway, singly or in groups, provided these parts, or group of parts, are the equivalent in strength, service and safety of, and interchangeable with, the standard part, or group of parts, replaced." The report recommended that one or more cars of each of the types covered should be built in the near future.

Brakes and Brake Equipment, Committee's Report.

The committee, of which G. H. Wood, General Air Brake Instructor, Atchison, Topeka & Santa Fe Ry., was chairman, reported as follows:—

Since the last report rendered by the committee their time has been almost wholly occupied in assisting the safety appliance committee and taking care of conditions due to labor troubles. A number of subjects, which were on the docket, have been of such a nature as to require considerable time of the members to adequately care for them. The conditions enumerated made it impossible, therefore, for the committee to cover the subjects sufficiently to enable them to render a report of any value and the subjects have, therefore, been continued on the docket for future consideration. The committee has been able to cover one or two subjects which are being submitted.

In the committee's report for last year attention was called to having appointed a sub-committee from committee on train brake and signal equipment to work in conjunction with committee from operating division in revising the latest code of Air Brake and Train Signal Rules. This committee has performed the duty for which it was appointed. Meanwhile, the Mechanical Division's Standard Rules and Instructions Governing the Testing, Inspection, Maintenance and Operation of Brakes and Signal Equipment have been carefully reviewed and the following recommendations are submitted:—

Rules and regulations for testing, inspection, maintenance and operation of power brakes (freight and passenger):

Replacing the air brake and train air signal instructions, shown in Manual of Standard and Recommended Practice, section E, pgs. 65 to 74, with a suitable code of rules governing the operation of this equipment. The committee has, therefore, prepared a proposed set of rules governing the operation of brake and train air signal equipment. These were appended to the report and were recommended for adoption as standard.

A set of proposed rules governing the maintenance of brakes and air signal equipment on passenger cars was also given, similar to the standard rules governing the maintenance of freight brakes, and the same was recommended for adoption as standard.

The committee has carefully reviewed the rules and instructions in the Manual of Standard and Recommended Practice on the maintenance of freight brakes, and while it does not find that these rules and instructions are subject to important fundamental revision there are a number of cases in which the rules can be clarified. It is, therefore, recommended that they be revised to conform to an appendix. In view of there being no important changes involved, no attempt has been made to enumerate the revision in detail.

The general arrangement and details of the air brake parts, shown in the

manual on pages 3-9 and 11-13, and the details for high speed foundation brake gear, shown on pages 20-31, are not suitable in so far as dimensions are concerned for cars of present day construction. In fact, owing to the many different types of cars in use and being constructed, it would be very difficult to prepare complete detail drawings for the various parts of the brake rigging that would be suitable for the many types of cars involved. It is, therefore, recommended that the details shown on pages 3-9, 11-13, 20-31 and the six paragraphs appearing on page 19 under Designation of Rods and Levers be struck out of the list of standards and recommended practices and supplemented by specifications covering fundamental requirements for foundation brake gear and application of brake equipment to the car. If this recommendation is adopted the Committee will prepare specifications to cover.

Wheels Committee's Report.

The committee on wheels, of which C. T. Ripley, Chief Mechanical Engineer, Atchison, Topeka & Santa Fe Ry., was chairman, and of which L. K. Silcox, General Superintendent, Motive Power, Chicago, Milwaukee & St. Paul Ry., was a member, presented new specifications for cast iron and solid wrought carbon steel wheels, and reported in part as follows: "In 1917 the new arch plate 700 lb. design for cast iron wheels for use under cars of 80,000 lb. capacity was made recommended practice. In 1920 the new design of wheels of weights 650 and 750 lb. was made recommended practice. No change has been made in the cast iron wheel specifications, to provide tests which are proper for these additional weight wheels. Furthermore, investigations of failed wheels, which have been made by various railways, have indicated that the chemistry of the wheel has a bearing on its serviceability; therefore, a demand has arisen for a chemical clause in cast iron wheel specifications. Your committee has prepared a new cast iron wheel specification to take care of these new features, and also to clear up certain clauses which have been subject to criticism because of their being indefinite. A meeting was held with representatives of the Association of Manufacturers of Chilled Iron Wheels, at which they were given an opportunity to criticize the proposed specifications. We wish to acknowledge the assistance and support which these representatives gave us in our attempt to improve the quality of cast iron wheels."

The chemical composition for cast iron wheels, specified by the committee, is as follows: Combined carbon, max., 0.90%; sulphur, max., 0.17% for 1923-24 inclusive, 0.16% 1925-26 inclusive, 0.15% 1927-28 inclusive, and 0.14% 1929 and after; manganese, minimum, 0.50%; total carbon desired, minimum, 3.35%; phosphorous desired, max., 0.35%.

The report stated that the committee had received a request from manufacturers of cast steel wheels that the flange thickness limitations be reduced to the same as those for wrought steel and steel tired wheels, instead of the cast iron wheel limit. The committee felt that the manufacturers' claim was a valid one, and recommended that the limit be made $\frac{1}{8}$ in. for all cast steel wheels under both freight and passenger cars, and that the code of rules be changed accordingly.

The specifications presented for wrought carbon steel wheels contained the following chemical requirements: carbon, 0.65 to 0.85%; manganese, 0.60 to 0.85%; silicon, not less than 0.15%; phosphorous, not over 0.05%; sulphur, not over 0.05%.

The committee also presented a new gauge for steel wheels, and stated as follows: "The present gauge for gauging steel wheels has not been found satisfactory by the various railway companies, as it is too complicated for the average inspector, or wheel lathe hand, and there has been a demand for a simpler gauge to answer all the requirements, and at the same time a revision of the code of rules governing billing for metal in rolled steel wheels through the use of such a gauge. The limit of wear line which has been placed on wheels has been found to be a very unsatisfactory method of gauging the wheels, because the threads wear hollow, and no way is provided to take care of this measurement. Furthermore, the rules governing the maintenance of locomotives, issued by the Interstate Commerce Commission, place the limit on the dimensions from the throat to the underside of the back rim. This latter dimension is really the correct dimension for limiting the wear of steel wheels, inasmuch as this is the danger point, and not the front rim. The gauge presented by your committee takes care of the measurement of the amount of metal to be turned off the tread to restore full flange contour as well as the limit of rim thickness."

Arbitration Committee's Report.

The arbitration committee, of which T. H. Goodnow, Superintendent, Car Department, Chicago & Northwestern Ry., was chairman, and of which J. Coleman, General Superintendent, Car Equipment, Central Region, Canadian National Railways, was a member, reported that during the year cases 1233 to 1286 had been decided, and that, with the general committee's approval, it had discontinued the rendering of interpretations of questions under the rules of interchange, and would consider only disputes presented in the form of arbitration cases in accordance with rule 123. Changes in the interchange rules were recommended as follows: Rule 2, sec. (b), par. 3, changed to improve the rule in the handling of tank cars by requiring specified stenciling to be on both sides of car; addition to sec. (f) of rule 2, in connection with inside door protection; change in sec. (h) of rule 2; recommendation that rule 3, sec. (b), par. 2, be extended to Jan. 1, 1925; extension of rule 3, sec. (d), par. 2, till Jan. 1, 1926; change in rule 3, sec. (f), to prevent the transfer of lading en route and to enable car owner to apply device which has been adopted as standard for his cars; that effective date of sec. (i) of rule 3 be extended to Jan. 1, 1925, and also that rule be modified as specified to prevent transfer of lading en route; extension of effective date of rule 3, sec. (l), second sentence, to Jan. 1, 1925, and modification of section to prevent transfer of lading en route and to force the car owner to comply with the rules; addition of new paragraph to rule 9, providing that when charge is made for adjusting safety valves on tank cars, the billing repair card must specify the pounds pressure at which the valve opened before adjusting; application of a new section to rule 17, to provide that the application of cast iron wheels after June 30, 1924, of nominal weight of less

than 650, 700 or 750 lb., shall be considered as improper repairs; change in interpretation no. 7 of rule 17; modification of rule 30, sec. (c), to improve the rule and remove the inconsistency which has heretofore existed; recommendation that new item "discharge valve caps" be added to the first paragraph of rule 32; modification of rule 32, sec. (d), item 4; modification of rule 33, first paragraph; specifying interpretation of rule 58; modification of rule 72 in connection with longitudinal seams in wheels; addition of a paragraph to rule 98, to create incentive to apply new material and to put rule in line with rule on wrought steel wheels; addition of note to rule 111, to make it clear; correction of misprint in rule 112, note 1, and addition of a new paragraph to rule 112 to provide that second hand trucks used under new car bodies or new trucks used under old car bodies shall be considered of the same age as the car body in figuring depreciated value.

The committee stated that all recommendations for changes in the interchange rules submitted by members, railway clubs, private car owners, etc., were carefully considered, and, where approved, were recommended.

Locomotive Design and Construction Committee's Report.

The committee on locomotive design and construction, of which H. T. Bentley, General Superintendent, Motive Power and Machinery, Chicago & Northwestern Ry., was chairman, and of which C. E. Brooks, Chief of Motive Power, Canadian National Railways, was a member, reported that during the year it had given consideration to the following subjects: tractive power of Mallet locomotives; locomotive rods for heavy power; use of extended piston rods on locomotives and minimum size of piston on which they shall be applied; comparable methods of hydrostatic and force feed lubrication for locomotive cylinders and steam chests, and best method of application; standardization of taps and dies used by railways; rail stresses under locomotives; best means of taking up driving wheel lateral; mechanical stokers; feed water heaters and exhaust steam injectors; study of crosshead connection of piston rods.

The formulae developed for Mallet locomotive tractive power were as follows:

$$T = \frac{1.7 P c^2 S}{(R+1) D} \text{ for locomotives with approximately 90\% cut-off, and } T = \frac{1.5 P c^2 S}{(R+1) D}$$

for locomotives with approximately 50% maximum cut-off, where c is diameter of low pressure cylinder in inches; S is stroke in inches; P is boiler pressure in pounds; D is diameter of driving wheels in inches; R is ratio of cylinder volumes, and T is tractive power in pounds.

Concise recommendations were given for rods to be used with heavy power, and the matter of extended piston rods was dealt with very thoroughly, as were also the subjects of lubrication methods, driving wheel lateral, and mechanical stokers. A questionnaire, concerning feed water heaters and exhaust steam injectors, with indications from answers received from various roads, was detailed in the report, and it was stated that there are 319 feed water heaters in service on member roads and 678 on order. The study of the key vs. the nut connection, between crossheads and piston rods, ap-

parently demonstrated the key connection best, as 61 roads reported that they considered it more desirable, for the following reasons: more reliable; saving of weight of reciprocating parts; more readily applied; easier to maintain; more secure; less trouble in locomotive house maintenance; firmer hold; more accessible; simpler construction; less parts; easier to remove; nut cannot be properly tightened; difficult to fit and keep nut tight; permits smaller crosshead and shorter guides; no trouble with key becoming loose; cheaper to repair; key will shear in case of water in cylinder, thereby saving cylinder head. Seventeen out of 18 roads using both key and nut stated their reasons for using the nut as follows: easy to detect looseness and rarely breaks rod in crosshead; fractures develop in key slot; nut less liable to injure rod; rod is stronger with nut as key slot weakens the rod; keys shear; easier to turn piston head with nut, in order to equalize water. Three roads stated they had no preference.

Loading Rules Committee's Report.

The committee on loading rules, of which R. L. Kleine, Assistant Chief of Motive Power, Pennsylvania System, was chairman, reported in part as follows: "During the past year, your committee as a whole, as well as sub-committees, have held meetings with shippers concerning recommendations for changes and additions to loading rules. A number of suggestions for changes were also received from the members. Trial loads, embodying new forms of loading, were sent out and carefully followed to destination, in order to determine the safety and practicability of such loadings. Your committee has had the hearty co-operation of the steel and automobile industries, and is indebted to their representatives for able assistance.

The committee submitted recommendations for changes in the rules as follows: addition of note to rule 5 to make clear what weight of lading may be placed on cars; revision of rule 9 (a) to clarify the meaning; change in rule 9 (e) so as to omit reference to fig. 68; revision of rule 19 to take care of special material, such as bridge girders, columns, etc.; revision of rule 21 to permit securing lift lever where same cannot be readily disconnected from the coupler lock lift; change in rule 27 to omit reference to fig. 48; revision of rule 28 to overcome the difficulty experienced by shippers in obtaining the required 4 in. clearance between lading and floor of car with flexible material; revision of rule 155, second paragraph, to permit loading of material at doorway to the inside line of car; change in fig. 39 to conform with proposed change in rule 155; change in rule 207 to omit reference to form of loading shown in figs. 47 and 48 and introduce reference to fig. 49; omission of figs. 47 and 48, which are obsolete; change in fig. 49, omitting latter portion of note; revision of rule 208 to permit loading girders and half-roof trusses (single loads) without bearing pieces where they can be so loaded without damage to the material; revision of rule 223, to permit increased length of overhang where cars with long wheelbase are used; change in rule 224, last paragraph, since reference to rule 207 is no longer applicable; revision of rule 225 to conform with proposed revision of rule 28; change in rule 227-B, par. (g); change in rule 227-D, 3rd par. to conform with change in par.

(g); change in fig. 61 to conform with requirements of rule 229; change in sketch A; inclusion of general rule 15 with rules for loading rolled material of small sectional area on open cars; change in rule 302 re loading of boiler shells; introduction of new rule 400-A to cover straight and concrete pipe loaded on flat cars; changes in figs. 115 and 117 to line up with present practice; revision in table of woods under rule 508; revision of note under rule 519, and revisions in rule 532, to permit use of certain decking and in rule 533 to conform with that proposed in rule 532.

Locomotive and Car Lighting Committee's Report.

The committee on locomotive and car lighting, of which W. E. Dunham, Assistant to General Superintendent, Motive Power and Machinery, Chicago & Northwestern Ry., was chairman, reported in part as follows: "Your committee has kept in touch with lamp manufacturers, following the lines of lamp improvement that have been developed during the year. The suggestion has been made to lamp manufacturers that it would be very desirable to maintain a definite mechanical difference in the headlight lamps, for the primary purpose of identification. A possible change from the present G type of bulb, to the PS type of bulb, is reported. This will very likely permit the maintaining of a separate sized bulb for each size of lamp required, and will also permit of improved focusing of the light."

The report recommended that member lines should try the 15 watt 33 volt S-14 lamp now available, as many complaints had been received that the 15 watt 33 volt S-17 lamp in general use for locomotive cabs is unnecessarily large. A proposed table of dimensions for axle pulley bushings for designated A.R.A. car axles was also given, together with a table governing the range of pulley locations. Information concerning the progress made with the axle generator drive was also presented.

Nominating Committee's Report.

The terms of office of the chairman, vice chairman and seven members of the general committee expire June, 1923. In accordance with action taken by the general committee and recommended in its report to the Association this year, as result of a resolution adopted at the 1922 annual meeting, the term of chairman and vice chairman of the division is changed from two years to one year, which will make it necessary to elect both a chairman and vice chairman of the division at the 1923 annual meeting. The committee nominated the following for chairman, John Purcell, Assistant to Vice President, Atchison, Topeka and Santa Fe Ry. For vice chairman, T. H. Goodnow, Superintendent Car Department, Chicago & North Western Ry. Both terms expiring June 1924.

As the terms of seven members of the general committee expire in June, 1923, the committee nominated the following to serve until June, 1925, C. E. Fuller, Superintendent Motive Power and Machinery, Union Pacific Rd.; H. L. Ingersoll, Assistant to President, New York Central Rd.; W. Kells, Superintendent Motive Power, Atlantic Coast Line Rd.; J. S. Lentz, Master Car Builder, Lehigh Valley Rd.; H. C. Oviatt, General Mechan-

ical Superintendent, New York, New Haven and Hartford Rd.; J. J. Tatum, Superintendent Car Department, Baltimore & Ohio Rd.; W. J. Tollerton, General Superintendent Motive Power, Chicago, Rock Island & Pacific Ry.

The committee nominated J. Coleman, General Superintendent of Car Equipment, Central Region, Canadian National Rys., for member of the general committee to fill unexpired term of T. H. Goodnow, who is nominated for vice chairman and whose term as member of the general committee expires June, 1924. The committee also nominated C. H. Temple, Chief of Motive Power and Rolling Stock, Canadian Pacific Ry., to fill the unexpired term of W. H. Winterrowd, who has left railway service and whose term expires in June, 1924.

Electric Rolling Stock Committee's Report.

The committee on electric rolling stock, of which G. C. Bishop, Superintendent Motive Power, Long Island Rd., was chairman, and of which L. K. Sillcox, General Superintendent Motive Power, Chicago, Milwaukee & St. Paul Ry., was a member, submitted a complete list of rules and instructions for the maintenance of electrical equipment, both locomotives and cars. The committee framed the rules in such general terms that, as pointed out in the report, rules governing local conditions could be added to them, and the report stated: "These instructions are based, in general, on the experience and actual practice of those roads having electrically equipped rolling stock. They are offered as suggested practice for other roads having equipment of this character. It should be understood, however, that the requirements are not binding and may be modified in any respect to suit the local conditions on the roads adopting them. In as much as these instructions necessitate the performance of work on electrical apparatus and circuits, attention is called to the fact that such additional instructions as may be necessary must be issued to ensure that the work is performed in such a manner as to avoid personal injury to the workmen."

The instructions given are very complete, and cover the maintenance of main motors, wiring, rheostats, circuit breakers, reversers, contactors, transformer and impedance coils, pantograph and connections, line equipment, electrical connections to the air brake system, and all other electrical equipment of railway rolling stock.

Designs of Shops and Locomotive Terminals Committee's Report.

The committee on design of shops and locomotive terminals, of which A. R. Ayers, Assistant General Manager, New York, Chicago & St. Louis Ry., was chairman, reported in part as follows: "A vast amount of information was collected by previous committees, which is scattered through various reports in such a way that it is not readily available. It was felt that the committee, this year, could be of most service by condensing and co-ordinating the work of previous committees, which it has endeavored to do in this report, together with presenting some data taken from reports of other associations and information developed by previous committees but not

published. The report is divided into four divisions, as follows: 1. Locomotive terminals; 2. power houses; 3. car shops; 4. locomotive shops."

The part of the report dealing with locomotive terminals was a summary of the data gathered in 1922 by the A.R.A. committee on design and operation of such terminals, with certain information on the subject published by the American Railway Engineering Association, under the following heads: 1. general layout of terminal; 2. engine house design; 3. turntable, tractor and pit; 4. cranes, tractors and hoists; 5. locomotive pits and drop pits; 6. shops and tool equip-

ment; 7. boiler washing system; 8. ash handling facilities; 9. coaling stations, sand storage and water cranes; 10. inspection pits and washing platform; 11. buildings and offices; 12. storehouse and oil house.

The part of the report dealing with power houses was a summary of previous reports of the committee on modernization of stationary boiler plants, condense and brought up to date. It dealt with power houses under the following heads: 1. location; 2. construction; 3. power house equipment, including both boiler and engine room equipment; 4. power transmission; 5. piping,

lighting and heating of power houses.

The portion dealing with car shops called attention to the plan of the 4-unit shop presented in 1920 and certain details of it. In dealing with locomotive shops it said:—"The committee finds that very little data has been collected on the design of locomotive shops by previous committees, and about the only information available is found in technical publications. The committee feels that the time available to collect data and submit a comprehensive report is too short, and recommends that this important subject be given consideration by future committees."

The Development of the Locomotive.

By S. M. Vauclain, President, Baldwin Locomotive Works.

The following paper was read before the American Railway Association, Mechanical Division, at its meeting in Chicago, June 20:—

I have been invited to deliver an address on the development of the locomotive, the necessity for its development, and the improvements necessary to assist in the transportation problems of this country. This is quite a large subject to be disposed of in a very short space of time, and I know that most of those present are thoroughly familiar with the history of the locomotive and the necessities which led to its conception, as well as some of the difficulties that were surmounted in its introduction as a public servant. This it has continued to be for more than 100 years, with an ever increasing intensity in its devotion to the business world.

Transportation, however, has been and always will be a governing factor of prosperity. Those countries favored with superior transportation facilities will, other things being equal, prosper to a much greater extent than those where such facilities are more or less limited. Railway transportation has made the United States what it is today. Practically all other forms of transportation have been superseded, and many of the water systems of transportation formerly in use have been abandoned. Quantity and quality are the constant cry, and can only be met by superior equipment which the science of railway engineering has made possible for the great railway systems of our country to employ.

As far as is known, the first vehicle to be actually propelled by steam was a gun carriage built by Nicholas Cugnot, in Paris, in 1771, while the first locomotive designed to run upon rails was built in 1803 by Richard Trevithick, a name that is still associated with the locomotive industry in England; and that has received distinctions as well in other countries, principally Egypt and Japan. Strange to say, the first successful effort in locomotion by steam in America was the Oructor Amphibolis, constructed by Oliver Evans in Philadelphia in 1804. Mr. Evans' shops occupied the ground on which the U.S. mint now stands; a site now surrounded by the buildings of the present Baldwin Locomotive Works, operating night and day, continuing the industry originated by Evans on this very spot. This locomotive was really a dredging scow, designed to run on land or water, but principally to navigate the rivers between which Philadelphia lies. In order to get it from the factory to the river it became necessary to use it

as a locomotive that would operate on the streets, and without rails to guide it. Its performance was successful, but its utility questionable. Even at that time, Mr. Evans realized the advantage of using a high steam pressure, and expanding it in the cylinder, so as to obtain some greater economy in its use.

It would be useless to attempt to trace the development of the locomotive in foreign lands, as a more complete understanding can be had in this short time by reviewing briefly the progress made in the development in this country, of this very wonderful power house for locomotion. Mention should be made, however, of the first locomotive with a horizontal multitubular boiler, built by Seguin in France in 1827; and also of the famous Rocket, constructed in England by Geo. Stephenson in 1829. This locomotive was awarded the prize in a contest on the Liverpool and Manchester Ry. It was the first locomotive to combine three basic features which are still universally employed, viz.; a horizontal multitubular boiler, pistons directly connected to the driving wheels, and the use of the exhaust steam, which was discharged up the stack, to furnish a draft for the fire, and thus make possible the generation of large quantities of steam in proportion to the size of the boiler and draft intensity.

The various experiments and attempts in this early period to apply steam locomotives to the use of transportation in the U.S. were more or less successful. Those of foreign construction imported for the purpose gave results that were sufficiently satisfactory to interest the brightest engineering minds in the country and influence them to attempt the construction of American built locomotives. The first locomotive to be used in the U.S. however, was built in England and was named the Stourbridge Lion. It made a few trips on the Delaware and Hudson Canal Co's road at Honesdale, Pa., in 1829, but was considered too heavy for the track and bridges, and was soon withdrawn from service.

The first locomotive actually built in America was the Tom Thumb, designed by Peter Cooper, a merchant of Baltimore, and used experimentally on the Baltimore and Ohio in 1830. It was about the size of a hand car, but it demonstrated the practicability of steam as a motive power. Then came the Best Friend, the first locomotive built for commercial purposes in this country, constructed in 1830 at the West Point Foundry in New York for the South Carolina Rd. This engine was very suc-

cessful for about seven months, when its boiler unfortunately exploded, because the fireman became annoyed at the blowing off of steam at the safety valve, and weighted down the lever to ease his mind.

Old Ironsides was built by Matthias Baldwin and put in service in 1832 on the Philadelphia, Germantown & Norristown Rd. Its weight was 5 tons. It was built under great difficulties. Its operation, all things considered, was very successful. It was quite a while before the officers of the company would permit this locomotive to go out in the rain; on rainy days horses were used, but one day it was caught out on the rails when the rain descended, and proved its utility to operate under such discouraging circumstances. The American locomotive has been out in the rain ever since. Old Ironsides had its driving wheels ahead of the firebox, with one large pair of carrying wheels supporting the front end of the engine. This added greatly to its adhesive qualities. The further development of the locomotive by Mr. Baldwin led him to introduce a 4-wheeled truck, and in this design the driving wheels were placed behind the firebox, which materially reduced the adhesion for traction purposes. The truck had first been used by J. B. Jervis in 1831, and it provided the flexibility of wheel base so essential to locomotives that operated on the sharp curves and uneven tracks of that period. The engineers of that day seem to have realized the benefit to be derived from high pressure steam, and when Mr. Baldwin introduced ground metallic joints, in place of canvas and red lead joints for steam pipes, he opened the way for those who were to follow him in future and employ still higher steam pressure.

About this time the Norris Locomotive Works were established. Mr. Norris succeeded in building a locomotive of the same total weight as Mr. Baldwin's engine but of greater hauling power, by using a 4-wheeled truck and placing the driving wheels in front of the firebox, so that a greater portion of the weight of the engine was utilized for traction. The next logical step in locomotive development, in order to gain power, was to use two pairs of driving wheels, placing one pair in front of the firebox and one behind it. This was done by Henry R. Campbell in 1836, who designed the first American (4-4-0) type locomotive, and had such a machine built by James Brooks of Philadelphia. This locomotive had no equalizing beams between the two pairs of driving wheels, and there-

fore, did not perform very satisfactorily. In 1837, however, Garrett & Eastwick of Philadelphia built a locomotive for the Beaver Meadow Rd., and introduced an equalizing bar between the two pairs of drivers, which device was patented by Jos. Harrison, Jr., who later became a member of the firm of Eastwick & Harrison. Quick to perceive the value of this device, Mr. Baldwin was so pleased with it that he purchased from Eastwick & Harrison the right to use and apply it to all the locomotives he might thereafter build.

Mr. Baldwin, ever aggressive, felt that for moving the heavy traffic which the railways then were called upon to handle required locomotives of greater power than any previously built. He conceived the idea of a flexible beam truck which would enable him to build locomotives with 6 coupled wheels. Such locomotives were put in service in 1842, and in the year 1846 had grown into a design using 8 coupled drivers, the first two pairs being combined in a flexible truck. The largest locomotives of this type weighed about 30 tons. Ross Winans, of Baltimore, in this same year produced a locomotive with 4 pairs of drivers coupled, but very compactly grouped, and held in a rigid frame. It is therefore doubtless due to his courage that there was introduced and generally adopted the rigid frame construction now employed in our most powerful locomotives. The most notable of these Winans locomotives were the famous Camel engines, which were among the most powerful freight haulers of their day and were built in large numbers up to 1860.

In the late '40's and early '50's, the public desire for more rapid passenger service led to the employment of large driving wheels for this class of transportation. Mr. Baldwin, first in the field with the Governor Paine, gave great impetus to the desire for better passenger locomotives. James Milholland, of the Philadelphia & Reading Ry. Co., whose work in the development of the locomotive will pass down into history, in 1852 constructed for that railway, passenger engines having driving wheels 7 ft. in diameter. In detail of design, the Milholland engines were undoubtedly among the finest of their time. The Tiger, built by Mr. Baldwin in 1856, for the Pennsylvania Rd., was one of the most successful passenger locomotives of that period. It used wood for fuel and its total weight was some 28 tons. In the same year an engine of this type was built for service in the south and is still working every day at Valdosta, Ga., being in its 68th year. It may be worth while to mention that this locomotive was born the same year as the speaker, and like your humble servant, while showing somewhat the ravages of time, is still able to make some smoke.

During the Civil War almost anything that would run on wheels in the shape of a locomotive was acceptable. Many remodelings were made of antiquated structures, and locomotive designers became quite as numerous as the locomotives themselves. J. P. Laird, at the Altoona Shops of the Pennsylvania Rd. was most active, and some of his improvements, as for instance the Laird guide, exist today. Much was accomplished, and during the years intervening some of our railway systems began to consider standardization of their power. This was most consistently and determinedly put in force by the Pennsylvania Rd., and the changes of types on

that system, while made regularly in order to keep abreast of the times, have always been given the most conservative consideration before adoption.

It was not until 1877 that interest was taken by the Philadelphia and Reading Ry. in locomotives to burn the refuse anthracite coal then produced in large quantities at the mines, and for which no market was available. The first locomotive of this character was designed by J. E. Wootten, of the railway, and was quite successful. It was at that time considered quite an innovation; but owing to the increased demand since made upon the steam generators of locomotives, the use of the Wootten boiler has developed the wide firebox boiler, now used with all kinds of fuel and in all classes of service. The Wootten design was a great departure, and, in my opinion, did more for development and increased locomotive power than any other improvement of that period. It was quite a while before the merits of this construction were acknowledged, but it is now universally used.

The desire for high speed with large trains where great tractive power was not necessary, led to the introduction, in 1894, of the Atlantic type locomotive, built to meet the requirements of the Atlantic Coast Line. This type was so successful that it became almost universally employed in passenger service, though under various names, such as the Central Atlantic, Chataqua, etc. The underlying principle in each case was the same, viz., the use of the trailing wheel to carry the excess load involved by the employment of a boiler of exceptional steaming capacity and having a deep firebox suitable for burning bituminous coal.

The increased requirements of transportation, i.e., sustained high speeds with heavy trains, produced what is now commonly known as the Pacific (4-6-2) type locomotive, which is in general use throughout the country for heavy passenger service. For the heaviest class of service on steep grades, the Mountain (4-8-2) type is being successfully employed. The first so called consolidation type locomotive, built by the Baldwin Locomotive Works in 1866, was named in honor of the consolidation of the various small railway lines now comprising the Lehigh Valley System. It was a great success, and upon the same principles, consolidation locomotives of enormous size and great efficiency have continued to be built.

About 1889, American locomotive designers became deeply interested in the compounding of locomotives. A considerable number of compounds of various types had been built and operated abroad. Almost any single expansion type then constructed was capable of having compound cylinders of some design applied, resulting in a more economical performance. Among the various types in use abroad were 4-cylinder Mallet locomotives, originally designed for light service, and later built in large sizes for use in Russia. The first locomotive of this type built in the U.S. was purchased by the Baltimore & Ohio Rd., and had two 6-coupled units. It was exhibited at the St. Louis exposition in 1904, and later operated very successfully in mountain service. But inasmuch as this was a single locomotive, the type did not receive the attention or create sufficient interest among railway managers to come quickly into general use; and it was not until 1906, when J. J. Hill, of the Great

Northern Ry. purchased five of these engines on my recommendation, that wide-spread interest in the type was created. In order to get a proper estimate of their value, he isolated them and placed them on one section of the road, removing the locomotives of all other types. These locomotives were equipped with leading and trailing trucks, but in other respects were of the same type as the locomotive that had been previously constructed and put in use on the Baltimore & Ohio Rd. The experiment was successful, and Mallet locomotives for steep gradients or extreme conditions of traffic became popular and are still in general use.

Notwithstanding the fact that compound locomotives proved their economy and gave wonderful results, so far as economical consumption of fuel in freight service and high speed hauling power in passenger service were concerned, owing to the clearance limits prescribed, the constantly increasing size of locomotives made the use of compound cylinders more and more difficult. The use of superheated steam about this time, however, enabled engineers to produce locomotives almost, if not quite, as efficient as the compound locomotives had proved themselves to be, and to still further enlarge the size of units, increase their power and maintain a most satisfactory performance. In this connection, mention should be made of two types of locomotives which have proved particularly successful in heavy freight service. These are the mikado (2-8-2) and the Sante Fe (2-10-2). In both of these the trailing wheel principle, as originated in the Atlantic type, has been applied for the purpose of providing increased boiler capacity. Furthermore, in freight and pushing service there is an added advantage in the trailer, as it provides a guide when running backward. Largely for this reason, the mikado type has proved a great success in meeting the special conditions found in logging and certain other classes of service where it is frequently necessary to back into sharp curves and switches.

The standardization of locomotives by the U.S. Railway Administration was of great benefit, as the consideration of the designs resulted in a much closer intercourse and exchange of thought among motive power men than could have been obtained in any other way; and while none of the classes then developed will be continued in their entirety, many of the more recent locomotive designs have as their bases the Administration locomotives.

There has at all times been an unceasing effort on the part of railway managers to use locomotives not only of greater capacity, but also of greater economy. Determined and loyal support has been given to every invention or contrivance intended to improve the efficiency of the locomotive and thus enable it to accomplish more work. To one who has given his whole life to this work and who has had opportunity to note the changes made from time in locomotive designs and appliances, the modern locomotive may be looked upon with some satisfaction; but also with a realization that the end has not been reached, and that the inventive genius of the future motive power experts will considerably change its form and increase its durability, efficiency and economy.

When the Giffard injector supplanted the pump for forcing water into the boiler, it proved a feed-water regulating de-

vice that enabled an engineer to operate his locomotive with absolute confidence. Now these same wonderful devices are being replaced by feed-water heaters and purifiers operated by exhaust steam. Can we not expect in the near future an improvement that will purify the water before it enters the pump and thus prolong the life of flues and fireboxes?

When the size of locomotives had grown beyond the endurance power of the fireman to supply the coal in proper quantity, the mechanical stoker came into play, not only to relieve him of this back-breaking recreation, but also to supply the requisite amount of fuel, and in a proper manner, mechanically to the firebox. The superheater, the mechanical stoker, the feed-water heater and the power reverse gear are now absolute requirements on the modern high duty locomotive. The American firebrick arch in its perfected form, a perfection that has required some 50 years to accomplish, is indispensable.

The trailing wheels under our large locomotives, some of them carrying as much as 60,000lb. of weight, have suggested the use of what is commonly known as the booster. This mechanical contrivance is simply a small steam engine attached to the locomotive trailing wheels, automatically controlled so that the weight carried by the trailing wheels can be utilized for starting of heavy trains or the overcoming of short grades which govern the tonnage that can be hauled over certain divisions of the road. By this means trailing wheel locomotives in many classes of service can be made much more remunerative in their operation than when not so equipped. The introduction of this device is becoming very general and it will probably be largely used in the future.

For many years the locomotive has been considered by the layman the most extravagant steam user and coal burning device in existence. This is entirely erroneous. The Pennsylvania Rd. System is having built 475 locomotives, with a tractive power of 87,000lb., equipped with mechanical stokers, fire brick arches, feed water heaters and superheaters of the most advanced type. The cylinders are operated at half-stroke cut-off when developing full tractive power, and the coal consumption per horse power by actual test is equal to that of some of our best electrical power houses where turbines and condensers are employed, namely an indicated horse power for 1.83lb. of coal. Every user of locomotives should examine carefully the construction of these engines. Notwithstanding that they carry 250lb. of boiler pressure, there are many features employed worthy of general adoption. The high boiler pressure and half-stroke cut-off are also employed in a single expansion articulated locomotive, built by the Pennsylvania several years ago for heavy mountain service, which has given most satisfactory results.

A successful effort is being made by railway managers to increase locomotive mileage by increasing the lengths of runs, and on a number of roads, notably in oil burning districts, passenger trains are being run over five, six or seven hundred mile divisions without change, except as to engine crews. One of the important factors responsible for the success of this method of operation is the use of hard grease as a lubricant, as this has eliminated much of the oiling around formerly required of the engineer.

It has not been my intention to omit

any of the wonderful achievements attained by the designers of locomotives in the various sections of the country, or to overlook the exceedingly satisfactory and high grade productions of other locomotive establishments. My effort has been to illustrate to you all as briefly as possible the rapid advancement in locomotive construction during the past 90 years, or during the life time of The Baldwin Locomotive Works: and naturally, many of the illustrations I have shown have been selected because of my greater familiarity with them.

Locomotive development during the past 90 years has been due entirely to the constantly increasing demand of business for better and cheaper transportation. The railway systems we now enjoy have been made possible by the enterprise of our pioneer railway builders of the past, who were courageously supported financially by the public as investors. The U.S. people quickly realized the prosperity that would follow the iron trail. Foreign investors were quick to absorb our railway securities and the 20th century found us far better equipped with transportation facilities than any nation in the world.

The requirements of a great nation had been met by the energy, the inventive genius, and splendid operating ability of those in command. This prosperity was naturally noticeable, and perhaps in excess of that pertaining to other industries, in consequence of which the economist proceeded to get busy. The political aspirants to fame seized upon the opportunity offered for establishing some very serious opinions among our business friends. The regulation of transportation, as to quality of service, methods of accounting, and regulation of rates, were soon paramount considerations and indulged in not only by our national legislators, but by the state governments as well. The transportation horse was well curried, but poorly fed, and soon its bones were more in evidence than before so called scientific management and regulation had been introduced. What was intended for regulation, in many instances proved to be strangulation, but by superhuman effort our great transportation lines were maintained equal to our business requirements. Terminal facilities had been perfected, the right of way made staunch and secure, by using new bridges, heavier rails and all other underlying requirements for the operation of maximum cars and locomotives, both passenger and freight. The steel passenger car and the steel freight car were absolutely necessary to provide the safety desired by the public, which in turn made it imperative to produce the modern high duty power houses or locomotives now being made, without which railway operation today would be impossible, and the general business of our country be reduced to but a fraction of what we now enjoy. We will omit the general wreckage caused by recent government control.

The large expenditure of \$1,540,000,000 this year by the railway systems of this country to perfect and provide their facilities to enable the general business of the country to proceed without interruption, is well known by all. A further reflection shows that an annual increase of 7% in our requirements, will during the next 10 years require at least a 7% increase in railway construction and equipment in order to keep abreast of the demands of an exacting public. In other words, an expenditure of approxi-

mately \$1,500,000,000 must be made annually during the next decade if we are to have dependable and proper service. Over 4,000 new locomotives will be placed in service by our railways this year, capable of developing in the aggregate over 10,000,000 horse power.

The time has arrived when public opinion regarding the railway transportation systems of this country and the operating devices employed thereon must be put straight. There should be a campaign for the dissemination of information and facts concerning terminal facilities, extension of lines, and reduction of delays, also as to the improved mechanical appliances, that are vitally necessary to safety and service, not alone applicable to locomotives but also to other equipment, and the facilities that must be employed to maintain and keep in proper repair the modern high duty rolling stock in service, so that once more the general public will have confidence in the various railway organizations and will point to their accomplishments with a great degree of pride. It is conceded by the entire world that in this country we have the highest perfection in railway transportation, but the general business of the country cannot progress faster than its transportation facilities will permit. The productiveness of our farms and workshops will go for naught if we do not have more efficient and more rapid facilities for the distribution of our products. The fundamental of prosperity is work, and work means that the producers of transportation are public servants whose business it is to serve the farmer and the producer, and those who are engaged in serving the transportation companies with all their numerous requirements, from steel spikes to locomotives, cannot expect increasing business unless transportation facilities are at least equal to or in advance of transportation requirements.

The way to increase prosperity is to increase our general business, and to promote our transportation facilities and various public utilities by confidence and financial support, coupled with the creation of more efficient and economical devices in transportation equipment. We must all do as your speaker has done, go out into the highways and byways of business, and speak to our business friends, encourage them to address their associates and workmen as to the necessity of abandoning the demagogue, political or otherwise, and to create among the general public a return of confidence in the vast army of transportation managers now responsible for the future of our country, and—to become stockholders in all public utilities that contribute to our greatness, and especially the American railway.

Tie Creosoting Contract.—Major-General Alex. McDougall, C.B., representing Calders, Ltd., London, Eng., is negotiating with the Canadian National Rys., for creosoting ties. It is proposed to establish two plants, one near Cochrane, Ont., and the other near Quebec, Que. The proposed contract would be for 10 years from Aug. 1, 1924, subject to renewal, and would provide for the treatment of a minimum of 300,000 ties a year at the Cochrane plant, and 300,000 a year at the Quebec plant. Negotiations are also said to be also going on with the Timiskaming & Northern Ontario Ry., for tie treatment at the Cochrane plant and with the C.P.R. for tie treatment at the Quebec plant.

Railway Rolling Stock Orders and Deliveries.

A. Guthrie & Co., Duluth, Minn., has bought a second hand Marion 300 full revolving steam shovel from Hydro Salvage Syndicate.

Quebec Development Co., St. Joseph D'Alma, Lake St. John, Que., has bought 36 second hand air dump cars from Hydro Salvage Syndicate.

The Belgo Paper Co., Montreal, has received a saddle tank locomotive from Canadian Locomotive Co. Details of it were given in Canadian Railway and Marine World for March, pg. 103.

The C.P.R., between May 15 and June 12, received 2 Pacific type (4-6-2) G.3 locomotives from Montreal Locomotive Works, and 1 steel baggage and express car from National Steel Car Corporation.

The Quebec Railway Light and Power Co. is converting 10 flat cars of 40,000 lb. capacity into cars of 60,000 lb. capacity, in its own shops. It has bought 3 steam locomotives for its Montmorency and the other two are expected to be in Division. One of them is in operation operation shortly.

The 10 mikado locomotives ordered by Canadian National Rys. from Canadian Locomotive Co., general details of which were given in Canadian Railway and Marine World for February, pg. 52, will be equipped with the Franklin Railway Supply Co's locomotive boosters. The locomotives, which will have 27 x 30 in. cylinders, and tractive effort of 54,600 lb., will be used on the western region.

Canadian National Rys. have ordered 44 locomotives from American Locomotive Co. for use on C.N.R. lines in the United States. They will be built at Schenectady, N.Y., and will be assigned as follows,—16 consolidation (2-8-0) type S 227, cylinders 24 x 32 in., 227,000 lb.; 8 eight-wheel (0-8-0) switching, type S 200, cylinders 22 x 28 in., 200,000 lb., for Central Vermont Ry.; 5 Pacific (4-6-2), type S 280, cylinders 25 x 28 in., 280,000 lb.; 5 eight-wheel (0-8-0) switching, type S 200, cylinders 22 x 28 in., 200,000 lb.; and 10 mikado (2-8-2), type S 300, cylinders 26 x 30 in., 300,000 lb. for Grand Trunk Western Ry.

Canadian Railway and Marine World for June stated that the following purchases had been made from Canadian Equipment Co.—Schroeder Mills & Timber Co., Pakesley, Ont., a second hand 40-ton, 4-wheeled Pennsylvania switching locomotive; Grenville Crushed Rock Co., 20 second hand 16 cu. yd. air dump cars; Northern Construction Co., second hand Marion 300 full revolving steam shovel. We are advised that these sales were made by Canadian Equipment Co., through Hydro Salvage Syndicate, which is composed of Canadian Equipment Co., and F. H. Hopkins & Co. We are also advised that the Northern Construction Co's purchase was a second hand Bucyrus 225 B full revolving steam shovel, and not a Marion one.

Canadian Salt Equipment Co's Tank Cars.

The Royal Securities Corporation offered recently \$100,000, Canadian Salt Equipment Co., Ltd., 6% equipment trust notes, maturing \$10,000 annually from March 1, 1924 to March 1, 1933. The company's capitalization is: common shares authorized \$100,000, issued \$35,000; equipment trust notes, this issue, authorized and issued, \$100,000. A letter from Sir Thomas Tait, President,

Canadian Salt Co., Ltd., is summarised in part as follows: Canadian Salt Equipment Co. owns 15 new class V liquid chlorine tank cars, modern, standard equipment in every respect, built by American Car & Foundry Co., and has 10 similar cars under construction by the same company for prompt delivery. The 25 cars now owned and under construction have been leased to Canadian Salt Co. for 10 years. Rentals will fully provide during the term of the notes for maturing instalments of principal and interest and other expenses incidental to the operations of the issuing company in connection with the equipment note issue. The notes will be secured by a fixed and specific first mortgage, pledge and charge on the lease between Canadian Salt Equipment Co., Limited, and Canadian Salt Co., and on all the right, title and interest in the 25 tank cars which the company will own. The tank cars, plus duty, have a value of \$130,000, as against \$100,000 par value of equipment notes to be issued. Approximately 23% of the actual cost of the cars is paid by the issuing company. The Canadian Salt Co., which has leased the 25 cars from Canadian Salt Equipment Co., is the largest Canadian producer of salt, and the only producer in Canada of bleaching powder, caustic soda and liquid chlorine

forge welded tanks, with capacity for 15 tons of liquid chlorine. Between the outer jacket and the inner tank is 4 in. of a cork insulation, and the jackets are designed so as to be readily removable for retesting the inner tanks at intervals, as required by the A.R.A. specifications. The tank dome is equipped with a man-hole cover, from which an eduction and an induction pipe project down into the tank, the pipes having ball check valves and connections with the required angle valves. There are also two additional angle valves in the manhole cover, and the safety valve is set to open at 200 lb. pressure. The manhole fittings are all protected by heavy cast steel dome housing and cover. The equipment includes K 2 triples, 6 x 8 in. couplers and Cardwell draft gear.

Timiskaming & Northern Ontario Railway.—The estimates passed at the Ontario Legislature's recent session, for the year ending Oct. 31, 1923, contain the following items:—Steam locomotives (revote \$13,816.17) \$17,816.17; freight train cars (revote \$651.23) \$139,615.44; passenger train cars (revote \$27,026.60), \$284,802.81; work equipment (revote \$2,747.75), \$30,546.06. We are officially advised that the item for steam locomotives is for superheating saturated steam locomotives. The item for freight train cars



Chlorine Tank Car, Canadian Salt Co.

for sale. Its plants at Windsor and Sandwich, Ont., have a capacity for salt production greater than the combined capacities of all other salt producers in Canada. During the past five years the company produced over 55% of bleaching powder and caustic soda consumed in Canada. The maximum amount required in any year for payment of Canadian Salt Equipment Co. note interest and maturing principal is \$16,000. Rentals payable to Canadian Salt Equipment Co. are an operating charge and constitute a claim against earnings of Canadian Salt Co., and consequently must be paid prior to the company's fixed charges, including bond interest. If not paid, the principal and interest of the notes become payable and the security enforceable.

The cars, an illustration of one of which is given herewith, have the following chief dimensions:

Length over all.....	35 ft. 1½ in.
" " end sills	32 ft. 5½ in.
" " striking plates	32 ft. 6¼ in.
Truck centers	22 ft. 8 in.
Width over running boards.....	9 ft. 3 in.
Height, top of rail to lower side of platform	2 ft. 11½ in.
Height, top of rail to top of platform framing	3 ft. 8½ in.
Truck wheel base	5 ft. 4 in.

These cars of steel underframe construction, are designed to comply with the A.R.A. and I.C.C. requirements for the transportation of liquid chlorine, and are equipped with 60,000 lb. capacity 4-wheel trucks of the arch bar type, and

covers 50 steel frame box cars being built by National Steel Car Corporation, particulars of which already have been published by Canadian Railway and Marine World. The item for passenger train cars is to provide for the purchase of a number of additional ones, should they be required. No orders have been placed and it is not probable that any will be placed in the immediate future. The work equipment item covers betterments to work equipment, steel draft arms, steel frames, etc.

The Commission has, we are officially advised, decided to order one or two all steel snowploughs.

Montreal Board of Trade new members include Sir Henry Thornton, President, Canadian National Rys.; S. J. Hungerford, Vice President, Operation and Construction Departments, Canadian National Rys.; Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.; and A. R. Gillham, Managing Director, Canadian Vickers, Ltd.

Rails and Accessories Orders. — The Canadian National Rys. has given the Algoma Steel Corporation an additional order for 15,000 tons of 85 lb. steel rails. During this year the C.N.R. has ordered 386,194 pairs of angle bars; 237,600 rail anchors; 2,025,500 tie plates; 2,296½ gross tons track bolts, and 3,411½ gross tons track spikes.

Mainly About Railway People Throughout Canada.

W. R. Baker, C.V.O., formerly Secretary, C.P.R.Co., has returned to Montreal from Europe. Mrs. Baker will remain abroad for some time longer.

C. S. Campbell, K.C., who died suddenly from heart failure, at his country place, Bedford, Que., June 13, aged 65, was a son of the late Sir Alexander Campbell, at one time Lieutenant Governor of Ontario. He was for some years a member of the firm founded by the late Sir John Abbott, and which has, ever since, acted as local solicitors at Montreal, for the C.P.R. He also acted for the Montreal Harbor Commissioners, and other transportation and allied interests.

Mrs. A. D. Cartwright, wife of the Secretary of the Board of Railway Commissioners, Ottawa, has gone to England for a trip.

J. Coleman, General Superintendent of Car Equipment, Canadian National Rys., Toronto, has been elected a member of the American Railway Association Mechanical Division general committee, to fill the unexpired term of T. H. Goodnow, who has been elected vice chairman and whose term would have expired in June 1924.

E. R. Decary, of Montreal, one of the Canadian National Rys' directors, has been elected a director of Canadian Industrial Alcohol Co. He is also Vice President and General Manager of the Title Guarantee & Trust Co., of Canada, and a director of the Detroit United Railways, and the Banque Nationale.

W. E. Duperow, Passenger Traffic Manager, Central Region, Canadian National Rys., Toronto, was presented with a fitted travelling bag, and Mrs. Duperow with a wardrobe trunk, by a number of friends, at Winnipeg, recently, on the anniversary of their wedding, and on leaving Winnipeg, where he had been General Passenger Agent, Western Lines, C.N.R., for some time.

Lorenzo Dow Gillett, Inspector, Board of Railway Commissioners, Toronto, died at St. Thomas, Ont., June 12, after a short illness. He was born at Lancaster, Eng., Dec. 25, 1852, and entered railway service in 1866, since when he was, to 1870, fireman, Northern Ry., Toronto; 1870 to 1877, locomotive man, same railway, and Toronto, Grey & Bruce Ry., Toronto; 1877 to 1890, locomotive man, Canada Southern Ry., St. Thomas, Ont.; 1890 to 1898, locomotive man, C.P.R., St. Thomas, Ont.; 1898 to 1903, General Foreman, Norfolk & Western Ry., Roanoke, Va.; 1903 to 1908, Master Mechanic, same railway, Bluefield, West Virginia; 1909 to 1911, Manager, St. Thomas, St. Ry., St. Thomas, Ont.; and from 1911, Inspector, Board of Railway Commissioners, with office at Toronto.

T. B. Grady, Superintendent, Island Division, Maritime District, Atlantic Region, Canadian National Rys., has returned to duty, after spending several weeks on a trip to the Pacific coast, the first holiday he had had for several years.

D. B. Hanna, ex President, Canadian National Rys., and **A. J. Mitchell**, ex Vice President of Finance, returned to Toronto early in June, after spending several weeks in Europe.

Mrs. Hays, widow of C. M. Hays, who, when he was drowned in the Titanic disaster, was President of the Grand Trunk

and Grand Trunk Pacific Railways, has left Montreal with her daughter, Mrs. Thornton Davidson, to spend the summer at Cushings Island, Me.

Peter Heenan, locomotive man, C.P.R., Kenora, has been re-elected, by acclamation, as a Labor-United Farmers member of the Ontario Legislature.

Robert Hobson, President, Steel Co. of Canada, Hamilton, Ont., and formerly one of the Canadian National Rys. directors, and Mrs. Hobson, sailed from Quebec, by the Empress of Scotland, June 9, for England, expecting to be away until September.

George Hodge, Assistant General Manager, Eastern Lines, C.P.R., has been re-elected Chairman of Canadian Railway Board of Adjustment No. 1, and **Ash Kennedy**, Assistant Grand Chief Engineer, Brotherhood of Locomotive Engineers, has been re-elected Vice Chairman.

O. W. Karn, Vice President of the Brotherhood of Locomotive Fireman and Enginemen, died at Oakland, Cal., June 13, aged 52, after three months illness.

Geo. D. LeBlanc, who has been appointed General Baggage Agent, Atlantic Region, Canadian National Rys., Moncton, N.B., was born there, Sept. 6, 1881, and entered the Government Railways service, Nov. 28, 1898, since when he has been, to Dec. 1901, clerk, General Manager's office, Intercolonial Ry.; Dec. 1901 to Oct. 1902, clerk to Advertising Agent, I.R.C.; Oct. 1902 to April 1910, clerk to General Baggage Agent, I.R.C.; April 1910 to Dec. 1915, clerk to General Passenger Agent, Canadian Government Rys.; Dec. 1915 to June 1917, chief clerk to General Passenger Agent, C.G.R.; June 1917 to Sept. 1919, chief clerk to Passenger Traffic Manager, C.G.R.; Sept. 1919 to May 1923, Assistant General Baggage Agent, Canadian National Rys., all at Moncton, N.B.

Ewen Mackenzie, who died at Toronto, June 8, aged 72, was associated with different railway and other construction companies, and at different times carried out work on the construction of the Toronto Ry. and the Toronto Suburban Ry. He was a brother of Sir William Mackenzie, President, Toronto Ry. Co., and former President, Canadian Northern Ry. Co.

M. H. MacLeod, Consulting Officer to the Executive, Canadian National Rys., Toronto, sailed from Quebec, by the s.s. Empress of Scotland, June 9, to spend about three months in Europe.

A. D. MacTier, Vice President, Eastern Lines, C.P.R., returned to Montreal June 6, after a trip to Great Britain.

Harold McEwen, who has been appointed Division Freight Agent, Canadian National Rys., Vancouver, B.C., was born at Maxville, Ont., May 31, 1890, and entered railway service in April 1908, since when he has been, to June 1908, clerk, General Freight Agent's office, June 1908 to June 1910, stenographer, District Freight Agent's office, June 1910 to June 1911, clerk, District Freight Agent's office, June 1911 to June 1913, Soliciting Freight Agent, Grand Trunk Ry., all at Montreal; Sept. 1913 to May 1918, Train Agent, Grand Trunk Pacific Ry., Regina, Sask., Smithers, B.C., and Watrous, Sask. May 1918 to Jan. 31, 1919, Soliciting Freight Agent, G.T.P.R., Edmonton, Alta.

Feb. 1, 1919 to March 31, 1923, chief clerk to Assistant General Freight and Passenger Agent, G.T.P.R., Prince Rupert, B.C.

Fred R. Miller of Roger Miller & Sons, harbor contractors, etc., Toronto, also a member of the Hydro Electric Power Commission of Ontario, and of the Toronto Transportation Commission, who died recently, left an estate valued at \$111,826.14, and an insurance policy payable to his widow for \$61,917.17. The income on the estate is to be paid to his widow so long as she remains unmarried. If she remarries, an annuity of \$600 a year is to be paid her. The only daughter is to receive the residue, and, upon the death of her mother, the entire estate.

Alex. J. G. Murdoch, who has been appointed Roadmaster, Expanse Subdivision, C.P.R., Assiniboia, Sask., is the youngest son of the late G. S. Murdoch, Traffic Manager, Ceylon Government Rys., and was born at Colombo, Ceylon, Jan. 8, 1878. He entered C.P.R. service in 1905, since when he has been, to 1907, rodman and timekeeper, grading Kootenay Central Ry., Golden, B.C.; 1907 to 1908, timekeeper, tracklaying and surfacing, Sheho extension, Sask.; 1909, assistant foreman, tracklaying and surfacing, Regina and Colonsay, Sask., and Komarno and Arborg, Man.; 1910 to 1912, material yard foreman and clerk to Assistant Engineer of Construction, Swift Current, Vanguard and Empress; 1912, draftsman and clerk to Assistant Engineer of Construction, Bassano-Empress Line, Alberta; 1913 to 1914, general construction foreman, Gleichen, Calgary, Bassano and Empress, Alta., and Kootenay Central-Bull River-Upper Columbia Lake construction; 1915 to 1919, with Canadian Expeditionary Forces, enlisting as sapper in Canadian Overseas Railway Construction Corps, receiving promotion through various non-commissioned ranks, and being given the rank of lieutenant of the same corps, in the field, Nov. 11, 1917; 1920 to May 14, 1923, in various capacities, C.P.R. Construction and Operating Departments, on Lanigan Northeasterly Branch, Sask.

W. H. Polley, formerly City Ticket Agent, C.P.R., Toronto, died there, June 1, aged 43, after a long illness. He was born at Trenton, Ont., and commenced his transportation service as clerk, in the old union ticket office in the King Edward Hotel, Toronto. In May 1913, he was appointed Travelling Passenger Agent, C.P.R., and in Oct. 1913, Assistant City Passenger Agent, at Toronto. From Dec. 1918 to Oct. 1922, he was City Ticket Agent, C.P.R., Toronto, when he was granted extended leave of absence on account of ill health.

Clarence S. Pushie, who has been appointed Relieving Superintendent, Atlantic Region, Canadian National Rys., with headquarters at Moncton, N.B., was born at New Glasgow, N.S., Aug. 12, 1885, educated at the High School, Truro Academy and the Empire Business College, Truro, N.S., and entered railway service, May 1, 1903, since when he has been, to Nov. 1904, clerk in Superintendent's office, Intercolonial Ry., New Glasgow, N.S.; Nov. 1904 to Dec. 1915, secretary to Superintendent, I.R.C., New Glasgow, N.S.; Dec. 1915 to July 1917, chief clerk to Superintendent, I.R.C., New Glasgow, N.S.; July 1917 to Oct. 1918,

assistant chief clerk, to General Superintendent, Canadian Government Rys., Moncton, N.B.; Oct. 1918 to Feb. 1920, Supervisor of Work Equipment, C.G.R., Moncton; Jan. 1921 to April 16, 1923, chief clerk to Superintendent of Transportation, Canadian National Rys., Moncton.

Lord Shaughnessy has been elected Chairman of the National City Co., Ltd., which has been incorporated by Dominion letters patent, to take over the National City Co's Canadian business, and that of the United Finance Corporation of Montreal. Among its other directors are also the following C.P.R. directors:—C. R. Hosmer, Sir Augustus Nanton and W. N. Tilley, K.C.

G. H. Shaw, at one time General Traffic Manager, Canadian Northern Ry., and Mrs. Shaw, sailed from Quebec by the s.s. Empress of Scotland, June 9, to spend about three months in Europe.

C. H. Temple, Chief of Motive Power and Rolling Stock, C.P.R., Montreal, has been elected a member of the American Railway Association, Mechanical Division general committee, to succeed W. H. Winterrowd, formerly Chief Mechanical Engineer, C.P.R., who has left railway service, and whose term would have expired in June 1924.

W. N. Tilley, K.C., one of the C.P.R. directors sailed on the company's s.s. Empress of Scotland, from Quebec, for Europe, June 9.

Board of Railway Commissioners' Partial Jurisdiction Over Canadian Government Railways.

The Railway Act of 1919 provides, in sec. 5, as follows:—"This act shall, subject as herein provided, apply to all persons, railway companies and railways, within the legislative authority of the Parliament of Canada, whether heretofore, or hereafter, and howsoever, incorporated or otherwise, except Government railways, to which, however, it shall apply to such extent as is specified in any act referring or relating thereto."

Order in council 115, passed at Ottawa Jan. 20, and published in Canadian Railway and Marine World for April, entrusted the management and operation of the Canadian Government Railways, including the Intercolonial Ry.; Prince Edward Island Ry.; National Transcontinental Ry.; the Lake Superior Branch, leased from the Grand Trunk Pacific Ry. Co.; the Hudson Bay Ry., and certain branch lines, to the Canadian National Ry. Co. This brought into effect the provisions of the Canadian National Railways Act 1919, sec. 14, as follows:—"Notwithstanding anything in the Government Railways Act, or any other act, the provisions of the Railway Act, respecting the operation of a railway (as distinguished from the provisions of such act respecting the construction or maintenance of a railway) shall apply to such of the Canadian Government Railways as would, but for the passing of this act, be subject to the Government Railways Act, during such time as the operation and management thereof is entrusted to the company under the provisions of this act."

The Canadian Government Rys. have, therefore, since Jan. 20, been subject to the Board of Railway Commissioners' jurisdiction, with regard to matters of operation, which include freight and passenger rates, but the Board has no jurisdiction over the lines in regard to construction or maintenance matters.

Operating Statistics, Canadian National Rys.

The Bureau of Statistics, Canadian National Rys., has issued rules and definitions governing the compilation of operating statistics, with the following introduction by Sir Henry Thornton, President:—"The rules and instructions herein presented have in view the compilation of operating statistics in such form and method, as will provide divisional and district officers with first hand information as their own immediate efforts in conducting transportation; provide general and executive officers with data reflecting the development of tendencies in the production of transportation and develop statistical data called for in the annual or monthly report schedules prescribed by the several regulatory commissions, government bureaus, etc. The elements entering into the production of transportation will be portrayed, in the several reports prescribed, in sufficient detail to permit analysis of the working of each operating division, but in the freight train performance the determination of loading and movement ratios will be carried down to the subdivision or locomotive-run basis. With these data in their early possession, it becomes the duty of all members of the operating staff to search out the favorable and unfavorable tendencies, and co-operate in the formulation of policies which will bring about and maintain that standard of performance so necessary to true economy and dependable service."

Railway Excursion Rates.

T. L. Church, Toronto North, asked the following questions in the House of Commons, recently, the answers being given by the acting Minister of Railways, Mr. Graham:

Q. "Is it the government's intention to introduce legislation this session to amend the Railway Act, so as to restore cheap, special rate excursion tickets (as was the custom before the war) on such special occasions as public holidays, week-ends, fall fairs, sporting contests, games and conferences?" A. "It is not the government's intention to introduce such legislation. This must be left to the initiative of the railways, subject to the supervision of the Board of Railway Commissioners, in regard to discrimination, etc., as provided by the Railway Act."

Q. "If the government does not propose such legislation this session, in view of the special and many urgent requests for these special rates last session from numerous fall fair organizations, the Canadian National Exhibition and many sportsmen's organizations and agricultural societies in Canada, will the Government or Minister of Railways use their good offices with the railway companies to restore this old and long established custom and practice as to special rates?" A. "The Government understands that the railways, in 1922, made the following arrangements for specially reduced fares, and is assured that they will carefully consider whether it is advisable to make any other special fares along the lines indicated in the question. Effective July 10, 1922, the Canadian railways voluntarily put the following reduced fares into effect:

"Organized excursions and pilgrimages, 100 or more adult fares guaranteed, lowest one-way first class, fare and one-third for the round trip, minimum fare

50c per adult ticket and 25c per child's ticket.

"Celebrations, demonstrations, regattas and political meetings, lowest one-way 1st class fare and one-half for the round trip, minimum fare 25c for adults or children.

"Round trip party fares, 10 or more adults travelling together on going trip, one-way 1st class fare and one-half for the round trip.

"Circuit tour party fares, 10 or more adults travelling together for entire trip, 75% of one-way 1st class fare between stop over points.

"Week-end fares, 2½c a mile. From industrial centers to country districts. Good going Saturday and Sunday; return limit Monday.

"Larger agricultural exhibitions, lowest one-way 1st class fare and one-third for round trip; minimum fare for adults or children 25c; territory to be agreed upon between interested lines.

"Smaller agricultural exhibitions and fall fairs, lowest one-way 1st class fare and one-third for round trip, minimum fare for adults or children, 25c; territory, from points where the lowest one-way 1st class fare to place of exhibition does not exceed \$3."

Shipments of Grain to Atlantic Ports.

In answer to questions by Hon. J. B. M. Baxter, St. John, N.B., the Minister of Trade and Commerce gave the following information in the House of Commons recently:—

The receipts of Canadian grain at Portland, Me., since Nov. 1, 1922, via Canadian Government Rys. were as follows, in bushels: wheat, 11,133,180; oats, 1,649,892; barley, 612,955; rye, 1,360,781; total, 14,756,808. The receipts of United States grain are not available.

The following bushels of grain were carried to St. John, N.B., since Nov. 1, 1922, by Canadian National Rys. for shipment:—

	Canadian	U.S.	Total
Wheat	957,085	55,107	1,012,192
Oats	585,282	.....	585,282
Barley	174,009	.....	174,009
Corn .....	.....	12,495	12,495
Rye .....	.....	299,680	299,680
Total.....	1,716,376	367,282	2,083,658

The following bushels of grain were carried to St. John, N.B., since Nov. 1, 1922, by the C.P.R. for shipment:—

	Canadian	U.S.	Total
Wheat	8,635,368	102,994	8,738,362
Oats	1,764,921	.....	1,764,921
Barley	647,692	.....	647,692
Corn .....	.....	628,686	628,686
Rye .....	.....	1,470,441	1,470,441
Total.....	11,047,981	2,202,121	13,250,102

No grain has been carried to Halifax, N.S., since Nov. 1, 1922, by the Canadian National Rys. for shipment.

Safety appliances on electric locomotives in road and switching service.—The Board of Railway Commissioners has issued a circular, transmitting rules and regulations for safety appliances on electric locomotives in road and switching service, which it proposes to embody in a general order to railways, and has asked for comments thereon.

Hudson Bay Railway Project. — J. L. Thomas, Secretary, Hudson Bay Tourist Association, Winnipeg, addressed the Westerners' Club, Montreal, June 14, on the trade and tourist possibilities of the Hudson Bay area, and advised the completion of the railway from Pas to Port Nelson, Man., and the development of the ocean route therefrom.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Government Merchant Marine.—C. K. JAMES, of the head office staff, has been appointed acting Purchasing Agent, at Montreal, consequent on the appointment of J. W. Corbett, formerly Purchasing Agent, C.G.M.M., as Assistant Purchasing Agent, Canadian National Rys., Toronto.

Canadian National Railways. — W. J. ATKINSON, heretofore Superintendent, St. Maurice Division, Quebec, Que., whose appointment as Assistant Superintendent, Quebec Terminals, Central Region, was announced in our last issue, has been appointed Superintendent, Quebec Terminals, Central Region, with jurisdiction over all train operations and handling of traffic within the following territory: east of Charny to Quebec, Palais terminal; Allenby Jct. to Quebec, Parent Square, Champlain spur and Quebec wharf, and his former position has been abolished. Office, Quebec, Que.

W. J. DONALLY, heretofore yard master, G.T.R. yard, has been appointed yard foreman, in charge of yard locomotives, C.N.R., Ottawa, Ont.

P. K. HUNT, heretofore, Manager, Macdonald Hotel, Edmonton, Alta., has been appointed Assistant to General Manager of Hotels, Winnipeg.

G. H. LASH, heretofore editor, Toronto Sunday World, has been appointed Publicity Representative, Office, Toronto. He reports to the Director of Publicity, Montreal.

C. C. McCULLOCH, heretofore General Yardmaster, G.T.R., yard, Ottawa, Ont., has, with the closing of Hurdman yard, been given charge of the entire Ottawa terminals. Office, Ottawa.

A. S. McLEAN, heretofore Superintendent of Hotels, Winnipeg, has been appointed Manager, Macdonald Hotel, Edmonton, Alta., vice P. K. Hunt, appointed Assistant to General Manager of Hotels, Winnipeg, and his former position has been abolished.

J. A. MILLER, heretofore shop foreman, has been appointed General Foreman, Mechanical Department, Island Division, Atlantic Region, Charlottetown, P.E.I.

H. G. O'LEARY has been appointed Division Engineer, Bridge and Building Master, and acting Roadmaster, Lakehead Division, Manitoba District, Western Region. Office, Fort William, Ont.

See also under "Redistribution of Western Region, Canadian National Railways."

Canadian National Rys. Express Department.—G. E. BELLEROSE, heretofore General Assistant, Express Department, has been appointed General Superintendent of Transportation, Express Department. Office, Montreal.

Canadian Pacific Ry.—W. J. ANDERSON, heretofore Travelling Freight Agent, London, Ont., has been appointed District Freight Agent, there, vice H. G. Buchanan, appointed District Freight Agent, Toronto.

H. G. BUCHANAN, heretofore District Freight Agent, London, Ont., has been appointed District Freight Agent, Toronto, vice G. C. Cochlan, deceased.

J. H. WILSON, heretofore Locomotive Foreman, John St., Toronto, has been appointed Division Master Mechanic,

Sudbury Division, Algoma District, at North Bay, Ont., and not at Sudbury, Ont., as stated incorrectly in our last issue.

Temiscuata Ry.—T. N. WALSH, heretofore Freight Claim Agent, Riviere du Loup, Que., has been appointed General Freight and Passenger Agent, vice A. Nadeau, deceased, and his former position has been abolished, all freight claims being dealt with by him as General Freight and Passenger Agent. Office, Riviere du Loup, Que.

Ties Bought for Canadian National Railways.

The following questions were asked in the House of Commons recently by H. A. Stewart, Leeds, Ont., and answered by acting Minister of Railways Graham: Q. "What quantities of cross ties were purchased from Canadian Tie & Lumber Co. during 1922, for use on any of the lines now included in the National Railway system, and on what dates were such purchases made?" A. "750,000 on Oct. 23, 1922."—Q. "What quantities of hardwood and soft wood ties were bought on each occasion?" A. "Approximately 50% of each."—Q. "What prices were paid?" A. "Hardwood, 35c to 75c; cedar, 40c to 85c; and small quantities of the following: hemlock, 30c to 70c; red oak and chestnut, 50c to \$1; white oak, 70c to \$1.30."—Q. "By whom were such purchases made?" A. "General Purchasing Agent, G.T.R. System."—Q. "Were tenders invited in connection with any of the purchases, and if so, on what dates; in what manner, and in connection with what purchases?" A. "No."—Q. "Were any such purchases made without tender, if so, on what dates, for what amount of ties and why were tenders not invited?" A. "Yes. Purchase made under contract entered into by the late G.T.R. management in July, 1917."

Transportation Specialist, Agriculture Department.

The Minister of Agriculture stated in the House of Commons, recently, in answer to questions: "Leonard Cook's position is that of transportation specialist, Agriculture Department. He has charge of preparing cases for live stock shippers and exporters, in connection with applications for reduction in freight rates, or improved service, for presentation to the Canadian Freight Association or to the Board of Railway Commissioners. He arranges for informal interviews with railway officials, for the purpose of securing improved rates, and of eliminating delay in the transportation of live stock; he checks the accommodation provided by the railways, in the way of cars and equipment, in connection with the transportation of live stock to domestic markets, or for export; he arranges for interviews with steamship companies for the reduction of ocean freight rates on live stock and live stock products; he supervises the movement of exhibition stock to and from our larger exhibitions; he answers numerous enquiries from live stock shippers re rates on live stock and checks rates charged; he addresses live stock meetings re transportation problems, and as a result of his work numerous resolutions have been received from various live stock associations commending in the highest possible terms the service that he has rendered

the transportation service since the Dominion Live Stock Branch was initiated. His time is fully occupied in carrying out said duties. His salary, when transferred to the Live Stock Branch, July 1, 1921, was \$2,280; it is now \$2,400. His travelling expenses from July 1, 1921, to March 31, 1922, were \$1,972.56; from April 1, 1922, to March 31, 1923, \$3,372.60."

Canadian National Rys. Directors' Occupations, Etc.

G. G. Coote, Macleod, Alta., asked in the House of Commons recently: "What are the names, addresses and occupations of the Canadian National Rys.' directors; for what length of time are they appointed; what is the salary of each; is the salary fixed by the Government, and if not, who by?" The acting Minister of Railways, Mr. Graham, replied as follows: "Major-General Sir Henry Worth Thornton, K.B.E., President and Chairman, Canadian National Rys., McGill St., Montreal, Railway President; John H. Sinclair, K.C., New Glasgow, N.S., barrister; Major G. A. Bell, C.M.G., Vice President, Canadian National Rys., Ottawa, Ont., also Deputy Minister Railways and Canals; Gerard Ruel, Vice President, Canadian National Rys., McGill St., Montreal, also General Counsel; Richard P. Gough, Sellers-Gough Fur Co., Toronto, merchant and banker; James Stewart, Winnipeg, grain merchant; Ernest R. Decary, Director-General, Title Guarantee & Trust Co. of Canada, Montreal, Vice President and Director, General Title Guarantee & Trust Co. of Canada; Frederick G. Dawson, Prince Rupert, B.C., merchant; Tom Moore, Ottawa, President, Trades and Labor Congress of Canada; Col. O. E. Talbot, Quebec, Que., Collector of Provincial Revenue, Quebec.

"The incorporating act, 1919, chap. 13, sec. 2, provides that 'The directors shall hold office from one annual meeting to another, or until their successors are appointed, unless removed by the Governor in council for cause.' The remuneration received by the directors as provided in sec. 5 of the act, has been approved at \$2,000 each per year. The directors may be paid by the company such sums for their services as the Governor in council may from time to time approve."

Railway Commissioners' Former Occupations.

G. G. Coote, Macleod, Alta., asked in the House of Commons recently: "What was the address and the occupation of each member of the Board of Railway Commissioners previous to his appointment?" The acting Minister of Railways, Mr. Graham, replied as follows: Hon. F. B. Carvell, K.C., Chief Commissioner, Minister of Public Works, Ottawa. S. J. McLean, Asst. Chief Commissioner, Professor of Economics and Transportation, University of Toronto, Toronto. Hon. W. B. Nantel, K.C., Deputy Chief Commissioner, barrister, St. Jerome, Que. A. C. Boyce, K.C., Commissioner, barrister, Sault Ste. Marie, Ont. Dr. J. G. Rutherford, C.M.G., Commissioner, Superintendent of Agriculture and Animal Industry, Natural Resources Department, C.P.R.; President, Western Canada Live Stock Union, Calgary, Alta. Calvin Lawrence, Commissioner, Legislative Representative, Brotherhood of Locomotive Engineers, Ottawa.

Canadian National Railways' Coal Supplies.

The following questions were asked in the House of Commons recently, by J. T. Shaw, Calgary West, Alta., and answered by the acting Minister of Railways, Mr. Graham:—

Q. "What persons, firms and corporations in Alberta supply coal to the Canadian National Rys.?" A. "Brazeau Collieries, Big Valley Collieries, Blackstone Coal Co., Blue Diamond Coal Co., Bush Mine Coal Co., Coal Valley Mining Co., Ellis Coal Co., Lakeside Coals, Coal Sellers, Ltd., Spicer Coal Co., Tofield Coal Co., Marcus Collieries, Mountain Park Coal Co., Rosedale Coal Co., Cadomin Coal Co., Humberstone Coal Co., Mount Cavell, Superior Collieries, Sterling Collieries."

Q. "What price is paid per ton?" A. "As tenders are now being asked for supplies for the coal year commencing April 1, next, the management does not consider it in the public interest to bring down the information at present."

Q. "Are the contracts for such coal awarded by tender?" A. "Yes."

Q. "For what period of such contracts, if any, have been awarded?" A. "Such contracts run from April 1 to March 31 each year."

Chinese Officials' Study of C.P.R. Methods.

During the visit of G. M. Bosworth, Chairman, Canadian Pacific Steamships, Ltd., to the Orient in 1921, an arrangement was made with the Chinese Government Railways Director General, under which six of the officials of the Peking-Mukden line were to visit Canada and spend some considerable time in the C.P.R. offices in Montreal, to secure an insight into C.P.R. methods. The officials selected were: Chung-Hsi Kwo, age 29, Assistant Traffic Inspector, Tientsin, Lang-fang section; Edward Tsung-Yuan Ch'ian, age 33, Assistant Secretary to Engineer in Chief and General Manager; James Houghtai Tong, age 32, completed education at Glasgow University, Scotland, Assistant to Store Superintendent, Stores Department; Ke-Fung, age 28, Translator, General Department, head office; Yen-Lin Kwan, age 29, Chief of Transportation Division, Traffic Department, head office; Huan Wen Wang, age 33, Chief of Land Department and association member of standing committee on the unification of railway accounts and statistics. With the one exception mentioned above, all these officials received their education in business or technical institutions in China, the second named holding the degree of B.Sc., and had been Professor of Mathematics before he entered railway service. Their railway experience has varied from five years, in the case of Ke-Fung, to 13 in the case of Chung-Hsi Kwo.

These officials reported at the C.P.R. offices in Montreal, June, 1921, and were assigned to different branches of the service, according to the work they would be performing in China. Chung-Hsi Kwo and Edward Tsung-Yuan Ch'ian started in the Operating Department and, with the exception of two or three months spent in the Accounting and Traffic Departments, they confined themselves to the operating end. They started in the yard and freight offices and went through the successive departments and offices, including the Superintendent of Car Service and General Manager's offices, being

given access to all records and information to enable them to obtain a complete grasp of the work. James Houghtai Tong started in the General Stores Department and spent most of his time going into all branches of the work. He spent the last two or three months in other branches of the Operating Department. Similarly Ke-Fung and Yen-Lin Kwan started in the Freight and Passenger Traffic Department, and spent most of their time there, putting in the last two or three months in the Operating Department. Huan Wen Wong spent all of his time in various branches of the Audit Department.

During their extensive stay, which came to an end recently, the officials secured a good working knowledge of methods and conditions far more so than they would have been able to do had their time been limited. Canadian Railway and Marine World is advised that they showed themselves to be apt students, and quick to grasp things, especially in view of the entirely different conditions existing in Canada, and on the C.P.R., as compared with conditions in China and on lines in that country.

A DeWitt Foster's Position on Canadian National Railways.

The following questions were asked in the House of Commons recently, by L. J. Lovett, Digby-Annapolis, N.S., and answered by the acting Minister of Railways, Mr. Graham:—

Q. "Is A. DeWitt Foster an employee of the Canadian National Rys.; if so, what position does he hold, and what salary does he receive?" A. "Yes. Superintendent of Resources, Chicago, \$450 a month."

Q. "Was he a former member of the House of Commons?" A. "Yes."

Q. "Was he compelled to resign his seat in the House; if so, for what cause, and is he the same A. DeWitt Foster who was implicated in scandals arising out of purchases of horses in Nova Scotia, for military purposes, during the late war?" A. "He resigned his seat on April 24, 1915, following a discussion in Parliament concerning the purchases of horses for war purposes. There is no official record as to why he resigned."

Q. "Is it the Government's intention to retain him in his present position?" A. "Mr. Foster entered the Canadian Northern Ry.'s employ on May 20, 1916, as Travelling Passenger and Immigration Agent, Chicago. The question of his retention is not a matter for the consideration of the Government, but of the Canadian National Rys. management."

Michigan Central Railroad Niagara Falls Bridge.

Sir Henry Drayton asked in the House of Commons recently:—"Is the new international Bridge of the Michigan Central Rd. Co. at Niagara Falls to be constructed by Canadian contractors, either in whole or in part? If in part, what work is being carried on by Canadian contractors? What are the names and addresses of Canadian contractors taking part in the construction of the bridge, and the amounts of contracts awarded each? What is the total cost of construction of the bridge?"

The acting Minister of Railways, Mr. Graham, replied:—"Plans and description of the bridge were approved by the Governor in council on recommendation

of the Minister of Public Works, as required in the case of navigable waters, by the Railway Act, sec. 248, and afterwards, as required by the same section, the plans were approved by the Board of Railway Commissioners and construction authorized. The Engineering News-Record of March 1, 1923, stated that the contract had been awarded to the American Bridge Co. for the steel work, which will require about 7,500 tons, contract price for which is about \$116 a ton. Abutments and other items of substructure, requiring about 11,000 cubic yards of concrete, are to be built under a separate contract as to which we have no information. The Railways Department understands that contract for the steel work was let after public competition, in which Canadian firms participated."

Editor's Note.—The official in the Railways Department, who prepared the reply for the acting Minister, might have stated that the information as to the letting of a contract, the weight of steel required, and the price per ton were announced in Canadian Railway and Marine World for February, which was a month before the belated announcement appeared in the Engineering News-Record.

Lawyers' Fees for Railway Arbitrations.

The House of Commons, on June 14, 1922, passed an order on motion of L. H. Martell, Hants, N. S., for a statement of all monies paid by the Dominion Government to barristers and solicitors for legal services in connection with the arbitrations respecting the acquisition of the Canadian Northern and Grand Trunk Railways' stocks, etc. The return, which was submitted in the House of Commons on Feb. 9, shows that \$35,000 was paid in connection with the Canadian Northern Ry. arbitration, and \$179,228.64 in connection with the Grand Trunk arbitration as follows:—

Canadian Northern Ry. Arbitration—W. N. Tilley, Toronto, \$25,000; Strachan Johnston, Toronto, \$10,000.

Grand Trunk Ry. Arbitration.—W. N. Tilley, Toronto, \$90,000; Estate of Z. A. Lash, Toronto, \$5,000; H. A. Lovett, Montreal, \$42,464.59; J. C. H. Dasseault, Montreal, \$9,164.05; H. McInnes, Halifax, \$23,910; E. F. Newcombe, Ottawa, \$8,690.00.

Varnish Purchases for Canadian National Railways.

The following questions were asked in the House of Commons recently, by S. Charters, Peel, Ont., and answered by the acting Minister of Railways, Mr. Graham:—

Q. "What purchases have been made since the present Government came into power, by the Canadian National Rys., or by the G.T.R., from Scarfe Varnish Works, Brantford, Ont.?" A. "\$14,203."

Q. "Were such purchases made after public competition, and if so, in what cases?" A. "All such purchases are made after public competition."

Q. "Is the President of this firm the Reginald Scarfe who is President of the Liberal Association at Brantford?" A. "No information; but, in any event the holding of such a position by the President of the firm would neither help nor hinder the purchases, which, quality established, are determined by considerations of price, not politics."

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Sectionalism and the Canadian National Railways.

Sir Henry Thornton, President, Canadian National Rys., in speaking before the Pittsburgh, Pa., Traffic Club, some little time ago, referred to the assurances given him by the Dominion Government as to the absence of political interference in C. N. Rys. management, and said: "I will say frankly that thus far there is every evidence that the Government intends scrupulously to stand by the assurance which was given me before I undertook my present task. But there is another form of political interference which is more dangerous, and more difficult to avert, than the ordinary or garden type, and that is that form of sectionalism which translates itself into terms of political influence."

There can be no doubt of the correctness of Sir Henry's statement concerning sectional feelings, both as to its danger and the difficulty of guarding against its effect. That sectionalism—which is nothing more nor less than an expression or desire on the part of people in a given community for things calculated to be of advantage to that community—should exist, is the most natural thing in the world, and so long as the thing desired may be obtained without undue harm to other parts of the country, and so long as the means taken to gratify that desire are legitimate and proper, then sectional feeling, and the effort to improve matters for which it is responsible, is not only proper, but is an indication of a desirable ambition to accomplish improvement. But, as the Canadian National President suggested, great potentialities for danger are to be found in the fact that communities, like individuals, are often prone to seek desirable ends by undesirable means.

The potential danger exists because of the prevalence of either ignorance, or disregard, of the difference between the function of Parliament and the Government, political institutions, on the one hand, and of the Canadian National Rys. management, an economic institution, on the other hand, and because a great many people, either failing to differentiate in these functions, or proceeding despite their knowledge, are bound to go to Parliament, or the Government, by direct or indirect routes, with local matters which should be dealt with solely by the Canadian National Rys. management. Not only is there a tendency for people to bring such matters to the political body, but some members of the Senate and House of Commons themselves, as evidenced by the numerous questions having to do purely and simply with problems of operation and management brought up in both houses, introduce into the political arena matters concerning their home territory which are primarily economic, and which should be the concern of the railway management only. It is a natural thing that people should want matters affecting their provinces, cities, towns or rural municipalities dealt with by the political authority, and as the danger from sectionalism is therefore a natural danger, it is one that should be doubly guarded against.

If it be but sought for, there will be evident a clearly defined line of demarcation as between governmental and parliamentary functions with regard to the Canadian National Rys., and managerial functions, and it will be evident that the vast majority of local and sectional matters are among those that come under the latter head. The manage-

ment of a large railway system necessarily has a hard time of it trying to please everybody in the territory served, and sectional desires and demands are a continual source of worry to railway officers, but if Canadian citizens will recognize, as they should, that the things they want from the Canadian National Rys. for their particular communities should not be sought after through political channels, but should be taken up with the railway management in a straight-forward manner, then the troubles the management will experience with sectional demands should not be greater than those experienced by the managements of privately owned railways. It should be recognized that while the Government must function in regard to matters of broad policy in the National Railways experiment, the matter of management is the responsibility of Sir Henry Thornton and his associates, and the Canadian people should see to it that those officers are not handicapped by sectionalism. It should be remembered, as we have pointed out, that ever present sectional and local ambitions are enough of themselves to give sufficient worry to operating and traffic men, without those entertaining such ambitions undertaking to hasten their gratification through the exercise of undue political influence, to the advantage, possibly, of the community directly concerned, but to the detriment, most probably, of the greater community extending from the Atlantic to the Pacific and therefore to the great majority of its individuals.

Canadian Pacific Railway Co's Reports Wanted.

Canadian Railway and Marine World wants, to complete a file, one copy each of the C.P.R. Co's directors' annual reports for 1881, 1882, 1883, 1884 and 1886, together with the proceedings at the annual meetings at which those reports were adopted. Anyone who has them, and is willing to dispose of them, is requested to communicate.

American Railway Association, Car Service Division.—R. W. Edwards has been appointed District Manager, car Service Division, Toledo, Ohio, with jurisdiction over territory as follows,—Michigan, lower peninsula; Indiana, north of line from Michigan City, through to Watah, Fort Wayne and Decatur; Ohio, north of line from Decatur, through Mansfield and Cortland; Pennsylvania; New York, north of line from Cortland, Ohio, through Meadville to Jamestown, to Buffalo and Niagara Falls; Ontario, west of line through Toronto to southern end of Georgian Bay.

Beer and Wine on Dining Cars in Quebec.—It was stated in Canadian Railway and Marine World for February that we had been officially advised that the Canadian National Rys. management had decided to obtain a license from the Quebec Liquor Commission for the sale of beer and wines on dining cars in that province. A license has now been issued by the Commission, and the sale of beer and wine, at meals on C.N.R. dining cars was started early in June. Such sale has been in effect on C.P.R. dining cars for a considerable time.

Canadian National Rys. Branch Lines, Construction, Etc.

The House of Commons, on June 15, passed the following motion by Hon. E. M. Macdonald, Pictou, N.S., Minister without portfolio, who moved it in the absence of the Minister of Railways, Hon. G. P. Graham: That the House, at its next sitting, go into committee of the whole to consider the following proposed resolution: That it is expedient to bring in a measure respecting the construction of Canadian National Railway lines, and to provide,—That the Governor in council may provide for the construction and completion by the Canadian National Ry. Co. of the lines of railway mentioned or referred to in the schedule to these resolutions. That any of the said lines connecting with the Canadian Government Rys. may be declared by the Governor in council to form part of the Canadian Government Rys. Lines of railway so declared shall be constructed by the company on behalf of His Majesty and the company shall cause the title to the necessary lands or interests in lands to be acquired in the name of His Majesty. That with respect to Government railway lines the Governor in council may authorize advances to be made to the company, from the consolidated revenue fund, to cover the necessary expenditure in acquiring such lands or interests in lands and in constructing and completing such lines of railway. That with respect to the lines of railway mentioned or referred to in the said schedule other than Government railway lines (which other lines are hereinafter referred to as National railway lines) the Governor in council may authorize the guarantee of the principal and interest of the securities of the company issued under the provisions (save as herein varied) of the statutes of 1919, chap. 13, sec. 26, to an amount approved by the Governor in council, but not exceeding \$40,000 a mile of such National railway lines. That the certificate of the Minister as to the mileage of the national railway lines shall for these purposes be conclusive, but the Minister may issue interim certificates from time to time based upon the estimated mileage and a final certificate to accord with the miles and fractions of miles actually constructed, each line of railway being treated as a

separate line. That the mileage of the said lines of railway and the cost of construction thereof mentioned in the schedule hereto shall be deemed to be merely estimated distance and costs. That the nature and form of securities to be issued and guaranteed shall be approved by the Governor in council and signed by the Minister of Finance, and may, as the Governor in council decides, be secured by mortgage or deed of trust. That to enable the work of construction and completion of the National railway lines to proceed forthwith the Governor in council, pending the issue and disposal of such guaranteed securities, may authorize advances to be made to the company from the consolidated revenue fund, such advances to be reimbursed to His Majesty by the company from the proceeds of the sale or disposition of such guaranteed securities.

The House went into Committee of the whole, on the resolution on June 21, on the Minister of Railways' motion. In the discussion which followed, the question of service on the railways in the Gaspé Peninsula, Que., and the proposals to buy the Kent Northern Ry. in New Brunswick and the Inverness and Richmond Ry. in Nova Scotia were mentioned, and the Minister stated that he would bring the first matter to Sir Henry Thornton's attention. With regard to the two other lines, it might be possible to do something later next spring.

Members taking part in the discussion mentioned a number of areas in various parts of Canada where they claimed new lines are required, and the Minister in reply stated that there was not a single line in the schedule that had not been recommended by the C.N.R. directorate. The present programme will extend over three years, so that for the present year the appropriations required will be about \$9,000,000. The construction of about a hundred lines were being pressed on the board, only so much money could be provided and the Government told the directors to clarify the list and the present schedule is the result. If the directors see their way to recommend further construction, the Government, so far as the country will warrant, will meet the situation.

The resolution was reported read a second time and concurred in, and a bill to give effect to it was introduced by the Minister of Railways and read a first time.

During the discussion on the motions for the second and third readings of the bill on June 25 and 26, amendments were moved by the opposition leader, Mr. Meighen, but were defeated by large majorities, and the third reading given.

Railway Earnings.

Canadian National Railways.

Following are total operating revenues, total operating expenses, and net operating revenues, or deficits, for the Canadian Northern Railway System, including the Duluth, Winnipeg & Pacific Ry.; Canadian Government Railways, including the Intercolonial and Prince Edward Island Rys., and various local lines in the Maritime Provinces and Quebec, which have been acquired by the Dominion Government; Grand Trunk Pacific Ry.; Grand Trunk Railway lines in Canada and the United States, and Central Vermont Ry., steam lines only.

	Revenue.	Expenses.	Net.	Increase.
April	\$21,056,312	\$18,826,000	\$2,230,312	\$3,197,173

Grand Trunk Railway.

Following are total operating revenues, total operating expenses, and net operating earnings, or deficits, of the G.T.R. system, for 1923 and 1922:—

	Revenue.	Expenses.	Net.	Increase or Decrease.
Jan.	\$8,623,348	\$7,937,775	\$ 685,573	\$ 89,768
Feb.	7,942,776	7,582,837	359,939	*836,517
Mar.	10,197,599	8,408,341	1,789,258	613,898
April	10,838,158	7,763,879	3,074,279	2,771,740

\$37,601,881	\$31,692,832	\$5,909,049	\$2,638,899
Inc'se	\$7,380,705	\$4,741,816	\$2,638,889

*Decrease.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross.	Expenses.	Net.	Increase or Decrease
Jan.	\$13,148,914	\$12,423,888	\$ 725,026	\$ 236,549
Feb.	11,159,865	10,664,371	495,494	*158,994
Mar.	13,585,763	11,606,049	1,979,714	*440,793
April	13,651,494	11,700,615	1,950,879	402,107

\$51,546,136	\$46,399,923	\$5,146,113	\$38,868
Inc'se	\$2,725,371	\$2,686,503	\$ 38,868

*Decrease.

Approximate gross earning for May, \$13,828,000, and for three weeks ended June 21, \$9,535,000, against \$13,253,000 and \$9,064,000, for same periods 1922.

Delaware & Hudson Co's Canadian Subsidiaries.

The D. & H. Co.'s report for the calendar year 1922 contains the following: "The Quebec, Montreal & Southern Ry. Co.'s operating revenues for 1922, increased \$7,493, or 1%, and the operating expenses increased \$27,563, or 3%. Income from rent of freight car equipment increased \$60,294, or 23%; and the net deficit, before deducting interest due your company, was \$65,080, a decrease in the net deficit of \$37,384. The freight movement increased 2,577,319 ton-miles, or 15%; and freight revenues increased \$22,077, or 5%. The passenger movement decreased 367,722 passenger-miles, or 9%; and passenger revenues \$15,253, or 10%. The Napierville Junction Ry. Co.'s operating revenues decreased \$6,189, or 1%; operating expenses decreased \$105,989, or 22%; and net income increased \$94,811."

Location	Mileage already graded	Estimated mileage including existing grading	Estimated cost
Lockeport station to Town of Lockeport, N.S.	0	4	\$ 150,000
Sunny Brae Branch to Guysboro, N.S.	0	67	3,500,000
Meductic, N.B., westerly to International Boundary	0	25	1,260,000
Grande Fresniere, Que., to Rinfret Jct.	0	12	357,000
China Clay Branch, Que., to St. Remi d'Amherst	0	2	65,000
Longlac to Nakina, Ont.	0	29	1,944,000
St. Rose du Lac Branch to Rorketown, Man.	22	22	378,000
Pine Falls Branch, Man., to Winnipeg River	0	19	450,000
Peebles Southerly Branch to mile 22, Sask.	20	22	300,000
Thunderhill Branch, northwesterly to Prince Albert Branch	4	69	1,656,000
Melford Branch, northeasterly to near Nipawan	6	17	360,000
From Prince Albert Branch northeasterly to near Paddockwood, Sask.	18	23	406,000
Bengough Branch, southwesterly past Fife Lake, Sask.	0	48	1,404,500
Gravelbourg Branch, westerly to Neidpath, Sask.	11	11	174,000
Eaton Branch, southeasterly towards White Bear, Sask.	35	35	649,000
Turtleford Branch, southeasterly to near Hafford, Sask.	23	102	2,313,000
Jackfish Branch westerly to Glenbogzie, Sask.	5	5	181,000
Vonda Branch northeasterly to near Wakaw, Sask.	23	31	581,000
Dunblane Branch to Mawer, Sask.	0	42	2,767,000
Willowbrook Branch westerly to mile 6 west of Willowbrook, Sask.	4	0	154,000
Acadia Valley Branch westerly to mile 43, Sask. and Alta.	42	42	768,000
Alliance Branch to a point between Sibbald and Alsask, Alta.	0	70	1,034,000
Hanna Branch to Warden, Alta.	0	57	1,445,000
Loverna Branch, westerly, to connect with Hanna-Warden Br'ch, Alta.	0	50	1,362,000
St. Paul Branch easterly to mile 21 beyond St. Paul, Alta.	0	21	525,000
Joint section with C.P.R. between Rosedale and Bullpound Creek, Alta.	Half cost	39	915,000
Okanagan Branches to Kelowna and to Lumby, B.C.	101	105	2,307,000
Vancouver Island Branch, to complete to mile 100	55	26	348,300
		Track only	
Cowichan Bay cutoff to Cowichan Bay, Vancouver Island	0	10	554,100
	369	1,011	\$28,307,000

Questions About a Canadian National Railways' Director.

The following questions were asked in the House of Commons recently, by R. W. Grimmer, Charlotte, N.B., the answers being given by the Minister of Railways, Mr. Graham:—

Q. "Is the recently appointed director to the Canadian National Rys., Mr. Onesiphore Talbot, an employe of the Quebec Government?" A. "Mr. Talbot is reported to be an employe of the Province of Quebec."

Q. "If so, when was he first engaged by the Quebec Government, for what department, and at what salary? When he was appointed director to the Canadian National Rys., what position did he fill in the Quebec Government service and what salary was he paid?" A. "No information."

Q. "Does the Government insist that Mr. Talbot resign from his employment in the Quebec Government service, or is he continued in such service?" A. "The Government does not require of Canadian National directors that they give up their regular employment."

Q. "What remuneration and privileges does Mr. Talbot enjoy as director of the National Railways?" A. "Director's fee, \$2,000 a year, and necessary transportation and living expenses when attending meetings of the board."

Q. "Was Mr. Talbot a defeated Liberal candidate in the general elections of 1911, and if so, for what constituency did he run?" A. "Mr. Talbot, like many other very worthy gentlemen, failed of re-election in 1911, when he stood for the County of Bellechasse, which constituency had honored him in 1896, 1900, 1904 and 1908."

Mr. Grimmer brought the matter up a second time in the Commons, asking the following questions, which were answered by Mr. Graham.

Q. "Is the Mr. Talbot who has been appointed a director of the Canadian National Rys., the same Mr. Talbot that was appointed to the department of the collector of provincial revenue of the Province of Quebec in the district of Quebec, on Nov. 18, 1911, at a salary of \$2,500 a year, and whose name appears in the Comptes Publics, 1921-22, of the Province of Quebec, as being still employed at the same salary?" A. "No information, but probably is the same gentleman."

Q. "If the fact is that this employe of the Quebec Government has been appointed to the board of the National Railways, does the Government propose giving other provincial governments similar representation on the board by appointing one of their servants to that body?" A. "No director has been appointed to represent a provincial government."

Mr. Grimmer, on bringing up the matter a third time, asked the following questions, which were answered by Mr. Graham:—

Q. "Is it the Government's view that the position of director of the Canadian National Rys. is of so little importance as to be properly filled by a civil servant, whose business ability is represented by a yearly salary of \$2,500 since Nov., 1911, with no increases?" A. "The remuneration of a Canadian National director, \$2,000 a year, is not necessarily indicative of the business ability of the directors, nor is the fact that the direc-

tors have had no increase since the board was appointed a reflection on the manner in which they have discharged their duties."

Q. "In view of the fact that Mr. Talbot is continuing his service with the Quebec Government, is the Dominion Government nevertheless of the opinion that should occasion arise, he would not follow the instructions, or representations, of his provincial employers?" A. "In the Government's view, Mr. Talbot's experience and acquaintance with conditions pertaining to the Quebec district, will be a distinct advantage in the consideration, by the Canadian National board, on railway questions affecting that province, in the welfare of which the Dominion Government, the Canadian National board, and the Quebec Government are, in their respective spheres, equally concerned."

Freight Loaded Contrary to Embargo Restrictions.

The Railway Association of Canada has issued the following revision of the Canadian Railway War Board's circular 115:—Difficulties in connection with disposition of freight loaded contrary to embargo restrictions have emphasized the importance of arranging through movement to destination before car is allowed to leave originating point, or of otherwise satisfactorily disposing of the shipment. Therefore, it is recommended that member lines adopt the following regulations for the guidance of agents and others concerned: "In the case of cars loaded or partly loaded prior to agent's receipt of embargo restrictions, or if an agent, in error, allows cars to be loaded to an embargoed destination, he will advise the shipper of the situation, and endeavor to arrange to have cars billed via an open route, or to an open destination or have the shipment unloaded; having failed to arrange disposition in this manner, he will report the circumstances to the proper officer for instructions. In the case of failure of shippers to observe embargo restrictions of which they have information, the agent will insist that cars be billed via an open route, or to an open destination, or be unloaded, and will assess proper demurrage charges during period cars are held awaiting disposition. If an alternative route to desired destination is open, but agent's tariffs do not provide rates, he will immediately ascertain from the proper traffic officer whether rates are available. In no case is the agent at shipping point to allow cars to go forward in the face of embargoes of which he is informed, except upon special authority of the proper officer."

The C.P.R. Summer Bungalow Camps.

The C.P.R. has opened a new summer bungalow camp at the southern end of Lake Helen, Ont., which has been named the Nipigon River Camp. It consists of a community house, 6 double bungalows, each with 2 rooms and 2 beds in each, and 9 one-room single bungalows. The buildings are of rustic frame construction with shingle roofs. In addition to the permanent bungalows, 7 canvas houses are provided which can be erected speedily as necessity arises. The camp

is about a third of a mile from a special flag station on the main line; a bus service is provided between the station and the camp, and there is a ferry service between the camp and Nipigon on the west side of the river. The camp is lighted by a gasoline and coal oil system. The company has a camp on the shore of French River, near French River station, similar to the Nipigon River one, with a capacity for 50 guests; and another at the southern end of Devils Gap, on the Lake of the Woods, the nearest station being Kenora. It has 8 double bungalows and 12 single ones, with capacity for 50 guests. It is lighted by electricity. These bungalow camps are operated on the American plan at \$5 a day, or \$30 a week for each person. Launches, canoes and boats are provided at moderate charges, and experienced guides are available for fishing or explorations. The camps are open from July 1 to Sept. 15. The company has operated similar bungalow camps successfully in the development of its tourist traffic in the Rocky Mountain district, for several years.

Proposed Changes in Railway Act.

A bill was introduced in the House of Commons, recently, by Hon. H. H. Stevens, Conservative, Vancouver Center, proposing several amendments to the Railway Act 119. The first is to sec. 52, subsec. 1, which gives the Governor in council power at any time to "vary or rescind any order, decision, rule or regulation of the Board (of Railway Commissioners)." Mr. Stevens wants this clause made to read "to vary, rescind or refer back to the Board for further consideration. . . ." The balance of the proposed changes have to do with the matter of discrimination, and the sum and substance of them is that in all clauses having to do with discriminatory practices, the words "unjust," "unjustly," "undue," "unreasonable," etc., as commonly used throughout the act, as qualifying the word "discrimination" should be removed. For example, in sec. 314, subsec. 4, Mr. Stevens wants the word "unjustly" struck out, so that the clause would read, "No toll shall be charged which discriminates between different localities," instead of "No toll shall be charged which unjustly discriminates . . ." etc. Other changes of like nature he wants made in section 316, subsection 3, paragraphs (a), (c) and (d); in section 317, subsections 1 and 2, and in section 319.

Mr. Stevens advised Canadian Railway and Marine World recently that the bill had been held over pending further consideration by the Government of the whole freight rates question as applying to British Columbia; that he was expecting such consideration in the then near future, and that it was not likely that the bill would be proceeded with during the session.

Pensioners Passes on Canadian National Rys.—The acting Minister of Railways, Mr. Graham, stated in the House of Commons recently, in answer to questions by C. A. Gauvreau, Temiscouata, Que., that old pensioners of the G.T.R. are still entitled to an annual pass on the National railways, and that the question of granting the same favor to old pensioners of the Intercolonial Ry. was under consideration by the management.

C.P.R. Providing Labor for Western Farmers.

The C.P.R. has started a plan to encourage immigration and supply the labor required by western farmers. Forms have been prepared to delivered to station agents for distribution among farmers, on which the latter are invited to state their requirements as to the class and nationality of labor required, when desired, wages offered and other details. These forms are used as the basis of reports to C.P.R. agents in Great Britain, Belgium, Denmark, Holland, Norway, Switzerland and other countries, who are in touch with prospective immigrants, and are in a position to judge of their suitability. No expense to the farmer applying for labor will be entailed; the labor will be delivered at the station specified on the form on or about the date required, the company looking after all details. It is felt that as, in the majority of cases, farmers will prefer to hire labor of their own nationality, the scheme will not only furnish the exact type of farm labor required, but will also bring to the country a large number of immigrants of the most desirable type.

Grand Trunk Railway Acquisition and Results.

The following questions were asked in the House of Commons recently, by A. J. Benoit, St. John's and Iberville, Que., and answered by the acting Minister of Railways, Mr. Graham:—

Q. "What was the purchase price paid by the Government for the Grand Trunk Ry?" A. "The Government acquired control of the Grand Trunk under the terms of the agreement embodied in chap. 17, of 1919, and chap. 13, of 1920, by which the Government guaranteed the interest upon the debentures and guaranteed stocks, and undertook to acquire, at a valuation to be established by arbitration, the preference and common stocks. The annual interest charges upon the debentures and guaranteed stocks amount to \$8,984,634.58. The board of arbitration held that, at the time of taking over, the preference and common stock were valueless, in view of the unsound financial condition of the company. Under the agreement, the Government became responsible for Grand Trunk financing as of May 21, 1920, and has, through the receiver, been responsible for Grand Trunk Pacific financing since the default of that subsidiary of the Grand Trunk on March 9, 1919. What these responsibilities have cost the Government to December 31, 1922, will be disclosed by the acting Minister of Railways in his annual statement to Parliament."

Q. "Who were the arbitrators employed by the Government in connection with the G.T.R. arbitration, and what fees were paid them?" A. "The late Sir Walter Cassels, chairman, \$25,000 by the Government, and \$25,000 by G.T.R. shareholders; Sir Thomas White, \$29,000."

Q. "Since becoming part of the Canadian National Rys., has the G.T.R. section of said railways, in the last annual financial statement, shown a profit or loss?" A. "The results for 1921, including the Central Vermont, were a net deficit, after fixed charges, of \$15,672,299.34. The 1922 results will be disclosed by the acting Minister of Railways in his statement to Parliament."

Purchase of New Brunswick Railways by Dominion Government.

Acting Minister of Railways G. P. Graham, stated in the House of Commons recently, in answer to questions by R. B. Hanson, York-Sunbury, N. B., that the Government had completed the purchase of the Caraquet and Gulf Shore Ry., and had paid the purchase price, with the exception of \$550, which had been retained at the Justice Department's request, to protect the Post Office Department's claim against the railway for registered letters lost before it was taken over. One creditor's claim filed with the Department had been withdrawn, and the others were not considered valid.

The Moncton and Buctouche Ry's purchase price had not been paid by the Government, owing to the owner's failure to convey the railway free of encumbrances. In answer to the questions: "Is it the Government's intention to see that the creditors of the railway are paid in full before anything is paid to the company, and what steps, if any, are being taken by the Government or the Railways Department to compel the company to pay its creditors?" Mr. Graham said: "The obligation is on the company to convey the property free from encumbrances. Upon this being done to the Justice Department's satisfaction, the purchase price will be payable to whoever may be entitled to it. When the agreement to sell was reached in 1918, the Bank of Montreal filed with the Government a power of attorney from the company to receive all monies due or to become due."

Maritime Provinces Ask Lower Freight Rates.

The following motion by J. W. McDonald, Pictou, was passed by the Nova Scotia House of Assembly recently: "Whereas the freight rates charged by the railways connecting the maritime provinces with the rest of Canada are so high as to very seriously affect the commercial and industrial interests of the maritime provinces, therefore resolved that this Legislature is of the opinion that immediate action should be taken to secure the co-operation of the Governments of New Brunswick and Prince Edward Island with the object of securing united action to preserve and protect our interests by securing the services of a competent freight rate expert for the maritime provinces, and by impressing upon the Dominion Government the importance of putting into effect at the earliest possible moment the recommendation of the House of Commons special committee on railway transportation costs, in regard to a general reduction in freight rates."

Enquiries About Railway Traffic in Quebec and Ontario.

On Sir Henry Drayton's motion, the House of Commons made an order recently, for a return giving the following information, for the last completed annual accounting period:—1. The amount of revenue, freight and passenger traffic originating on the different divisions of the G. T. R. in Quebec and Ontario, and the earnings therefrom. 2. The amount of revenue, freight and passenger traffic originating on the G. T. R., in Montreal, Ottawa, Toronto, and Hamilton, and the earn-

ings therefrom. 3. The amount of freight moving in less than carload lots from Montreal, Ottawa, Toronto and Hamilton on the G. T. R., and the earnings therefrom. 4. The number of way freight trains operated, their mileage and earnings, from Montreal, Ottawa, Toronto and Hamilton on the G. T. R. 5. The amount of revenue, freight and passenger traffic originating on the different divisions of the Canadian National Rys. in Quebec and Ontario, and the earnings therefrom. 6. The amount of revenue, freight and passenger traffic originating on the Canadian National Rys. in Montreal, Ottawa, Toronto and Hamilton, and the earnings therefrom. 7. The amount of freight moving in less than carload lots from Montreal, Ottawa, Toronto and Hamilton on the Canadian National Rys., and the earnings therefrom. 8. The number of way freight trains operated, their mileage and earnings, from Montreal, Ottawa, Toronto and Hamilton, on the Canadian National Rys.

Valuation of C.P.R. Lines in the United States.

At the end of 1922, the Interstate Commerce Commission's Valuation Division has made over 300 reports, on the value of some 450 railway corporations having about 50,000 miles of line. These valuations are being made in accordance with the Valuation Act of 1913, and since the Transportation Act was passed the work has been speeded up considerably. Most of the valuations so far made by the Commission have been tentative, although a few final ones have been served.

The Commission recently fixed the value of C.P.R. lines in the U.S. as \$,069,000. This is for the lines in Maine and Vermont and does not include the Minneapolis, St. Paul & Sault Ste. Marie or other subsidiary lines.

In almost all cases where the Commission has served notice on U.S. lines as to the sum determined as their value, the railways have protested and claimed their properties to be worth more. Under the Transportation Act, the roads are supposed to be entitled to earn a stated percentage on their property valuation, so it is evident that the more any railway is valued at, the greater will its justified net operating income be. No statement has been made as to the value the C.P.R. places on the lines reported upon by the Commission.

English Farm Girls in Canada.—Sir Henry Thornton, President, Canadian National Rys., offered recently, through the London Daily Mail federation of Young Farmers, four travel scholarships for young women. The Misses Joan Moore, Leicestershire; Ivy Townsend, Surrey; Mildred White, Devon; and Emma Absolon, London, the latter interested particularly in beekeeping, were selected, and sailed from Southampton, May 27. After visiting the agricultural and domestic science teaching institutions in Quebec and Montreal, they were taken on a trip across Canada by the C.N.R. lines. On returning Misses White and Townsend will stop at Winnipeg to attend some courses at the Manitoba Agricultural College, and Misses Moore and Absolon will put in some time at the Ontario Agricultural College, Guelph. They will return to England in October, and during the winter will address meetings throughout the country in connection with the C. N. Ry's emigration campaign there.

Canadian National Railways Construction, Betterments, Etc.

New Glasgow Station.—The fire of March 7, which destroyed the upper portion of the station building, also used as divisional headquarters, at New Glasgow, N.S., did considerable damage to the ground floor. The building was a one and a half story brick structure 180 x 30 ft. We are officially advised that it is being rebuilt as a 2-story structure using the existing first story walls. The new portion of the building will be faced by pressed brick with common brick backing, precast concrete cornice and copings, a flat roof draining to the center of the building, the roof being covered with built-up roofing and pierced with outlets for rainwater leaders. The ground floor will contain the waiting room, smoking room, ticket office, telegraph office, baggage and express rooms. The second floor will contain the Superintendent's and Assistant Superintendent's, and other division offices. The interior trim of the principal offices will be of Douglas fir, with plastered ceilings. The trim of the second story will be of pine, with hardwood floors, and burlap wall covering, and a vault will be provided for the accounting office records. The reconstruction is being done by the railways' own forces.

Wellington St. Subway, Montreal.—Montreal City Council executive committee is reported to have obtained a grant of \$2,000 for preparation of plans for a new subway under the old G.T.R. tracks on Wellington St. The estimated cost of the work is \$200,000 but it is not expected that a start will be made on it until early in 1924.

Ottawa cross town tracks.—Sir Henry Thornton, President, attended a meeting held in Ottawa, recently, to consider the question of the cross town tracks, which has been under discussion for some years. He is reported to have stated that they must ultimately be removed, and instructions would be given C. S. Gzowski, Chief Engineer, Construction Department, to confer with any competent engineer appointed by the city to discuss the whole situation and to draw up a plan for work to be done which would represent the commencement of the removal of the tracks. The city council subsequently appointed A. F. Macallum, City Engineer, and N. Cauchon, to discuss the matter with Mr. Gzowski.

Oshawa Improvements.—A press report states that the Oshawa, Ont., Town Council has asked the C.N.R. to build a subway at Simcoe St., and also to build a new station.

Irondale Subdivision Bridges.—We are officially advised that the Board of Railway Commissioners has approved of the rebuilding of four bridges crossing the Burnt River, Irondale Subdivision, Central Region. Following are particulars of the present bridges which were built about 30 years ago, and of the new ones.

Mile 35.4, timber trestle 30 ft. long, resting on stone filled cribs, to be replaced by a 50 ft. deck plate girder, resting on 2 concrete abutments.

Mile 36.7, timber trestle 70 ft. long, resting on stone filled cribs, to be replaced by a 58 ft. deck plate girder, resting on 2 concrete abutments.

Mile 37.1, timber trestle 65 ft. long, resting on stone filled cribs, to be replaced by one 50 ft. deck plate girder span, with a 13 ft. approach span, resting

on 2 concrete abutments and one concrete pier.

Mile 41.1, timber trestle 90 ft. long; to be replaced by one 60 ft. deck plate girder span, and one 13 ft. beam span resting on 2 concrete abutments and a concrete pier.

Burlington Beach Second Track.—Work is reported to have been started on laying of a second track between Burlington, Ont., and Hamilton.

Hamilton Station, etc.—Following Sir Henry Thornton's recent visit to Hamilton, Ont., the city council appointed a committee to confer with C.N.R. officials as to a new station and other improvements. Sir Henry Thornton advised the Mayor, June 16, that he had appointed C. G. Bowker, General Manager, Central Region, and F. L. C. Bond, Chief Engineer, Central Region to deal with the matter.

London Diamond Relaying.—The no. 10 diamond between Richmond and Talbot Sts., London, Ont., is reported to have been replaced by a larger one, with longer approaches, to accommodate the larger locomotives now being used.

Trowbridge Freight Yard.—A press report states that it is proposed to lay out a freight classification yard at Trowbridge, Mich.

Midland Grain Elevator.—We are officially advised that the construction of an extension to Tiffin no. 2 grain elevator at Midland, Ont., has been authorized. The extension will increase the storage capacity by 2,125,000 bush., and a third marine leg will be added. It is expected to have the extension completed for the close of this season's business.

Sudbury District Bridges.—The Board of Railway Commissioners has authorized the rebuilding of bridges over the Apishkanogana and the Muskego Rivers, in Sudbury district, Ont.

Indian River Bridge.—The Board of Railway Commissioners has authorized the building of a bridge over the north branch of the Indian River, Fraser Tp., Algoma. We are officially advised that the bridge is at mile 98.3, Beechburg Subdivision, and consists of a timber trestle of 14 bays, with a 43 ft. steel girder carried on timber bents in the center. This is to be replaced by a steel and concrete bridge, consisting of three deck plate girder spans, 52 ft. 4 in., 98 ft. 1½ in., and 43 ft., out to out, respectively, resting on 2 concrete piers and 2 concrete abutments. The bridge is designed so that all masonry will be built in the dry, no cofferdam being required. The overall length of the bridge will be 198 ft. 4 in., face to face of backwalls. The concrete piers and abutments are being put in by the railways' own forces, and tenders for the superstructure were received to June 30.

Shekak River Bridge.—The Board of Railway Commissioners has authorized the building of a bridge over the Shekak River, Algoma. We are officially advised that the existing bridge consists of a standard timber trestle of about 22 bays, and is to be replaced by a permanent bridge of one 225 ft. through truss span, with approach girder spans of 36 ft. at one end, and of 40 ft. at the other, resting on 2 concrete piers and 2 abutments. The abutments will be in about 6 ft. of water, and timber cofferdams will be

used in their construction. The superstructure is being removed from an abandoned section of the Grand Trunk Pacific Ry. The over all length of the bridge will be 306 ft. 4 in., face to face of backwall. The entire work is being done by the railways' own forces.

Longlac-Nakina Cutoff.—Senator Dandurand stated in the Senate recently, in answer to questions by Senator Lynch-Staunton, that a contract had been let for clearing, grading, culverts, and bridges on this line, to Foley Bros. & Hervey, the estimated cost being \$775,980. The amount required to cover expenditure to March 31, 1923, was provided by Parliament last year, in vote 112. Since that reply was given, a bill has been introduced to cover the C.N.R. general construction programme, which includes \$1,944,000 for this line. Foley Bros., of Foley Bros. & Hervey, who have the contract for the cutoff, is an old contracting firm which has built thousands of miles of railway in Canada and the United States. O. W. Swensen, its Secretary-Treasurer, who is in charge of the Longlac-Nakina work, had charge of the following construction in Canada for Foley Bros. and their associates: Algoma Central Ry., from Sault Ste. Marie to Josephine Mine, including branch to Helen Mine Jct., Ont.; C.P.R., Bolton Jct. to Sudbury line, from Byng Inlet to Rainford, Ont.; G. T. Pacific Ry. Lake Superior branch, from Fort William to Lake Superior Jct., Ont.; National Transcontinental Ry., from Quebec City to Cochrane; Canadian Northern Ry., from Ruel to Port Arthur, Ont. In addition to these lines, Foley Bros. and their associates did the second track construction from Fort William to Winnipeg; built the G. T. Pacific Ry. to the Pacific coast through the Yellowhead Pass and the C.P.R. Connaught tunnel.

Grant-Nakina Terminal Facilities.—As stated in Canadian Railway and Marine World for February, in connection with the building of the Longlac-Nakina cutoff, the terminal facilities at Grant, Ont., the present divisional point, 254.2 miles west of Cochrane, will be removed 15.9 miles west to Nakina next summer. They consist of passenger station, National Transcontinental Ry. type D 116½ x 30 ft.; storehouse, 48 x 20 ft.; locomotive house, 12 stalls; machine shop and 75 ft. turnable; coaling plant, 200 ton capacity; cinder hoist, single; ice house, 1,000 ton capacity; water tank, 70,000 gall. capacity; trainmen's rest house, 39 ft. x 37½ ft.; 5 double cottages, providing 10 dwellings for employees; 10 miles of yard tracks, with capacity for 700 cars.

Port Arthur-Kakabeka Falls Second Track.—We are officially advised that a second track is being laid from mile 2.74 west of Port Arthur, Ont., to mile 23, Kakabeka Falls. This work was begun in May, 1922, and is expected to be completed by Aug. 31. Between miles 8.2 and 11.2, two main line tracks have been diverged round the new Neebing yards, westbound to the north and eastbound to the south.

Neebing Yard.—The Ontario Legislature has approved of an agreement, dated May 17, 1922, between the Canadian Northern Ry. Co. and the Neebing Township Council, with respect to the installation and permanent establishment in the township of the general receiving, sorting and distributing yard for the

traffic of the whole group of Canadian National Rys. and the necessary locomotive house and equipment therefor, whereby the annual assessment for the same is fixed at \$19,000 for 10 years.

Kashabowie Subdivision Line Revision.—Tenders were received recently for the construction of a line revision between miles 32 and 35.65, Kashabowie Subdivision, Ont. We are officially advised that this revision will provide a second main line, with improved gradients of 0.5%, which will form a part of the double track line which will eventually be built between the point of connection now under construction between the Graham and Kashabowie Subdivisions and Port Arthur. The material involved in the grading consists of rock, loose rock and common excavation—rock predominating. The construction will be C.N.R. main line standard; culverts, reinforced concrete boxes, or reinforced concrete pipes. The work is to be completed by Dec. 31.

Brandon to Regina Track Relaying.—A large gang is reported to be replacing the 60 lb. rails between Kipling, mile 263, and Regina, mile 356, with 80 lb. rails. The track between Brandon and Kipling is reported to have been already relaid.

Glenavon Subdivision Ballast Spur.—Tenders were received recently for the construction of a 4-mile spur to a ballast pit, and for the stripping of the pit at mile 239.4, Glenavon Subdivision, Sask.

Kipling and Avonlea Water Supplies.—Tenders were received recently for the provision of a water storage and a pipe line at Kipling, Sask., mile 207, Glenavon Subdivision, and at Avonlea, Sask., mile 50.9, Avonlea Subdivision. A press report states that these are to be gravity plants, and that the capacity of the reservoirs at these places will be 50,000,000 galls. each.

Regina Water Supply.—A press report states as follows: Plans have been prepared for the provision of a water supply for Regina, Sask., at an estimated cost of \$200,000, that the work will be gone on with this summer. The plans provide for the construction of a reservoir, with a capacity of 400,000,000 gallons, at Condie, on Boggy Creek. The reservoir will be about a mile and a half long, and cover approximately 180 acres. The depth of the water impounded will vary, but will be 10 ft. at the earthwork dam, the construction of which will involve the placing of about 40,000 cu. yd. of material. The spillway will be 10 ft. below the top of the dam. On the south side of the reservoir, opposite its deepest point, a pump house will be built, to pump the water to the steel tanks in the North Regina yards, the pipe line being laid mainly along the railway right of way.

Hudson Bay Ry. Expenditure.—A. Knox, Prince Albert, Sask., drew the House of Commons' attention recently, to a western press dispatch which said that on the 332 miles of line on which rails had been laid, \$30,000,000 had been expended, and added: "It is generally known and acknowledged that the cost of the railway was, roughly speaking, only \$14,000,000, and the cost of the terminals some \$6,000,000."

Brule to the Grande Prairie Country.—A press report states that a topographical survey has been ordered of the country between Brule, Alta., 199 miles west of Edmonton, and the Grande Prairie country, across the Smoky River. The region through which such a line

would pass is said to contain large deposits of hard coal, and the prairie district beyond to be good agricultural land and pretty well settled. The distance between Brule and Grande Prairie is about 150 miles, but allowing for deviations to serve coal mines, and to overcome natural obstacles, etc., a railway would be about 200 miles long, which would make the distance between Edmonton and Grande Prairie about 400 miles. At present Grande Prairie is reached by the Edmonton, Dunvegan & British Columbia Ry. by a branch line from Spirit River, the mileage from Edmonton being 406. The C.N.R. has a line in operation from Peace River Jct. to Whitecourt, 72 miles, which was projected originally to the Grande Prairie country. It is said that the coal areas could not be advantageously reached by either of these lines.

Edmonton Yard Facilities.—A press report states that the C.N.R. has bought 9½ acres adjoining Columbia Ave., between 113th and 119th Sts., Edmonton, Alta., to extend its yard accommodation.

Kamloops Interchange Track.—The interchange track with the C.P.R. at Kamloops, B.C., the construction of which was authorized by the Board of Railway Commissioners, recently, will, we are officially advised, start from the eastern end of the C.N.R. yard and run southeasterly for about 2,500 ft. to a connection with the C.P.R. at 10th Ave.

Bulkley Subdivision Improvements.—Tenders were received recently for a line revision and the construction of a retaining wall at mile 1,573.5 from Winnipeg, also for the construction of a reinforced concrete culvert and the partial filling of a bridge at mile 1,576 from Winnipeg, on the Bulkley Subdivision. These works are both located between Bulkley Canyon and New Hazelton stations, B.C. We are officially advised that the revision is to eliminate a timber bridge 65 ft. high and 500 ft. long, crossing a drain from the Bulkley River. To fill the bridge on the present line would be very costly and there would be danger of slides, as the slopes of the fill would be over 300 ft. long, and reach the Bulkley River. To avoid this it is proposed to revise the alignment, thus throwing the line more closely into the side hill, and to retain the embankment, it is proposed to build a concrete retaining wall 240 ft. long, and of a maximum height of 16 ft. By this means the permanent embankment will be built on a rock bank and rock foundations will be secured for the retaining wall, with an excavation of only a foot or so. The construction proposed is less expensive than either attempting to fill the present line or by the construction of a steel viaduct. The curvature will not be over 6 degrees, and the present gradients will be of rock, secured from immediately opposite the bridge which is to be filled. Traffic can be maintained without difficulty while the work is in progress.

Track Connection at Queensboro.—The Board of Railway Commissioners has approved of a track connection between the C.N.R. and the British Columbia Electric Ry. at Queensboro and Steveston, B.C. We are officially advised that this connection was built several years ago with the approval of the British Columbia Railways Department, and that the present order was obtained for the purpose of having the plans on record with the Board of Railway Commissioners.

Vancouver Station Grounds.—We are officially advised, in regard to the arrangement between the C.N.R. and the

Vancouver City Council, with reference to the paving and other work on the grounds around Vancouver station, that it covers the paving of a driveway in front of the station from Terminal Ave. to the northerly limits of the railway property; the paving of a 50 ft. approach from Main St. to the station driveway near the northerly limits of the railway property, and the paving of a portion of Terminal Ave. from Main St. to the station driveway, together with a sewer system to drain the roadways. The city has also arranged to grade and beautify the areas in front of the station, enclosed by these roads and Main St., converting the present unsightly fill into a park with walks, grass and shrubs.

Sunday Trains in Manitoba.

For some years past there has been considerable agitation in Manitoba in favor of running trains on Sundays, to the Winnipeg Lake beaches, and other summer resorts. The general situation in Canada as to Sunday labor is governed by the Dominion Statutes, R.S.C., 1906, chap. 153, sec. 9, which provides that: "It shall not be lawful for any person on the Lord's Day, except as provided by any provincial act or law now or hereafter in force, to run, conduct or convey by any mode of conveyance, any excursion on which passengers are conveyed for hire, and having for its principal or any object the carriage on that day of such passengers for amusement or pleasure, and passengers so conveyed shall not be deemed to be travellers within the meaning of the act."

The operation of excursion trains on Sundays was not permitted among the exceptions contained in the Manitoba Lord's Day Act, Revised Statutes of Manitoba, chap. 119, sec. 2. In 1922 it was proposed to amend the section by adding a provision that "it shall be lawful for any person on the Lord's Day to run, conduct, or convey, by any mode of conveyance, any excursion on which passengers are conveyed for hire to summer resorts, beaches or camping grounds, within the province." After meeting with considerable opposition, the bill was abandoned, following the Government's defeat for other reasons. It was reintroduced at the recent session, but contained a provision permitting the advertising of proposed excursions. The Lord's Day Alliance promoted opposition to the bill, but it was passed, the clause as to advertising being struck out; the Government undertaking to submit a test case as to the validity of the Lord's Day Act. The case was argued before the Court of Appeal at Winnipeg, a series of questions having been drafted by the Attorney General for consideration. On May 23 Chief Justice Perdue and Justices Fullerton, Dennistown and Trueman, each submitted written judgments, giving reasons for their answers to the questions. These declared that it was perfectly lawful for any person or corporation to carry passengers for hire to summer resorts, etc., under the amendment to the Lord's Day Act, presuming it was brought into effect by proclamation of the Lieutenant Governor. Following the delivery of judgment, the Lieutenant Governor proclaimed the act to be in effect, and the first Sunday trains were run to the beaches on June 10. The Court of Appeal, on June 12, granted the Lord's Day Alliance leave to appeal direct to the Imperial Privy Council.

Redistribution of Western Region, Canadian National Rys.

General Manager Warren, of the Western Region, at Winnipeg, has announced its division at Jasper, Alta., 1,030.2 miles west of Winnipeg, and 234.1 west of Edmonton, Alta. The lines east of Jasper are placed under H. H. Brewer, Assistant General Manager, Winnipeg, whose territory extended formerly west to Union Jct., 793.6 miles west of Winnipeg, and 6.3 miles west of Edmonton. The lines west of Jasper to the Pacific coast, including Vancouver Island, are placed under J. R. Cameron, Assistant General Manager at Vancouver, the eastern boundary of whose former territory was Union Jct.

The lines east of Jasper are divided into Manitoba District, under A. Willcox, General Superintendent, Winnipeg; Saskatchewan District, under B. T. Chappell, General Superintendent, Saskatoon; and Alberta District, under W. A. Brown, General Superintendent, Edmonton. The lines west of Jasper, under J. R. Cameron, Assistant General Manager, Vancouver, are all comprised in the British Columbia District.

The distribution of the districts, with their superintendents and headquarters, is as follows:—

Manitoba District.—Lakehead Division, R. S. Richardson, Fort William, Ont., heretofore Superintendent, old Fort William Division there.

Port Arthur Division.—W. T. Moodie, Port Arthur, Ont., heretofore Superintendent, old Rainy River Division there.

Duluth, Winnipeg & Pacific Ry.—J. H. McKinnon, Virginia, Minn. No change.

Winnipeg Terminal Division.—M. B. Murphy, Winnipeg. Slight change in territory.

Portage Division.—W. I. Munro, Fort Rouge, Winnipeg, heretofore Superintendent, old Portage Division.

Brandon Division.—G. A. Cunliffe, Brandon, Man., heretofore Superintendent, old Brandon Division, Saskatchewan District.

Dauphin Division.—T. J. Brown, Dauphin, Man., heretofore Superintendent, old Dauphin Division, Saskatchewan District.

Saskatchewan District: Melville Division.—D. W. Steeper, Melville, heretofore Superintendent, old Edson Division, British Columbia District.

Regina Division.—I. A. Macpherson, Regina, heretofore Superintendent, old Melville Division, Manitoba District.

Saskatoon District.—J. P. Johnson, Saskatoon, heretofore Superintendent, old Prince Albert Division, Saskatchewan District.

Prince Albert Division.—J. Irwin, Prince Albert, heretofore Superintendent, old Biggar Division, Alberta District.

Alberta District: Edmonton Division.—J. E. Nelson, Edmonton, heretofore Superintendent, old Edmonton Division.

Calgary Division.—R. King, Calgary, heretofore Superintendent, old Calgary Division.

Edson Division.—A. E. Macdonald, heretofore Superintendent, old Saskatoon Division, Saskatchewan District.

British Columbia District: Kamloops Division.—L. F. Muncey, Kamloops Jct., heretofore Superintendent, old Kamloops Division.

Smithers Division.—N. B. Walton, Assistant General Superintendent in

charge, Prince Rupert, B.C., heretofore Assistant General Superintendent, old Edson and Smithers Divisions. He also has jurisdiction over Edson Division, of which A. E. Macdonald is Superintendent.

Vancouver Island Division.—W. S. R. Cameron, General Agent, Victoria. No change.

Marine Division.—J. Y. Rochester, Vancouver, formerly Superintendent, Barge & Ferry Service there.

Among the Express Companies.

A Board of Railway Commissioners' order, fixing express rates on fish, in car loads, from Northern Alberta to Chicago, is given in full on another page, under "Traffic Orders by Board of Railway Commissioners."

The Canadian National Rys. Express Department has opened offices at St. Judes, Varennes, Gentilly, Becquets, Que., Leaside, Ont., Victoria Beach and Grand Beach, Man., and closed offices at Windsor Jct., N.S., Smoky Falls, Ont., and Merid, Sask.

Forrester Wiggins Branscombe, heretofore Superintendent, Dominion Ex. Co., Montreal, has been appointed General Superintendent, lines east of Port Arthur, Ont., Dominion Ex. Co. at Montreal. He was born at St. John, N.B., Nov. 16, 1866, and entered the company's service, Oct. 26, 1889, since when he has been, to Nov. 21, 1892, night transfer man, Smiths Falls, Ont.; Nov. 1892 to Dec. 1899, in messenger service; Dec. 1899, to April 1905, tonnage clerk, Audit Department, Toronto; April 1905 to April, 1907, agent, Kingston, Ont.; April, 1907 to Nov. 1912, route agent, St. John, N.B.; Dec. 1912 to June 1917, Assistant Superintendent, St. John, N.B.; July 1917 to May 1923, Superintendent, Montreal.

Ernest D. Riley, heretofore special representative to Vice President and General Manager, Dominion Ex. Co., Toronto, has been appointed Superintendent, Atlantic Division, Dominion Ex. Co., at Montreal, with supervision over the territory to the Atlantic seaboard, covered by the C.P.R., Dominion Atlantic Ry., and Quebec Central Ry. He was born at Harrogate, Eng., Jan. 7, 1884, and entered express service in 1905, since when he has been, to 1906, stenographer, United States Ex. Co., Chicago, Ill.; 1906 to 1908, secretary to Inspector, same company, Chicago; 1908 to 1910, secretary to General Superintendent, same company, Chicago; 1910 to 1912, secretary to General Superintendent, Western Ex. Co., Chicago; 1912 to 1918, chief clerk to General Superintendent, same company, Chicago; Oct. 1, 1918, to June 1 1923, special representative, Dominion Ex. Co., Toronto.

Telegraph and Cable Matters.

The Commercial Cable Co.'s cable ship Restorer has completed some cable repair work at Bamfield, B.C., and has laid about 15 miles of new cable, replacing a similar length of old cable, for the Pacific Cable Board.

The Pacific Cable Board's cable ship Colonia, was reported to have sailed from London, Eng., during June, with the cable to be laid between Fanning Island and Bamfield, Vancouver Island, in connection with the duplication of the board's Pacific cable, which it is the intention to complete this year. The laying of this portion of the cable is expected to

commence during July, and the ship is expected to arrive at Bamfield, to complete the laying, about the end of August.

C. H. Mackay, President, Postal Telegraph-Commercial Cable System, is reported to have stated that an agreement has been entered into with the C.P.R., whereby the two companies will, for 10 years, exchange telegraph and cable traffic, the C.P.R. handing over to the cable company the traffic collected in Canada for all parts of the world, and the cable company handing over to the C.P.R. all traffic destined for Canadian points.

The Postal Telegraph - Commercial Cable Co. has arranged to lay an additional trans-Atlantic cable between New York and London, this year. It is stated that the cable will carry 600 words a minute in each direction at the same time, making it the fastest cable in service. The route will be from New York to Nova Scotia, about 1,000 miles, thence to the Azores, about 1,750 miles, where it will connect with a cable already laid to Ireland. From Ireland a new cable, 350 miles long, will be laid to London. The approximate cost is stated as \$10,000,000, and about 3,000,000 lb. of copper will be used in the conductor.

In the past, interruptions to telegraph service, caused by damage to outside wires, could only, in the majority of cases, be rectified by daylight, when the damaged section could be located readily, a disadvantage which delayed the recovery of interrupted services. Where the trouble may have been anywhere along the line, between points some 20 to 100 miles apart, it was not possible to take care of the interruption, especially at night. To overcome the disadvantage due to night interruptions to its wires, the Canadian Pacific Telegraphs provided a special electric light, and all the linemen on the system were equipped with it, enabling them to successfully take care of interruptions and do their work at night as well as by day. The special light is of simple construction, the power is derived from the dynamo turbine with which all C.P.R. locomotives are equipped, and which provides electricity for the illumination of the headlights and cab lights. A headlight globe is used, and an especially designed reflector throws a beam sufficiently strong to allow working operations at a distance of 600 ft. A conducting wire, attached to a socket in the cab of the locomotive, is of sufficient strength to enable the operator to work any place within two car lengths of the locomotive. There is also a semi-permanent stand, to which the lamp can be attached for the convenience of men working at night on bridges, or anywhere that requires a steady flow of light. The lamp can also, by interchange of globes, be used where there is a domestic current, but not with such good effects. As there is so much that can affect a telegraph system, such as fire, aurora, lightning, snow, wind and rain, the advantage of being able to locate the source of trouble cannot be over-estimated, and time and time again, when the lines have been seriously damaged during the night, it has been found that the electric hand lamp has been of a great benefit. During the past winter, when the service experienced a considerable number of interruptions, the lamp was often used during snow and sleet storms, and not one instance is known of it having failed to meet all services put upon it. The perfection of this lamp has been a decided progressive step in telegraph maintenance at night.

Electric Railway Department

Canadian Electric Railway Association's Annual Meeting at Toronto.

As this issue of Canadian Railway and Marine World goes to press, the Canadian Electric Railway Association's annual meeting, fixed to be held in Toronto from June 27 to 30, is in progress, all the indications at the time of writing (June 26) being, that it will be most successful in every way. The general arrangements have been directed by the President, Major F. D. Burpee, assisted by the Secretary, D. N. Gill; D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., has arranged for the papers to be read; and local committees at Toronto have dealt very thoroughly with the programme for the business meetings; the arrangements for display of exhibits, and the entertainment of the members and guests. Toronto City Council has given the use of the Music Building and the Press Building on the Canadian National Exhibition Grounds. The members' meetings take place in the amphitheatre in the Music Building, and the exhibits are displayed in the main portion of the building. The Press Building is devoted to the use of ladies attending the meeting. The Toronto Transportation Commission is operating buses between its nearest electric railway terminal, terminating outside the Exhibition Grounds, and the Music and Press Buildings, and also between those buildings and the Sunnyside Pavilion, on the lake front, where the luncheons are being held.

The general programme is as follows:
 June 27, Wednesday. 10 a.m.—Registration at Music Building. 11 a.m.—Association meeting in Amphitheatre, presentation of Secretary's and Treasurer's reports. 1 p.m.—Luncheon at Sunnyside Pavilion. Address by President. 2.30 p.m.—Inspection of exhibits in Music Building. 4.30 p.m.—All types of Toronto Transportation Commission rolling stock on view at loop east of exhibition grounds.

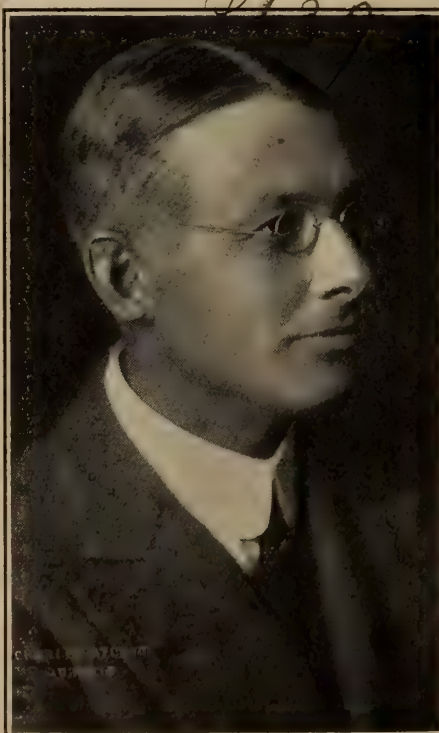
June 28, Thursday. 9.30 a.m.—Association meeting in Amphitheatre. Reports from committee on public relations and standards. Paper: "The operation of a scientific survey of traffic movements on urban railways," by Alex. Jackson, Superintendent of Timetables, Public Service Railway Co., Newark, N.J. Discussion on timely topics. 1 p.m.—Luncheon at Sunnyside Pavilion. Address by Mayor of Toronto. 2.15 p.m.—For ladies: Trip around harbor and tea at Royal Canadian Yacht Club. 2.30 p.m.—Inspection of exhibits in Music Building. 7.30 p.m.—Annual dinner, King Edward Hotel. (Informal).

June 29, Friday. 9.30 a.m.—Association meeting in Amphitheatre. Report of committee on valuation, maintenance and depreciation of street railway assets, by H. E. Weyman, Manager, Levis County Railway Co. Paper: Deciding on the proper motor for a given cycle of duty, by W. G. Gordon, Railway and Traction Engineer, Canadian General Electric Co. 1 p.m.—Luncheon at Sunnyside Pavilion. 2.30 p.m.—Inspection of exhibits in Music Building. 2.30 p.m.—For ladies; motor trip, with tea at Old Mill on Humber River. 5 p.m.—Baseball game; associates vs. members. Harry Jones, captain for associates; W. R.

Robertson, captain for members. 9 p.m.—Dance at King Edward Hotel with supper.



Major F. D. Burpee,
 Manager, Ottawa Electric Ry.; President, Canadian Electric Railway Association, 1922-1923.



H. H. Couzens,
 General Manager, Toronto Transportation Commission, and Vice President, Canadian Electric Railway Association, 1922-1923.

June 30, Saturday. 9.30 a.m.—Association meeting in Amphitheatre. Dis-

cussion on timely topics. Election of officers.

The following is the dinner toast list:—The King, proposed by the President. Canada, proposed by Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., responded to by P. W. Ellis, Chairman, Toronto Transportation Commission; Our Industry, proposed by G. Gordon Gale, Vice President and General Manager, Hull Electric Co., responded to by Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.; Our Guests, proposed by F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario, responded to by a representative of the American Electric Railway Association; The Ladies, proposed by Hugh Millar, Managing Director, Lyman Tube & Supply Co., responded to by Don M. Campbell, Preston, Ont.; The Technical Press, proposed by E. P. Coleman, General Manager, Dominion Power & Transmission Co., responded to by Acton Burrows, Proprietor, Canadian Railway and Marine World.

The very complete arrangements made for the entertainment of the members and ladies accompanying them are in charge of the following committee:—W. R. McRae, Superintendent of Rolling Stock and Shops, Toronto Transportation Commission, chairman; I. S. Fairty, K.C., Solicitor, Toronto Transportation Commission; E. W. Oliver, General Superintendent, Electric Railways, Central Region, Canadian National Rys.; F. S. Livingstone, Traffic Manager, Hydro Electric Rys., Toronto and York District; F. J. Neale, Vice President, Dominion Wheel & Foundries, Ltd.; H. A. Moore, Toronto District Manager, English Electric Co. of Canada; W. R. Carr, Editor, Electrical News; and Aubrey A. Burrows, Business Manager, Canadian Railway and Marine World.

Discussion of Timely Topics.

In response to an invitation from the Secretary, officials of member companies submitted the following questions for discussion:—

What is the experience of members who have tried automatic heater control?

Does the Peter Witt type of car increase or reduce the abuse of transfers?

Has actual experience proved the claims that have been made for the Peter Witt cars as regards increase of schedule speed?

What steps have been taken by city authorities to restrict vehicular traffic at congested loading points during rush hours?

Has the re-dipping of old armatures in dipping varnish been tried and what is thought of it?

To attain the highest degree of efficiency, having in mind rapid transit and safety, what is the highest schedule speed at which urban street cars can be operated?

What steps are taken to overcome cars loafing, when traffic is light, in order to keep in their proper place in the service?

What can be done regarding "pirate trucks" competing for freight traffic? Such carriers pay no business taxes, township taxes; run as they please; charge what they like; take only what freight suits them; and use the roads

which the railways help to pay for.

Which type of trolley wire is in more general use—round, groove or figure 8, and from which type have best results been obtained?

What has been the experience with phono-electric, steel clad, steel and cadmium copper trolley wire?

Will the trolley shoe replace the trolley wheel and what is thought of the use of bow collectors?

What size and type of trolley contact is in general use for urban and interurban cars?

In repairing end housings on 101 B motors is the practice to build up end housing with welding apparatus, turn down worn housing and shrink on band or to scrap all worn housings?

Should free transportation be provided employees, if so, why and how much?

Should trolley wire and trolley spans be slack or tight?

Is it advisable to use special cars for rail sanding?

What is the best type of welded track joint?

are exhibiting, and the names of their representatives in attendance. Where full data is not given, it is owing to the fact that it was not supplied to us up to the time of closing for the press:—

30. Allen General Supplies, Ltd., Toronto. Gears and pinions. A. W. Roberts, President. Allen General Supplies; C. E. Sawtelle, General Manager, Tool, Steel Gear & Pinion Co.

8. Canadian Car & Foundry Co., Montreal. Trucks and other electric railway car accessories. D. R. Arnold, Sales Manager, E. R. Viberg, Mechanical Engineer.

1. Canadian Cleveland Fare Box Co., Preston, Ont. Change carriers; fare boxes; fenders; lifeguards; light metal handles; power saving recorders; trolley catchers and retrievers; universal lubrication. M. C. McElligott, President & General Manager; L. L. McElligott, Vice President and Secretary Treasurer; W. Shaw, Vice President, Cleveland Fare Box Co., Cleveland, Ohio.

28 & 29. Canadian General Electric Co., Toronto.

C. E. A. Carr, E. J. Smith.

11. Cheatham Electric Switching Device Co., Louisville, Kentucky.

32. Differential Steel Car Co., Findlay, Ohio.

4 & 5. Dominion Insulator & Manufacturing Co., Niagara Falls, Ont. Car equipment, catenary materials, couplers, headlights, line materials, porcelain insulators, rail bonds, retrievers and bases, trolley catchers. E. F. Wickwire, Secretary; E. W. Loughridge, J. R. Palmer, D. MacLaughlin, C. H. Burkhalter, P. A. Hinds.

22. Dominion Wheel and Foundries, Ltd., Toronto. Chilled iron wheels. F. J. Neale, Vice President; C. H. Ley, E. E. Ritcey.

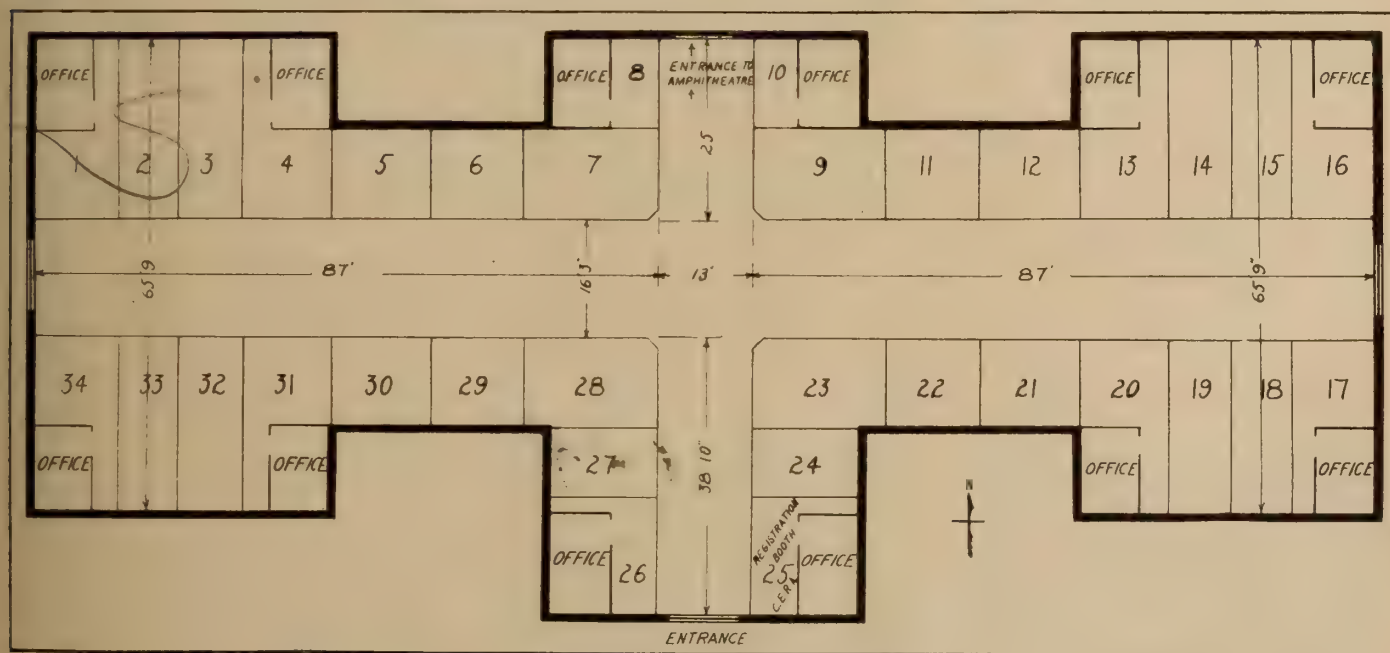
26. Electrical News, Toronto. W. R. Carr, Managing Editor.

27. Electric Railway Journal, New York. H. H. Norris, Engineering Editor.

26. Electric Traction, Chicago. C. E. Van Auken, Associate Editor.

31. English Electric Co. of Canada, Toronto.

1. Ferranti Meter & Transformer



Exhibits Spaces at Canadian Electric Railway Association's Annual Meeting at Toronto.

Exhibits by Manufacturers, Etc.

The exhibits of electric railway supplies shown in connection with the meeting are even more numerous than were those at the meeting at Quebec last year. Very complete arrangements in regard to them were made by the following committee:—C. L. Wilson, Assistant Manager Hydro Electric Ry., Toronto & York District, Chairman; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; H. H. Couzens, General Manager, Toronto Transportation Commission; D. W. Harvey, Assistant Manager, Toronto Transportation Commission; W. J. Radford, Assistant Manager, Toronto Suburban Ry.; D. M. Campbell, Preston, Ont.; W. G. Gordon, Traction Engineer, Canadian General Electric Co.; H. T. Gibbs, Sales Engineer, Canadian Westinghouse Co., and O. C. Rehfus, Mechanical Engineer, Canadian Steel Foundries.

The accompanying plan shows the space in the Music Building, on the Canadian National Exhibition grounds, devoted to the exhibits display. Following are the numbers of the spaces occupied:—the names of the exhibitors, arranged alphabetically, the principal things they

3. Canadian National Carbon Co., Toronto.

24. Canadian Railway and Marine World, Toronto, the Canadian Electric Railway Association's official organ. Acton Burrows, Proprietor; A. A. Burrows, Business Manager; E. Winfield, Assistant Editor.

7. Canadian Steel Foundries, Ltd., Montreal. Electric railway track work. W. E. Horwood, Sales Manager.

9 & 10. Canadian Westinghouse Co., Hamilton, Ont. Working models of electrical and air brake equipment, with safety features used on standard safety car, also of supervisory control for automatic substations; load air brake equipment for electric railway service; 533-T-4 motor with all individual parts; mill type Mazda lamp. G. F. Foot, Hamilton Sales Department; H. T. Gibbs, Sales Engineer, Toronto.

6. Don M. Campbell, Ltd., Preston, Ont.:—Armature and field coils; overhead material; treated poles; Don M. Campbell, President; Noel S. Campbell, Secretary.

17. C. E. A. Carr Co., Toronto. Peter Smith forced ventilator hot air heater.

Manufacturing Co., Toronto. Disconnecting switches, meters, outdoor metering equipment, outdoor switching equipment, railway resistance grids and transformers. Lt. Col. G. C. Royce, President; A. B. Cooper, General Manager; A. Schofield.

2. Walter M. Graham, Toronto.

12 & 13. Lyman Tube & Supply Co., Montreal, Que. Anti-climbers; automatic compensating lighting fixtures; ball and roller bearings; brakes; car lighting fixtures; car signs; carbon brushes; commutator truing stones and slotting files; gears and pinions; gear cases; hand strap covers; headlights; lamp guards; lightning arresters; mechanical ties; oil-less bushings; roller and block chain; sand traps, valves and handles; signal systems; track brooms and scrapers; trolley bases; trolley catchers; trolley cord; trolley harps; trolley wheels; vacuum oilers. Hugh Millar, Managing Director; H. M. Fierro, Engineer, Montreal. H. A. Jones, Toronto Manager; O. H. Willison, Bearings Engineer, Toronto. Concerns for which Lyman Tube & Supply Co. are agents and distributors are also represented as follows:—Electric

Service Supplies Co., Philadelphia, H. G. Lewis, Vice President & Sales Manager. National Brake Co., Buffalo, F. D. Miller, Manager; W. D. Brewster, Treasurer. R. D. Nuttall Co., Pittsburgh, Milton Rupert, Vice President & General Manager; W. R. Phillips, Chief Engineer. Dayton Mechanical Tie Co., Dayton, Ohio, R. J. Wells, Vice President and Secretary-Treasurer. Electric Railway Improvement Co., New York, N.Y., H. R. Ransom. Samson Cordage Works, Boston, F. J. Coakley, Secretary. O. M. Edwards Co., Syracuse, N.Y., Harold Edwards, Vice President & General Manager, E. F. Chaffee, Vice President & Sales Manager. Hunter Illuminated Car Sign Co., Flushing, Fenley Hunter, Vice President and General Manager.

18. Metal and Thermit Corporation, New York, N.Y. Apparatus and material for Thermit rail welding; including self luting mold box, and lightweight double burner preheater; samples of tested Thermit rail welds, including specimens subjected to rail bending and drop tests, also section of Thermit welded rail removed from Pittsburgh Street Ry. track after 10 years service; samples of frogs constructed by means of Thermit welding. W. R. Hulbert; J. H. Deppeler; J. G. McCarty; C. F. Lederer.

16. Ontario Safety League, Toronto. Automobile wrecked by coming in contact with electric suburban car; photographs of other wrecks; automobile fender for pedestrians' protection; bulletins dealing with accident prevention; drawings by school children, depicting accident and fire prevention; map of Toronto, showing location of traffic accidents; safety devices. Gramophone talks will be given on safety subjects. Lyn Hudson.

20. Ottawa Car Manufacturing Co., Ottawa, Ont.—bushings; car trimmings; handbrakes; pressed steel fittings; slat and upholstered seats; trolley wheels. W. H. McIntyre, General Manager; F. S. Beattie, Superintendent Car Department.

21. Railway & Power Engineering Corporation, Toronto.—Armature coils; automatic window cleaners; commutators; couplers; door and step mechanisms; electric heaters; forged trolley ears; gear cases; sanders; signal and trolley cords, tail lights; ventilators. F. J. Neale, Vice President; W. E. Foreman, Sales Manager; A. L. Lye, Secretary; A. F. McLachlin, Montreal representative. Concerns for which Railway & Power Engineering Corporation are agents and distributors are represented as follows:—National Pneumatic Co., A. F. Paul; Nichols Lintern Co., W. Lintern, Chillingworth Mfg. Co., Mr. Wanamaker; Van Dorn Coupler Co., Mr. King; Electric Materials Co., Mr. Donahue.

15. Sarnia Bridge Co., Sarnia, Ont. International twin tie; steel curbing angles. R. M. Norton, President; H. B. Fenton, Vice President.

14. Southam Press, Ltd., Montreal, Canadian National and Canadian Pacific Rys. booklets, posters and other transportation literature; general display advertising, showcards, cut-outs, and catalogues. W. W. Southam, J. R. Bowles.

23. United States Steel Products, New York. Electrical wires; rail bonds; rails; special track work; steel axles, ties and wheels. W. B. Gresham, Manager, Lorain Department; J. H. McAlarney, Manager, Specialties Department; W. H. Lipscomb, Manager, Electrical & Wire Rope Department, New York; A. W. Allyn, Manager, Montreal Office; F. C. Brunke,

Manager, Toronto Office; C. H. Brunke, Assistant Manager, Toronto Office.

19. Witherow Steel Co., Pittsburgh, Pa. Rolled tie rods. W. C. Emory, Sales Department.

33. Chas. S. Wright Co., Toronto. Buzzer equipment; caps for conductors and motormen; car curtains, seats, signs and ventilators; electric heaters; line material; office furniture; one-man car and lifeguard; push-buttons; thermostatic control. C. S. Wright, T. H. McCauley; A. F. Old, Eastern Sales Manager, Hale & Kilburn Corporation; W. S. Hammond, Vice President, Consolidated Car Heating Co.

Montreal Power & Tramways Co's Control, Finances, Etc.

Patrick Dubee, Secretary-Treasurer, in Canada, Montreal Tramways and Power Co. has issued the following circular to shareholders:—"The directors of the company, having received a requisition from certain shareholders to convene an extraordinary general meeting of the company, I am directed to give you notice that an extraordinary general meeting of the above named company will be held at the principal offices of the company in Montreal at 78 Craig Street West on July 3, at 11 a.m., for the purpose of considering the following objects set forth by the requisitionists, viz.: (1) To receive and consider the profit and loss account, the balance sheet and the report of the directors, copies whereof are enclosed herewith. (2) Election of directors, no general meeting for such elections having been called or held within the last twelve months. (3) Appointment of a committee of shareholders to inquire into the affairs of the company since the last general meeting. (4) Appointment of inspectors. The stock transfer books (or stock transfer record and registrar of members) will be closed from June 23 to July 3, both days inclusive.

"In connection with the extraordinary general meeting of the company, the directors are advised that it will not be competent for the meeting to proceed with the election of directors, no time or place having been prescribed by the company in general meeting for the holding of the ordinary general meeting. The ordinary general meeting will be held under the articles in December next, at such time and place as may be determined by the directors, and at such meeting the election of directors will take place. If the shareholders desire that there should be an election of directors before December next your directors are advised that the proper course to adopt will be for the meeting of which notice has been given to prescribe such earlier date as it may deem wise."

The notice was accompanied by financial statements from which the following are extracts:—

Assets.	
*Securities of other companies	\$17,089,800
Can. Light & Power Co. bonds	1,397,045
Montreal Tramways Co. deb.	6,168,851
Montreal Dev. & Land Co. st'k	500,000
Montreal Trams. Co's com. st'k	964,625
Accounts receivable	928,581
Cash	75,581
Profit and loss to Nov. 30, 1921	1,872,912
Less rev. over exp. Nov. 30, 1922	98,274

Total..... 28,799,071

*Canadian L. and P. Co. stock, 59,903 shares;	
Montreal Tramways Co. com., 11,029 shares; Montreal Public Service Corporation, 1,250 shares; Montreal Hydro Electric Co., 42,500 shares.	

Liabilities	
Capital stock—	
Authorized	\$20,002,000

Issued and fully paid up	17,577,830
Allotted (100 shrs. 5% paid up)	500

Total \$17,578,330

Notes, 5-year 6½% secured gold notes \$ 7,300,000	
Five-year 6% gold bonds	2,500,000
These bonds were issued and pledged as additional security against issue of \$7,300,000 five-year 6½% secured gold bonds.	
Montreal Public Service Corp loan account	\$ 2,592,500
Accounts payable	1,276,199
Accrued interest	52,042

Total \$28,799,071

The financial report was signed on behalf of the board by E. A. Robert and J. M. Wilson. The report states that W. C. Finley has succeeded J. W. McConnell as Vice President. Other directors are Senators G. G. Foster, J. M. Wilson, L. C. Webster and N. Curry, also J. M. McIntyre.

The Montreal Tramways & Power Co., was incorporated Dec. 1910, in London, Eng., under the Companies (Consolidation) Act, 1908, and is licensed by the Quebec Government and registered at the Montreal Court House. It is a holding company, controls the Montreal Tramways Co., Canadian Light & Power Co., Montreal Public Service Corporation, Montreal Hydro Electric Co., and owns, direct or through Canadian Light & Power Co., all the St. Paul Electric Co's stock.

Operation of Double-Truck One-Man Cars in Toronto.

Canadian Railway and Marine World has given, in previous issues, descriptions of the 50 motor cars ordered by the Toronto Transportation Commission from Canadian Car & Foundry Co., and the 50 from Ottawa Car Mfg. Co., which were illustrated in our Sept. 1922 number. It was explained that these cars, of the double truck type for two-man operation, are readily convertible for one-man operation. They are about 4 ft. shorter than the motor cars ordered previously by the Commission, but much larger than any cars operated heretofore by one man in Toronto.

The Commission, represented by D. W. Harvey, Assistant Manager, and I. S. Fairty, Solicitor, appeared before the Ontario Railway and Municipal Board, on June 20, asking permission to operate the new cars over specified routes, with one man at all times on some routes, and with one man at certain times and two men at other times, principally rush hours, on other routes. They claimed that large economies would result from the operation planned.

City Controller Gibbons, business agent of the street railway employees' union, opposed the application, arguing that the cars are too large to be safely operated by one man, and that the introduction of one-man operation would reduce some employees in rank and earning capacity, and deprive others of their positions.

The Board reserved its decision, and directed that tests of the proposed operation be made, and that a report on it be presented. The Chairman intimated that if satisfactory conclusions could not be drawn from tests made in Toronto, it would send an electric railway expert to cities where one-man operation is carried on with similar cars, to study the matter.

The London, Ont. St. Ry. has started using a new form of transfer, to prevent transfers being used as stop over tickets.

Toronto Transportation Commission's Eglinton Car House.

The car house built recently by the Toronto Transportation Commission at the corner of Yonge St. and Eglinton Ave. was described in Canadian Railway and Marine World for Nov. 1922, and drawings were given showing the car house plan and layout of the tracks for car storage and operation. The illustrations given herewith show, in fig. 1, the

tion promote more than ordinary facility in car inspection.

The inspection bays have a capacity of 30 cars, and the repair bay 4, while the yard tracks will hold 137 cars and the trailer storage tracks 36. Detailed information regarding the house dimensions, the layout and materials of construction of the house and the office



Fig. 1, Toronto Transportation Commission's Eglinton Avenue Car House, north side view.

exterior of the north side of the house, and in fig. 2, an interior view of one of the two inspection bays, showing the pit arrangement. The 2 doors at the left in fig. 1 lead into the repair bay, which extends back about two-thirds of the house length, the remainder of the section being occupied by the boiler room. The central group of 3 doors, and the group of 3 doors to the left, lead into the inspection bays, each of which is equipped with 3 pit tracks. The entrance doors are of the roller folding type, of horizontal metal slat construction, being rolled up at the top to open, window blind fashion, by a motor controlled by a switch. As shown in fig. 2, the pits are continuous across the bay, i.e., all 3 pits are in one, the house floor between the inspection tracks being supported on horizontal steel channels, supported on vertical channels. The house and pit floors are of concrete. The pit is adequately drained, so that when a car is washed while standing on a pit track, the pit is dry again in a very short time. A complete installation for car washing is provided on each pit track; vertical and horizontal pipes, with rows of holes drilled therein, being arranged to shower from all angles the car to be washed. Some of the pit tracks are equipped with wheel grinding machines, arranged to take flat spots out of car wheels without the necessity of removing the latter from the trucks, the grinding wheels being adjustable horizontally and vertically, and driven by motor in a direction opposite to that in which the pair of wheels to be ground are driven by one of the car motors. An idea of the adequacy of natural lighting in the inspection bays may be gained from fig. 2. The removable section of rail, backed by the wooden slatted sections fitting into the house floor, as indicated by the arrow in fig. 2, are worthy of note. Removal of the short rail section and slatted sec-

building at the southeast corner, and the methods of operating the yard and trailer storage tracks, were given in our Nov. 1922 number. Since the house was placed in service, the facility of operation has more than met expectations,



Fig. 2, Toronto Transportation Commission's Eglinton Avenue Car House, showing inspection bay.

and justified the intensive study which was applied to the layout, the modern features introduced being the means of effecting large and important operating economies.

The London Railway Commission, operating the London & Port Stanley Ry. for the London City Council, handed into the mayor's office, on June 5, a list of all officials and salaries paid to them during 1922. In a covering letter the Commission stated that the publication of the list of employes, with their pay, in the city year book, as proposed, would not be in the railway's best interests.

The Toronto-Port Credit-Oakville-Hamilton Hydro Electric Ry.

The result of the conference of representatives of municipalities between Toronto and Oakville, which met at Oakville, Ont., April 16, and passed resolutions favorable to the construction of an electric railway to be operated by the Hydro Electric Power Commission of Ontario, under the act of 1922, has been the passing by the Ontario Government of two orders in council, dated June 9. The first authorizes the construction of a line from Toronto to Port Credit, and the second authorizes the construction of a line from Port Credit to Oakville, at an estimated cost of \$1,065,667. The second order was made on a report by the Premier, dated May 23, which recommended that the agreements between the Hydro Electric Power Commission of Ontario and the municipalities of Toronto Tp., Trafalgar Tp., and the town of Oakville, which authorized the construction of an electric railway within their limits as part of a line from Port Credit to St. Catharines, be approved and the line from Port Credit to Oakville be authorized to be built under the provisions of the 1922 statutes, chap. 57, subject to a new apportionment of cost. The H. E. P. C. of Ontario is authorized to proceed with the construction of the line and for that purpose is authorized to dispose of its bonds, heretofore authorized, for \$1,065,667.

It is reported that the present Toronto-Port Credit line, the old Toronto & York Radial Mimico Division, will not be used in connection with the present project, but that a line will be built on private right of way.

The Hamilton Radial Ry., owned by the Dominion Power & Transmission Co., extends from Oakville to Hamilton, and in a general way the municipal repre-

sentatives at the meeting of April 16 discussed making the projected new line from Toronto connect with it, so as to give a through line to Hamilton.

St. Thomas, Ont., Municipal Ry. is reported to have rearranged its car service—one car operating along Ross and Talbot Sts., and three on the belt route to the park, giving a 20-minute service.

The Toronto Transportation Commission has received an additional 10 motor cars from Ottawa Car Manufacturing Co., making a total of 16, out of an order for 50, and also 35 trailer cars from Canadian Car & Foundry Co.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:—

	Apr. 1923	Apr. 1922	10 mons. to Apr. 30, 1923	10 mons. to Apr. 30, 1922
Gross	\$852,992	\$818,177	\$8,683,208	\$8,589,842
Expenses	608,781	591,085	6,079,467	6,203,010
Net	244,211	227,092	2,603,741	2,386,832

Calgary Municipal Ry.—A press report states that the operating deficit for May was \$4,459.94, against \$7,130.52 for May 1922. While there was an increase in the number of passengers carried, of 11,635, there was a decrease of \$96.28 a day in the revenue. Operating expenses for May were \$70,842.92, against \$80,602.40 for May 1922.

Cape Breton Electric Co. —

	Mar. 1923	Mar. 1922	3 mons. to Mar. 31, 1923	3 mons. to Mar. 31, 1922
Gross	\$53,465	\$46,940	\$169,551	\$143,364
Expenses	53,691	49,884	164,770	164,776
Net	*226	*2,944	4,781	*21,412
Fixed charges	5,619	5,527	17,075	16,884
Deficit	5,845	8,471	12,294	38,296

*Deficit.

Quebec Public Service Corporation.—A press report states that at a meeting of shareholders held in Quebec, Que., June 13, bylaws changing the name to that of the Quebec Power Co., and increasing the capital from \$3,000,000 to \$10,000,000, were approved. The increase of capital is stated to have been made necessary in consequence of the taking over of the Quebec Ry., Light, Heat & Power Co., and the change in name is stated to have been considered advisable in order to prevent confusion with the Quebec Public Service Commission.

St. Thomas Municipal Ry.—A press report states that the operating deficit for May was about \$1,500, mainly due to track repairs and other necessary work.

Waterloo-Wellington Ry.—Bridgeport, Ont. village ratepayers voted May 19, by 63 to 0 to grant a 25-year franchise to the Kitchener Light Commissioners, for the operation of an electric railway on Lancaster St., Bridgeport. This piece of line is part of the old Berlin and Bridgeport Electric Ry., which runs from Kitchener to half a mile beyond Bridgeport, 3.45 miles. Kitchener ratepayers on May 30 defeated by 12 votes a by law to issue \$70,000 of debentures to purchase the entire line as well as the Waterloo-Wellington Ry. Co's charter rights, and to provide for rehabilitating the line. The property which it was proposed to transfer under the agreement with the Waterloo-Wellington Ry. Co., is as follows:—The track and overhead system from the corner of Ahrens and Victoria Sts., Kitchener, to easterly limits of car house property in Bridgeport, including turnouts, railway crossings, bridges, etc., as then operated; the right of way, lands, comprising 5.69 acres, from Lancaster St. to Bridgeport, including all excavations and embankments; lots on Wellington and Louise Sts., car house property in Bridgeport; and all shelters and fencing along the railway and road by it; 3 cars; 10 gravel cars, and 110 sections of folding and 36 sections of non-folding snow fencing.

Windsor, Essex & Lake Shore Rapid Ry.—The following are the directors for the current year, as elected at the annual meeting recently: T. P. Pinckard, Windsor, Ont., President; A. Eastman, Windsor, Vice President; J. W. McColl, Toronto, Secretary-Treasurer; G. R. Cottrelle, Toronto; W. R. Phillimore, Leamington,

Ont. The principal officials are: L. A. McLarty, General Counsel; H. F. MacDonald, Assistant Secretary, Treasurer and Auditor; C. P. Cooper, General Superintendent; E. S. Hughes, Assistant General Superintendent and Traffic Manager.

Winnipeg Electric Railway.—

	Apr. 1923	Apr. 1922	4 mons. to Apr. 30, 1923	4 mons. to Apr. 30, 1922
Gross	\$462,442	\$435,059	\$1,911,758	\$1,871,894
Expenses	317,309	307,217	1,812,147	944,708
Net	145,133	127,842	599,611	926,686
Fixed charges, taxes, etc.	90,015	81,008	345,970	663,232
Surplus	55,118	46,834	253,641	263,454

The New Brunswick Power Co. and St. John City.

After the failure of the negotiations between the New Brunswick Power Co. and the St. John City Council, with respect to the distribution of electric power from the New Brunswick Government's hydro electric development plant at Musquash Falls, the city proceeded with its plans for the installation of its own plant. The N.B. Power Co. at once applied for an injunction to prevent the city going ahead, and the case was argued before Chief Justice Hazen, April 5. An interim injunction was refused, but the Chief Justice said that he viewed with apprehension the plan of going ahead with another distribution plant, and intimated that if the city did so before the main suit was tried, it would be at its own risk.

The N.B. Power Co., which passed under new control recently, made another offer to the city council on April 3, to take over the power distribution contract from May 1, and in consideration therefor, to provide city street lighting at 1½c. per kilowatt hour; to extend its electric railway to Lily Lake; to buy not less than 10 new street railway cars, and to retain the \$1 a week railway pass. Subsequently, the company offered to administer the contract under a board of directors to be appointed by the company and the city council, which would buy the power from the city. These offers were rejected on April 5.

Manitoba Public Utilities Commission.—We are officially advised that under the act, passed at the Manitoba Legislature, last session, the Provincial Secretary will act in all cases in the place of the former Public Utilities Commissioner. Clause 3, in the bill as introduced, was modified, and now reads, "In cases of special difficulty or importance the Lieutenant Governor in council may appoint any fit and proper person to act as assistant to the Provincial Secretary in carrying out the provision of this or the said acts." It is not intended to appoint a permanent assistant to the Provincial Secretary to take charge of these particular duties.

Victoria, B.C.—The Victoria Colonist says: "Owing to increasing costs there are not many, if any, street car services that can now operate a 5c fare. Seattle, which has a municipal system, tried the experiment, and it has broken down in less than two months, the deficit being nearly \$5,000 a day. Seattle is now to have a 10c fare. In view of the experience of other cities, and especially those cities where municipal systems are in force, Victorians may consider themselves fortunate to enjoy a 6c fare."

Limitation of Period Within Which Accident Actions May Be Started.

All electric railways, no matter whether municipally or privately owned, suffer from claims being made, in some cases at a very considerable time after accidents have claimed to have happened, and of which it may not be possible then to obtain any details or witnesses. To obviate this, J. E. Thompson, North Toronto, introduced a bill in the Ontario Legislature recently to repeal the Ontario Railway Act, sec. 265, subsecs. 1 and 2, and to substitute therefor the following:—

"(1) Subject to subsec. 4 of sec. 139, an action shall not lie for the recovery of damages for the breach of any contract, express or implied, or for trespass or negligence in the construction, equipment, maintenance, or operation of a railway after the expiration of three months from the time when the cause of the action arose, or if there is a continuance of the damage, within three months next after the doing or committing of such damage ceases.

"(2) No such action shall lie unless notice in writing containing a statement of the particular act or omission complained of has been served upon, or sent by registered post, to the company or to one of the chief officers of the company within seven days after the happening of such act or omission. (a) Where by reason of death or from any other cause the court or judge before whom the action is tried is of opinion that there is reasonable excuse for the want or insufficiency of any such notice and that the company was not thereby prejudiced in its defence, the court or judge may direct that the failure to give, or the insufficiency of the notice, shall not be a bar to the action."

Such determined and unreasonable opposition to the bill was shown that it was withdrawn.

Electric Railway Notes.

Montreal Tramways Co., asked tenders recently for 25 motor cars and trailer cars, of its standard p.a.y.e. type.

London St. Ry. Co. has appealed against an assessment of \$10,000 a mile made on its 23 miles of track, by the city.

The Kitchener & Waterloo St., Ry., has bought a 4,000 gall. railway sprinkler and flusher, from Don M. Campbell, Ltd., Preston, Ont.

The Toronto Transportation Commission has bought 7,000 standard Canadian white oak ties, from Don M. Campbell, Ltd., Preston, Ont.

Hamilton Radial Ry. put its usual summer half-hourly service between Hamilton, the Beaches and Burlington, Ont., into effect on June 17.

London & Port Stanley Ry. is reported to have carried about 7,500 passengers from London to Port Stanley, Ont., on May 24, the opening day of the summer traffic.

Ottawa, Ont., city board of control is reported to have passed for payment accounts for \$7,294.51 for services rendered and \$2,387.08 for expenses, by the engineers employed by the city in the valuation of the Ottawa Electric Ry., in connection with the purchase proposal plan which was defeated at the municipal election, Jan. 1.

The Toronto Transportation Commission's Activities.

Re-routing of Cars.—The Commission will place in operation on July 1 a complete new system of car routing. We are officially advised that the question of car routing has been allowed to stand over for some time on account of so much rehabilitation and new construction work being in progress, but now that the track work is nearing completion, attention can be given to the route changes necessitated by the extension of the street railway system, the area now served being about 35 square miles, compared to 17 square miles at the time the Commission assumed control. The new routing will be in the interest of both the public and efficient operation, and while some of the present routes will be maintained practically unchanged, others will be revised radically. Coincidentally with the introduction of the new routing, a system of employing the equipment on hand will be introduced, by which the 575 new cars will be used to give the basic service, and additional service in rush hours will be given with the 70 cars taken over with the Toronto Civic Ry. lines and the 350 p.a.y.e. cars taken over from the Toronto Railway Co., the latter to be converted into front entrance cars with the same fare collection system as on the new equipment.

New Loops.—Construction is now proceeding on two loops, one at Dundas and Vincent Sts., in the west end of the city, and the other at Broadview Ave. and Erindale Ave., in the east end. They will be used by cars on the King St. run, the route on which changes on July 1. The King St. cars will run up Roncesvalles Ave. and loop at Vincent st., about 400 ft. north of the intersection of Bloor and Dundas Sts., and at the other end of the run will run up Broadview Ave., north of Danforth Ave., and loop at Erindale Ave.

Dundas St. Cross Town Line.—The connection between Bay St. and Victoria St., along Dundas St., designed to furnish a new east and west cross town line, is practically completed. During June the intersections at Bay and Dundas Sts., Yonge and Dundas Sts., and at the junction of Dundas St. and the new line, have been installed, and the connecting tracks laid.

Roncesvalles Car House.—Sullivan & Fried, Toronto, to whom the contract for the construction of the car house at Roncesvalles Ave. and Queen St., was awarded, have begun work, and are making good progress with the foundations. Demolition of the old car house, the contract for which was awarded to W. H. Bagshaw, Toronto, is proceeding, the expectation being that all the material would be removed by June 30. A contract for retaining walls at two points on the property has been given to Power & McAllistair, Toronto, who have begun work on their construction. A preliminary description of the new house was given in Canadian Railway and Marine World for April, pg. 181.

Track Construction and Rehabilitation.—At the time of writing (June 18) the Commission is proceeding with track work as follows: Intersection installation, Dundas and McCaul Sts.; rehabilitation of north track on Front St., between York and Simcoe Sts.; repaving of track allowance, Front St., between Yonge and Bay Sts.; repaving of track allowance on Adelaide St., between Simcoe St. and Spadina Ave.; construction

of loop at Broadview and Erindale Aves.; rehabilitation of both tracks on Queen St., between Don bridge and Broadview Ave.; construction of loop at Dundas and Vincent Sts.; finishing of track laying and intersection installations on Dundas St., connecting line; miscellaneous repairs and renewals.

Car Deliveries.—Up to June 18, 16 motor cars had been received from Ottawa Car Mfg. Co., and it was expected to have 4 more before June 30, leaving 30 more to be delivered. All the trailers ordered from Canadian Car & Foundry Co., Montreal, have been delivered.

Materials Ordered.—Orders have been given recently for 15 pieces of special work; 185 tons rails; 1,050 pairs welding plates; 10,000 lb. T.B.W.P. cable; 430 50-ft. tubular steel poles; 1 reciprocating track grinder; 1 no. 4 Champion crusher.

Passing Sidings, Hydro Electric Railways, Toronto & York District.

The Hydro Electric Railways, Toronto & York District management planned the construction of five passing sidings on the Metropolitan Division at mileages 5.3, 7.5, 8.8, 11.6 and 19.5 north of Toronto, and applied to the Ontario Railway and Municipal Board for approval of plans. The Ontario Department of Public Highways claimed that it, as represented by the Minister of Public Works and Highways, alone could give the railway management permission to proceed with the proposed sidings, and at a hearing before the Railway and Municipal Board in Toronto, on June 11, the Highways Department was represented by S. P. Biggs and T. J. Agar, who disputed the Board's jurisdiction, basing their argument on the Act to Provide for a Provincial Highway System, Ontario Statutes, 1917, chap. 16, sec. 19, which is as follows: "Notwithstanding anything in any general or special act or in any bylaw, resolution, license of occupation, agreement, or other act of a municipal corporation, no street railway or electric railway shall be laid down, constructed or operated upon a provincial highway except with the consent of the Lieutenant Governor in council, and under and subject to such terms and conditions as he may impose, but this section shall not apply to any railway or part of a railway now in operation, and shall not be construed to affect or prejudice the rights, franchises and privileges of any company owning or operating such railway; provided that such company shall not move its rails to or upon the highway except with the consent of the Minister."

W. W. Pope, Secretary and Solicitor, Hydro Electric Power Commission of Ontario; W. R. Robertson, General Superintendent of Electric Railways, Hydro Electric Power Commission; and C. L. Wilson, Assistant Manager, Hydro Electric Railways, Toronto & York District, appeared for the railway. Mr. Wilson submitted evidence as to the necessity of the sidings in the interest of efficient transportation service, which was not contradicted by the Highways Department representatives. Mr. Pope argued that as the Hydro Electric Power Commission had taken over the Toronto & York Radial Ry. franchise, that of an

operating road with certain vested rights, the Commission was free to exercise those rights, among which was the right to construct and maintain such switches and turnouts as may from time to time be found necessary.

The Board approved of the plans submitted to it, but its judgment provided that construction should be delayed a week to give the Highways Department time to apply for a stated case if it so desired. The Department, on June 14, applied to Chief Justice Meredith, in the First Division Court, for leave to appeal, which was refused, on the ground that the work would involve no damage to the highway. At the time of writing (June 19) no further action had been taken by the Highways Department to attempt to prove that the railway management must apply to it for permission to construct the sidings.

Mainly About Electric Railway People.

Lewis Burran, Electrical Engineer, Quebec Ry., Light, Heat & Power Co., was given a gold mounted walking stick, and a number of other articles by members of the power division and head office staffs, on June 14, on retiring after about thirty years service with the company. Mr. and Mrs. Burran sailed from Quebec on June 16 for England, on a three months holiday trip.

A. G. Grout, heretofore of the Toronto Globe's city news staff, has been appointed to a position in the Toronto Transportation Commission's executive department.

Sir Ernest Harvey, K.B.E., of London, Eng., one of the British Columbia Electric Ry. Co's directors, visited the Pacific coast recently to inspect the company's properties. He spoke at a dinner given by the company to a number of public officials at the Stave Falls plant, and was the principal guest at a luncheon given at Ocean Falls by George Kidd, General Manager.

Arthur Lee, formerly of the Canadian Car & Foundry Co., has been appointed General Foreman, Car Body Shop, Toronto Transportation Commission.

Michael Power, formerly Master Car Builder, Toronto Ry., and latterly General Foreman, Car Body Department, Toronto Transportation Commission, has been transferred to the T. T. C.'s Purchasing Department, as Material Inspector.

M. C. Smith, heretofore Superintendent, Light, Power and Railway Departments, Nova Scotia Tramways & Power Co., Halifax, N.S., has been appointed Manager, Cape Breton Electric Co., Sydney, N.S., succeeding C. C. Curtis, who has been appointed Vice President, Fall River Gas Works Co., a property managed by Stone & Webster, at Fall River, Mass.

The Regina, Sask., City Council has offered to accept \$2,100 a year for advertising privileges on the municipal railway cars provided the Canadian Street Car Advertising Co. will enter into a contract for five years. The company asks for a 10-year contract.

Montreal City Council's special committee appointed to study the tramways question, is reported to have drawn up a large number of suggestions for the improvement of present service, for extensions of lines, and for the construction of additional lines.

Niagara, St. Catharines & Toronto Railway Proposed Improvements.

We are officially advised that the Canadian National Railways management has developed plans for extending and improving the Niagara, St. Catharines & Toronto Ry. service, as concerns both the interurban lines and terminal accommodation at St. Catharines, and the urban lines in St. Catharines, Port Dalhousie, Niagara Falls, Thorold and Merritton. The amount to be spent will be about \$2,500,000; about half of which will be used for rehabilitating and improving the interurban lines and repairing bridges, so as to place the track in condition for high speed operation; additional equipment; the electrification of the G.T.R. branch line between Port Dalhousie and Merritton, to provide for its operation in conjunction with the present N.St.C.&T.R. interurban lines; and rehabilitation of the docks at the east side of the Welland Canal at Port Dalhousie, to place them in good condition for handling freight to and from the railway's ships. The other \$1,250,000 will be used in improving the local services in the municipalities served and in providing terminal accommodation at St. Catharines, and the expenditure of the part of the amount which will be necessary for local line improvement will be contingent upon the municipalities entering into franchise agreements on the conditions desired by the railways management. The expenditure for the interurban line improvements, the Port Dalhousie dock improvement, the G.T.R. branch electrification, and the St. Catharines terminal construction has been definitely decided upon. Upon completion of the improvements to the interurban system, the cars on the Welland Division, which now operates between Port Colborne and Thorold, will run through from Thorold to St. Catharines.

The present fares in St. Catharines, Merritton, Thorold and Niagara Falls are 5c, with 6 tickets for 25c, and only 5c is charged between Port Dalhousie and St. Catharines. E. W. Oliver, General Superintendent of Electric Railways, C. N.R., met committees of the municipal councils during the first half of June and explained the situation from the railway viewpoint, which is, in effect, that the local services have been losing money steadily and that the improvement in service sought will be impossible without fare increases. The railways management will not undertake to furnish the improved service at less than cost; it contends that in addition to paying operating expenses the returns must at least cover the charges on the new capital to be invested, although earnings to cover charges on expenditures made before are not insisted upon. The fare calculated as necessary is 7c cash, with 4 tickets for 25c, in St. Catharines, Thorold, Merritton and Niagara Falls, and a 15c return fare between Port Dalhousie and St. Catharines. While the railway franchises in some of the municipalities have expired, in others they have not; but irrespective of the present franchise situation, the management desires new franchise agreements with all the municipalities. In addition to increased fares, the management asks that it be guaranteed freedom from bus competition, the method of preventing such competition to be determined by the municipalities, and agreements respecting paving allowances are sought to provide that the railway

pay for all paving and road work required over what would be required were the railway line non-existent.

The track work proposed in St. Catharines would include rehabilitation of from 85 to 90 % of the present lines, the construction of short connections to provide for re-routing of cars in such a way as to have all of them run on a loop route and to reduce all double track operation to a minimum, which is desirable on account of the narrow main streets; and track extensions on Carlton, Lake and Geneva streets. The track work in Niagara Falls would include rehabilitation of existing lines and track extension on Lundy's Lane and Stanley St., making possible a much more comprehensive service than now given, and the work in Merritton and Thorold would be confined to rehabilitation only. All of this local improvement work is contingent upon the municipalities meeting the railways' franchise conditions, but there is said to be every prospect that agreements embodying these conditions will be entered into without undue delay.

In addition to the track work planned for St. Catharines, a large passenger terminal will be built facing Geneva St., at Balfour and Welland Sts. This station, to be served by 7 tracks, will be of brick construction, 2 stories high, and will contain waiting room, ticket office, etc. on the first floor and the railway general offices on the second floor. All interurban lines entering St. Catharines, will enter this terminal. Provision has also been made for the construction of a modern freight terminal on property acquired on Church St., very centrally located and convenient to the majority of the city's industries. A freight shed, probably of wood, will be built, and tracks laid to enable 27 cars to be placed for loading or unloading at the shed, and 52 at the team tracks.

As stated above, the G.T.R. Port Dalhousie-Merritton branch is to be electrified, which will enable the railway to transfer a large part of its interurban traffic from St. Catharines streets to private right of way. It is a first principle in electric railway operation, that the total running time on any run of such length that it approaches an interurban service, is much longer if all or part of the run is on the public streets, than it is if the cars operate on a right of way which is closed to the public, and by acting on this principle the railway will be able to furnish a much better service than heretofore, on interurban lines touching St. Catharines. We are officially advised that between Port Dalhousie and Niagara Falls the time will be cut in half, it being the intention to institute a 45 minute schedule between those points when the contemplated improvements are effected.

While plans for additional equipment, are not complete, we are officially advised that it is the intention to introduce multiple unit operation on the interurban lines, and have it supplement the single car operation existing at present.

The general plans provide for an improvement of the whole system, by providing a much faster interurban service, and an improved local service. While there is naturally some opposition on the part of the travelling public to paying increased fares, it appears to be pretty well recognized that it is unreasonable

to expect the railway management to continue to operate at a 5c fare, which has been demonstrated as a losing proposition. The management is prepared to go ahead with the interurban line and the St. Catharines terminals and if its conditions as to fares, paving costs and absence of bus competition are met, both the interurban and local improvements could be proceeded with as one undertaking.

Toronto Suburban Railway City Lines Sale.

Gerard Ruel, K.C., Vice President and General Manager, Canadian National Rys., wrote City Comptroller Singer, of Toronto, recently, in regard to the sale to the city of the Toronto Suburban Ry. lines within the city, as follows:—"I am advised by our railway authorities, who have the matter in charge, that a valuation has been agreed upon, and am also advised from Ottawa that the necessary legislation has been obtained enabling us to sell. There remains the preparation of the papers, which include principally the designation of the properties and rights to be transferred. I have asked our officials to consult with representatives of the city with a view to preparing the schedule to be attached to the transfer, and I should suggest that you people take steps at once to name the proper official or officials to deal with this feature of the transaction. Heretofore we have dealt with Mr. Couzens, of the Toronto Transportation Commission, and I presume that he will be designated by the city. It is necessary, however, that we should be advised of the officials or official selected by the city in order that final results may be quickly obtained."

The city board of control has appointed H. H. Couzens, General Manager, Toronto Transportation Commission; R. C. Harris, City Works Commissioner, and G. R. Geary, Corporation Counsel, to deal with the matter as suggested by Mr. Ruel.

Sunday Traffic Over Niagara Bridges.

—A United States Federal Court, sitting at Buffalo, N.Y., June 17, is reported to have granted the International Ry. Co. a temporary injunction restraining the Collector of Customs at Buffalo from closing the upper steel arch bridge, and the Lewiston-Queenston bridge, against electric traffic on Sundays and public holidays. Arguments in the main action were fixed for June 25. The Collector demands that the International Ry. guarantee payment for customs officers employed at the bridges on Sundays and holidays, for overtime at double the regular rates of pay. This the company refuses to do. The matter was argued in the U.S. courts about two years ago and a decision adverse to the then Collector was given.

The Winnipeg Electric Ry. is reported to have advised the city council's public safety committee, that if the city will pave streets in certain districts the company will establish bus services thereon, but it will not operate buses on unpaved streets.

Brantford City Council has authorized the purchase of a new motor car, to cost \$10,000 for the municipal railway.

Electric Railway Projects, Construction, Betterments, Etc.

The British Columbia Electric Ry. Co. is reported to have arranged a comprehensive plan for the further development of its water power resources, at an estimated cost of \$10,000,000, which will increase the total capacity of the plants from 153,000 to 268,000 h.p. The plans are subject to the approval of the B.C. Government. Surveys are reported in progress for a pole line from the present Slave Lake plant to Alouette Lake, 10 miles, where a 10,000 h.p. plant is to be installed. An 80,000 h.p. plant is to be installed near Ruskin.

Work on the reconstruction of the track on Hastings St., between Cambie and Granville Sts., Vancouver, is reported to have been started June 4, and was expected to be completed by June 30. A city gang followed up the company's tracking laying gang, completing the paving. (June, pg. 295.)

A press report states that the company's substation at Port Coquitlam, was burned during an electric storm, June 7. The damage is estimated at \$10,000.

Calgary Municipal Ry.—Recent heavy rains flooded a considerable area of Calgary, Alta., causing a good deal of damage to the street railway tracks. Settlement of the tracks, owing to washouts under the pavement, were reported June 6, and other settlements were expected to develop.

A press report states that general repairs to the lines are being done, at an estimated cost of \$60,000. (Sept., 1922, pg. 479.)

Fort William Municipal Ry.—We are officially advised that the Fort William, Ont., City Council and the Mount McKay and Kakabeka Falls Ry. Co., are negotiating with respect to the electrification of that line. The M. McK. and K.F.Ry. Co. was incorporated by the Ontario Legislature in 1904 to build an electric railway from within Fort William to Kakabeka Falls, 15 miles. In 1907 a route was surveyed and approved for the line within Fort William, and an agreement was made that in the event of Fort William acquiring the electric lines in the city from Port Arthur, running rights would be obtained over them. About 2.5 miles of track were laid, principally in Paipoonge Tp., in 1907-8, and in 1909 a connection was made with the Fort William tracks and a park site was laid out in Paipoonge Tp. The railway was never completely electrified, steam being used mainly as motive power, and the principal traffic consisted of gravel. The Fort William City Council, in 1914, had a valuation made of the line, and the additional 2.5 miles of right of way on which grading had been done, with a view to taking over the property. The proposition under discussion provides for the electrification of the line, and the extension of the city's electric car service to King George Park, and the new Canadian National Rys. yards in Neebing Tp., a total distance of 5 miles. (April, pg. 181.)

Grand River Ry.—A press report states that plans have been prepared for the G.R.R. and Preston, Ont., town council for a new traffic bridge across the Speed River, in Preston, that it will consist of 8 spans, carrying a 42 ft. highway, with a 6 ft. sidewalk on each side, and that the G.R.R. tracks will be laid on the highway over the bridge. (Sept., 1922, pg. 479.)

Hamilton Radial Ry.—Residents along the Hamilton Beach are urging the removal of the company's tracks from the side to the center of the highway. The Dominion Power and Transportation Co. management is reported to have stated that the Beaches Commission and the Ontario Government had refused to pay the cost of removal of the tracks, estimated at \$50,000, and that the company would certainly not move them, voluntarily.

Hamilton St. Ry.—We are officially advised that about half a mile of the double track line on Main St., Hamilton, Ont., from Ottawa St. to Kenilworth Ave., is being rebuilt. The rails have been ordered from United Steel Products Co. (May, pg. 238.)

Hull Electric Co.—We are officially advised that the company is replacing the 65 lb. rails on the south end of the Laurier Ave., Hull, Que., line, with 85 lb. rails; and replacing the 72 lb. 5 in. rail on Youville St. line with 80 lb. 7 in. rail. The relaid track on the latter street is to be repaved with sandstone blocks. The company is also repaving the north end of the line on Bridge St. with asphalt, on concrete base. It is proposed to replace the present 56 lb. rails from mile 4 to mile 7 on the Aylmer line with 85 lb. rails. (Nov., 1922, pg. 581.)

Oshawa Ry.—A press report states that a spur line to Lakeview Park, Oshawa, Ont., is likely to be built during the summer. (Aug. 1922, pg. 429.)

Ottawa Electric Ry.—Eastview Board of Trade is reported to have passed a resolution June 4, favoring the laying of street car tracks on the Montreal road, as far as Eastview town limits, and suggesting that, if necessary, the town should build the line, and arrange with the company to take it over.

Quebec Ry., Light & Power Co.—In connection with the increasing of the capital of the Quebec Public Service Corporation, which now owns the Q. R., L., & P. Co., it is reported that, in addition to the purchase of some new rolling stock, it is proposed to build several extensions of the car lines in the city and suburbs. (April, pg. 181.)

Regina Municipal Ry.—Regina, Sask., City Council has under consideration a plan to build loops at the ends of the Red and of the Red and Green lines, to facilitate service. (June, pg. 295.)

St. Thomas Municipal Ry.—A press report states that considerable track repair work has been done by the St. Thomas, Ont., City Council on the railway, including the putting in of a large number of new ties, and the construction of a loop at the rear of the car house.

Three Rivers Traction Co., Three Rivers, Que., is building a single track extension from the corner of Des Forges and Notre Dame Sts., via St. George and St. Philippe Sts., to the St. Lawrence Paper Mills, Ltd. new mill at the western limit of the city, close to the St. Lawrence River. Seventy-five pound T rails are being used, and the overhead system is part steel pole and part wooden pole construction. The estimated cost is about \$78,000. It is expected to finish it by the end of the summer.

Three Rivers Traction Co.—A press report states that it is proposed to build a 5 mile extension. (March, pg. 135.)

Winnipeg Electric Ry.—We are officially advised that the company is recon-

structing the grand union intersection at Higgins Ave. and Main St., and is arranging for the rehabilitation of 4,000 ft. of double track on Main St., and of 1,000 ft. of double track on Higgins Ave., and for the construction of an extension of 5,600 ft. of single track on St. Marys Rd., and of 1,500 ft. of double track on Sargent Ave. The company is also contemplating the erection of an addition to the St. James substation, and the addition of the second story over the whole building. In connection with its subsidiary, the Winnipeg, Selkirk and Lake Winnipeg Ry., the company proposes to build a dining room and dance pavilion at Selkirk Park, to accommodate 500 people.

The St. Vital Citizens' Association is reported to be asking for the construction of a second track on the line serving that municipality.

The Winnipeg City Councils' transportation committee is reported to have had under discussion recently the question of car line extensions in the city, it being claimed that certain extensions are overdue under bylaw 543. It was stated that the company was spending \$300,000 on rehabilitation of tracks, and renewals of the system and had no money to provide the proposed extensions.

Provincial Taxation of Electric Railways.

The Citizens' Research Institute of Canada has issued a report on the provincial taxation of public utility corporations, in which the following refers to electric railways:—

Prince Edward Island: No special tax. [Editor's Note.—The Island has no electric railways.]

Nova Scotia: 1% of gross income, if paid-up capital is \$30,000 or over.

New Brunswick: In the discretion of the Lieutenant-Governor, but not less than \$50 a mile, nor more than \$100 for each mile operated by the company.

Quebec: \$50 for each mile of single track in operation; \$100 for each mile of double track.

Ontario: When mileage within city does not exceed 20 miles, \$20 a mile; when mileage within city exceeds 20 miles, but not 30, \$35 a mile; when mileage within city exceeds 30 miles, but not 50, \$45 a mile; when mileage within city exceeds 50 miles, \$60 a mile. Every company shall pay in addition a tax of 1% upon net earnings from within the municipality. One mile of double track equals 2 miles single track. Switches, sidings, etc., exempt.

Manitoba: The tax is levied on the same basis as in Ontario, but varies somewhat as to grades as follows: Railway 15 miles or under, \$30; 15-30 miles, \$40; 30-50 miles, \$50; over 50 miles, \$60. Exemptions and computation of mileage the same as in Ontario.

Saskatchewan: No special tax.

Alberta: Where whole line of track is 20 miles or less, a tax of \$200, and \$10 for each mile in excess of 20. Exemptions and computation of mileage the same as in Ontario.

British Columbia: 2% upon gross income.

A Port Arthur, Ont., press report states that a Duluth, Minn., bus proprietor proposes to run a daily bus service between there and Port Arthur, starting July 1, with \$10 fare.

Electric Railway Wages, Working Conditions Etc.

Brantford Municipal Ry.—The board of conciliation appointed to investigate a dispute between the Brantford, Ont., Railway Commission and its employees, consisting of J. G. O'Donoghue, chairman; F. H. McGuigan, representing the Commission, and James Simpson, representing the men, presented a unanimous report on May 22, which said in part: "As a result of the good feeling displayed by all parties, prompted as they were by a sense of fairness towards one another, the board was enabled to bring them together in an agreement. Special circumstances that need not be referred to here governed both parties in their attitude towards each other."

The agreement annexed to the report was made retroactive to April 1, and is to continue in force for one year, and from year to year thereafter, except upon 30 days notice by either party. It provides that 9 hours, to be consecutive if possible, but in any event not to be spread over more than 12 hours, shall be a day's work, and that time and a half be paid for overtime. The wages fixed for motormen and conductors per hour are: First year, 46c; second year, 48c; third year and thereafter 50c.

Hull Electric Co's employees are reported to have asked for a revision of the wage schedule and for the adoption of an 8-hour day. The present schedule, which was agreed to in Aug. 1922, after a conference following the findings of a board of conciliation, and which came into operation as from July 1, 1922, gives motormen and conductors a maximum rate of 44c an hour. The men are reported to be asking for a 10% increase. They now work 9 hours.

Hydro Electric Railways, Toronto & York District.—Wages and working conditions were agreed on at a conference, in the early part of June, between the management and the employees, the conductors and motormen affected being members of Amalgamated Street Railwaymen's Union, Division 113, and the other employees members of the Canadian Electrical Workers. Conductors and motormen, who were formerly paid on a monthly basis, receiving \$100 a month during the first year of service, \$105 during the second year, and \$110 thereafter, with overtime pro rata after 10 hours service, are to be paid by the hour, the rate being 44c during first year of service, 47c during second year, and 50c thereafter, with overtime after 11 hours service paid for at 20c an hour in addition to the regular rate. Linemen, formerly paid 45c to 47½c an hour, receive increases ranging from 8c to 10c an hour, the new rate for the majority of the employees in this class being 55c. Overtime for linemen will be paid, after 10 hours service, at time and on-half. Substation operators, heretofore paid at various rates and working varying shifts, will be paid \$120 a month, on the basis of a 56-hour week. No overtime provision for operators was made, on account of three shifts being worked, with no prospect, therefore, of any operator being called upon to work overtime. Dispatchers, heretofore receiving \$125 a month, on a 48-hour week basis, were increased to \$140 a month, hours of work remaining as before. The rates for groundmen, maintenance men and meter men were advanced from 37½c to 45c, from 32½c to 37½c, and from 42½c to 50c an hour,

respectively. No holidays will be given, with pay but employees may arrange for time off without pay. The railway management was represented by W. C. Robertson, General Superintendent of Hydro Electric Rys., and C. L. Wilson, Assistant Manager, Hydro Electric Rys., Toronto & York District. The settlement terminates a long negotiation. In April, 1921, the employees, dissatisfied with wages and working conditions, applied for a board of conciliation under the Lemieux Act, which was granted, with Allan Purvis, formerly General Superintendent, Ontario District, C.P.R., as chairman, but the railway management refused to appoint a representative. The Minister of Labor thereupon appointed F. H. McGuigan, of Toronto, as the railway representatives. After hearings, the board issued a statement in which it said that, in view of the negotiations then proceeding for the control of the railway, it did not see fit to make any definite award.

London St. Ry.—A press report of June 11 stated that the company had advised its conductors and motormen of an advance of wages, which would have the effect of restoring the maximum rate of 48c an hour which was in effect two years ago, the advance to date from June 1. The men accepted the offer which followed the result of negotiations that had been going on for some time.

The schedule agreed to June 16, 1922, provided for the following rates per hour: First year, 41c; second year, 44c; third year and thereafter, 46c an hour. The new rate adds 2c an hour, thus returning to the wage schedule agreed upon in June, 1921. Other working conditions remain as before, including the differentials of 12c an hour for overtime over and above the schedule time, also the following additions: 5c an hour for operating one-man cars; 3c an hour for operating sweepers, and 3c an hour for training new men. Certain adjustments were made in the shops, and other departments, according to the local conditions existing in the various crafts involved.

Montreal Tramways Co.—We were advised June 5 that no official demand had been made by the employees for an increase of wages. The men held a meeting some time ago and it was stated that they decided to ask for an increase.

Ottawa Electric Ry.—The board of conciliation appointed to investigate the dispute between the company and its employees, consisting of F. T. Costello, Alexandria, Ont., chairman; G. D. Kelly, Ottawa, representing the company, and H. J. Burns, Ottawa, representing the men, concluded the hearing of evidence, May 25, and then spent several days reviewing it. On June 1, a majority report was signed by the chairman and Mr. Burns, and, on June 6, Mr. Kelley submitted a minority report. The majority report states that on May 9 it was suggested that the parties get together and agree on as much as possible of a new agreement. This was done and on May 15, it was reported that everything except the wages, hours of labor and working conditions had been settled. After reviewing the arguments on the question of working hours, the majority report said:—"This board recommends the establishment of the principle of the 8-hour day, but that this be actual plat-

form time, i.e., to be from the actual time a run is started from the shed until it is completed at the shed. The board further recognizes that in the business of a street railway it is impossible to adhere to a strict 8-hour day, and in view of this it recommends that where a run can be completed within 20 minutes in excess of the 8 hours, the same shall be worked by the men and shall be paid for by the company at only regular rates. Only where a man works in excess of 8 hours and 20 minutes shall he be paid overtime, and then he shall be paid time and a half over the 8 hours. The question of the spread of time is another case where the board feels that the company is experiencing difficulty, having regard to the fact that at certain times of the day it is necessary to provide a great number of cars for the convenience of the public which are not used at other times when the traffic is light in comparison, and for that reason the board does not consider that the men's demand that the work be completed in 10 consecutive hours is feasible, and therefore recommends that the work, where possible, be completed in 10 hours, but in no case is the spread to exceed 12 hours. In regard to the men's demand for an increase of 25% in wages, the board, from the evidence submitted, finds that the cost of living has increased somewhat, but, because of the financial burdens which the inauguration of an 8-hour day would impose upon the company it recommends an increase only of 6c an hour, which would bring the older employees up to the daily wage which they are at present receiving for a day of 9 hours. The rates of pay per hour recommended for motormen and conductors are:—First year, 50c; second year, 52c; third year, 53c; fourth year and thereafter 54c. These rates to be retroactive to May 1. The report added that it was stressed by the company's representatives that the establishment of an 8-hour day and an increase in hourly wages would entail such a financial burden that the profits would be cut down to nothing, or a loss might be caused. The company is obligated to the city for 5 years to maintain a 5c fare generally. In the majority of the board's opinion this is not a matter for their consideration they considering that the matter might be adjusted by an appeal to the Board of Railway Commissioners.

The minority report by G. D. Kelley, the company's representative, deals with the three matters really at issue between the parties: the rate of wages; the 8-hour day, and the spread. He points out that it was shown that the increases granted to the company's employees were 7% higher, than relative increases elsewhere; and that the wages paid to motormen and conductors were actually higher than those paid to skilled classes of workmen in Ottawa. He points out that one of the representatives who argued the men's case while the board was sitting also argued the Brantford Municipal Ry. employees' case before a board of conciliation, and that a maximum rate of 50c an hour was agreed to. The public, he points out, have an interest in these matters, as the increased cost to the company could only be met by an increase of revenue, which must come from passengers. It was argued that postmen and civic employees in Ottawa have an 8-hour day and therefore the street railway employees should have it also, and that the

work done by motormen and conductors is of such an onerous nature that it tends to shorten their lives. It was admitted that, except in a few isolated cases, an 8-hour day is not worked on Canadian electric railway, and that it is not generally observed in other industries. In regard to the second point, 41 of the company's employees have been in the service for over 20 years, their average age being 55. The Brantford board, to which reference has already been made, had before it the same evidence as to hours of labor, and all parties were satisfied to accept a 9-hour day; there should be some consistency shown. With regard to the spread, Mr. Kelley points out that by altering certain runs the spread could be reduced and the company's representative promised to work out a plan to bring this about. In conclusion, Mr. Kelley says: "Having regard to existing conditions in Ottawa, as they affect the company, its employees and the public, I am of the opinion that it would be fair to all parties if the hours and wage rates at present existing were to continue in force, provision being made, if at all possible, for the spread of hours."

The company's management, on receipt of the board's majority report, immediately issued the following statement: The company cannot accept the board of conciliation's majority report, recommending the 8-hour day and 6c an hour increase in the wage rates of its employees, and has so advised the Labor Department. The following facts were submitted by the company to the board of conciliation. No reasonable arguments were presented to the board, on behalf of the employees, proving the necessity for the 8-hour day in the street railway business. To increase the hourly wage rates 6c an hour, as recommended by the majority report, would cost \$115,440 a year, without adding anything to the daily earnings of any employee, because each man would work one hour less per day. The institution of the 8-hour day would not increase the street railway revenue or the efficiency of the service. The street railway property is generally conceded to be worth between \$4,500,000 and \$5,000,000. The actual cash investment to March 31, 1923, was \$4,220,762.52. The net profits for 1922 were \$278,914; for 1921, \$235,615; for 1920, \$282,250; the average for the past 3 years was \$265,593. The 8-hour day cannot be introduced on the company's present revenue, and, if adopted, must inevitably require an increase in the rates of fare.

We have always done everything we can to improve the working conditions of our employees. Up to the time when the cost of living reached its peak in 1920, increases in wages recommended by various boards were accepted, because the cost of living was abnormal. The company knew that such rates of wages could not be continued indefinitely. The board of conciliation last year brought out the fact that the cost of living had dropped 24%. It recommended a reduction in wages of 12½%, still leaving a large margin in favor of the employees, which is still enjoyed by them. Under the present wage scale a conductor or motorman can earn, without working overtime, \$1,500 a year. Our steady employees averaged \$1,455 during the past 12 months. The board's majority report indicates that an increase in yearly wages was not considered necessary, but recommends the 6c an hour increase for the single purpose of establishing the 8-hour day in this business. In fact, the

adoption of the majority report would mean a slight decrease in wages to the individual conductor, or motorman, because it recommends the abolition of the "pull out" and "pull in" time allowance, about \$25 a man per year. The work performed by the employees has not increased in value to the community or the company, and requires no more skill or training than it ever did. At least 300 applications a month are being received for employment on the cars at the current wages. These applicants can be trained to do the work satisfactorily in from 6 to 10 days, and are quite willing to work the 9-hour day.

Since 1918 six boards have been created by the Labor Department to deal with the disputes between this company and Division 279 (the street railway employees' union). For years prior to 1918, a board was formed every two years. It is obvious that the company cannot continue to accept recommendations from boards of conciliation which constantly add large sums to its operating expenses. The majority report of this year's board states that the financial ability of the company to carry out its award is no concern of the board, and that the company can, if it wishes, apply to the Board of Railway Commissioners for permission to increase its rates of fare, in order to adopt the 8-hour day. We do not think the 8-hour day is necessary, or justified. We believe the working conditions of our employees are good, and that they are well paid for the work they do. We do not consider it fair to the public, or ourselves, that the present wage rates should be increased, and therefore cannot accept the board's majority report. Those of our employees who are not satisfied should look for work in some other occupation.

The employees held several mass meetings. At the first, on June 2, they decided unanimously to accept the conciliation board's majority award. At the second, on June 12, when they were convinced that the company would not recede from its position, they talked strike, and decided to apply to the international union for authority in that connection. On June 16 the Mayor attempted to secure a settlement, first meeting the men's committee, and then the company's Manager, Major Burpee, who adhered to the decision that the majority award could not be accepted. The city authorities also communicated with the Board of Railway Commissioners, and the Ontario Railway and Municipal Board, to ascertain what steps, if any, those bodies could take to secure a continuation of service should a strike occur. On June 19, W. D. Mahon, International President, Amalgamated Association of Street and Electric Railway Employees of America, announced that a strike had been authorized. The men's third meeting was held on June 21, when they decided to postpone action until June 25, the Minister of Labor having promised to arrange for a conference between the management and the men, to try and avert a strike.

The Montreal Tramways Co., as stated in a previous issue, called for tenders in April for 25 motor cars, and 25 trailer cars, of its standard p.a.y.e. type. We are officially advised, June 5, that none of the tenders had been accepted, and that the question of purchasing had been left in abeyance.

Dominion Power & Transmission Co., has ordered 150 tons of steel girder rails 87-38 section

Toronto Eastern Railway Construction.

Canadian Railway and Marine World for May published a letter from Sir Henry Thornton, President, Canadian National Rys., to a Toronto alderman, who was also chairman of a committee representing the city in connection with electric railway matters, which said in part:—"It is our intention to proceed with the construction of the Toronto Eastern Ry. immediately, and to connect it with the Toronto Suburban Ry's Guelph Division, by the electrification of the Belt Line Ry., thereby providing a rapid radial service from Guelph to and through Toronto, and over the Toronto Eastern territory. This will provide a suburban service for the part of Scarborough Township lying north of East Toronto, and the portion of York Township lying north of St. Clair Ave. and west of Yonge St., and passing through the proposed York City. This system will provide connections with the Toronto Transportation Commission lines at Queen St., (at the Don), Bloor St. viaduct, Yonge St. and Weston Road."

We are officially advised that S. B. Wass, Terminal Engineer, Canadian National Railways, has been transferred from Fort William, Ont., where he was in charge of the Neebing terminal yard construction, to take charge of the work on the Toronto Eastern, which will be started in the near future. His office will be in Oshawa, Ont. during the first part of the construction, at least.

The beginning of the Toronto Eastern Ry's construction, and the progress made with it, have been mentioned in preceding issues of Canadian Railway and Marine World. Its history briefly, is that it was a Mackenzie, Mann & Co. undertaking which passed to the Dominion Government with the Canadian Northern Ry. The Hydro Electric Power Commission of Ontario negotiated for some time to take it over from the Government, and complete its construction, on the strength of guarantees from municipalities through which it is located, but, as stated in our Dec. 1922 issue, representatives of the municipalities met S. J. Hungerford, then Vice President and General Manager, Canadian National Rys. and Gerard Ruel, then General Counsel, Canadian National Rys, and made representations which resulted in the C.N. R. management deciding to keep the line and, after finishing its construction, to operate it as a part of a complete electrified system for the Toronto territory. The way in which the Toronto Eastern would fit in with the plans for such an electrified system was described in Canadian Railway and Marine World for January, pg. 27, in which the disposition of the Canadian National Rys. Orono Subdivision line, which will be used in part in the electrification scheme, was also dealt with.

Construction is completed on the Toronto Eastern from the east end of Wellington St., Bowmanville, Ont., to Whitby, and from Whitby to the west town line of Pickering the grading is done and structures built, but no rails laid. The first work to be undertaken in the near future will be the rehabilitation of the portion of the road which was completed, and which has deteriorated to some degree, after which the grade on the remaining portion will be placed in good condition, and rails laid and ballasting done.

Marine Department

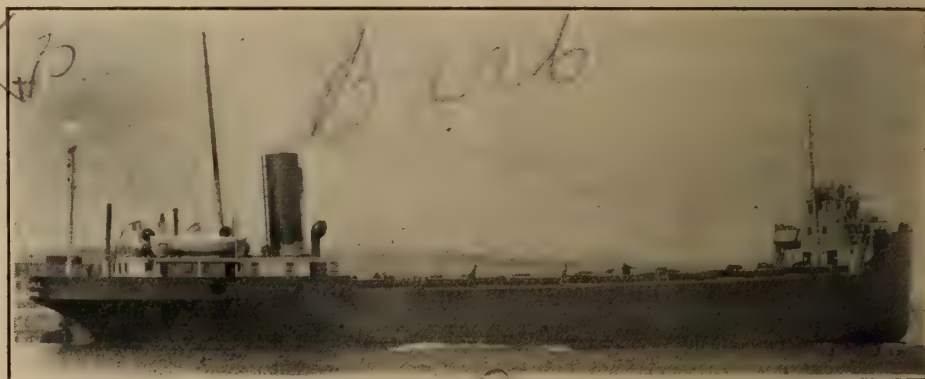
Shipbuilding and Ship Repairing Throughout Canada and Newfoundland.

Canadian Vickers Ltd., Montreal, did the following repair work during May, at its main plant.—Canada Steamship Line's s.s. Mapleboro, 1,151 tons, fitting derricks and winches on deck, repairs to derrick gear; s.s. A. E. McKinstry, 1,999 gross tons, general repairs; Canadian Government Merchant Marine s.s. Canadian Aviator, 3,388 tons; s.s. Canadian Raider, docked for survey; s.s. Canadian Pioneer, 5,399 tons, survey and underwriters' repairs, also extensive fire damage repairs to upper deck and shell; L. Dreyfus and Co. s.s. Louis L. D., 4,981 tons, survey, heavy bow damage by ice, sternpost top gudgeon broken, rudder mainpiece bent out of line; Glen Line Ltd. s.s. Glengeldie, 1,930 tons, docked for survey and bottom repairs; George Hall Coal and Shipping Corporation s.s. Brignogan, 1,594 tons, survey, underwriters' repairs and shell damage; Imperial Oil Ltd. s.s. Albertolite, 8,461 tons, general repairs and painting; s.s. Iocomia, 1,669 tons, extensive general repairs, 66 shell plates removed for renewal, fairing, etc., repairs to framing, bulkheads and tank top, 4 oil cargo tanks arranged for carriage of case goods or bulk oil, installation of cargo derricks and winches, deck and engine room equipment reconditioned for sea going service, crew's accommodation enlarged and improved and wireless operator's room equipment added, ventilation improvements and refrigerating plant with cold storage space for use in tropical climates; Union Transit Co. s.s. Wahcondah, 1,575 tons, survey, underwriters' and general repairs. The following repairs were done at the company's harbor department,—Anchor-Donaldson Line s.s. Concordia, Coracero, 5,388 tons. and s.s. Gracia,

ary repairs to bow damage; Kawasaki Dockyard Co. s.s. Kifuku Maru, temporary repairs to bow damage; Lloyd Adriatico Societe di Navigazione s.s. Adamello, 5,890 tons, temporary repairs to bow damage; Mount Royal Steamship Co. s.s. Belchers, 2,251 tons, general deck and engine room repairs; Navigazione Libreria Triestina Societe in Azioni s.s. Recca 5,400 tons, engine room voyage repairs; Rederiaktieb Svenska Lloyd s.s. Invernina, 2,120 tons, temporary repairs to bow damage; Texas Steamship Co. s.s. Pennsylvania, 6,499 tons, temporary repairs to bow damage; United States Shipping Board s.s. Sinasta, 6,052 tons, superheat-

room and deck equipment is of the highest class in every respect. The dimensions are,—length over all 218 ft., beam 35 ft., depth moulded 19 ft.. The loaded draft will be 16½ ft., when the hopper is filled with about 1,250 tons of spoil. The propelling machinery consists of triple expansion engines, supplied with steam by 2 Scotch boilers, all by Canadian Vickers, Ltd. The dredge was built under the supervision of C. F. M. Duguid, Naval Architect, Marine Department, and J. A. Alderson, representing Lloyd's Register of Shipping.

Cholberg Shipyard Ltd., Victoria (B.C.) Shipowners Ltd., Victoria B.C.—The case

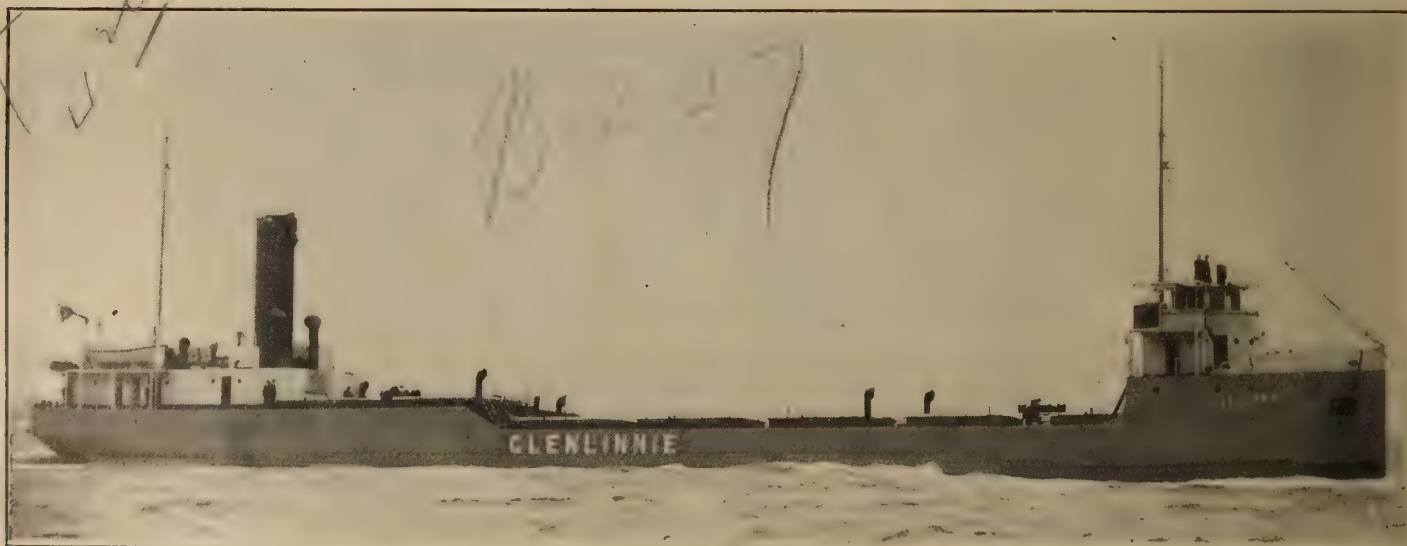


Steamship Dalrymple, Main Transit Co., built by Collingwood Shipbuilding Co.

ers retubed and general voyage repairs.

The steam hopper barge no. 3, which was launched at Maisonneuve, Montreal, recently, by Mme. Lapointe, wife of the Minister of Marine, is for dredging service in the St. Lawrence River, in con-

of the King, represented by the Dominion Government, against Cholberg Shipyard Ltd. in connection with the operation of the yard by the Government, for the completion of the barquentine Simon F. Tolmie, one of four ships which were to



Steamship Glenlinnie, Glen Line, Limited.

This is one of the nine steamships built in Great Britain recently, for James Playfair and associates, for the Great Lakes trade.

6,000 tons, voyage repairs; s.s. Parthenia, 4,753 tons, deck alterations and repairs; Anglo Saxon Petroleum Co. s.s. Crenatula, 5,563 tons, temporary repairs to bow damage; Clarke Steamship Co. s.s. Gaspesia, engine room and voyage repairs; Cunard Line s.s. Andania, 13,050 tons, propeller examination by diver; Intercontinental Transports s.s. Hoerda, tempor-

junction with dredge 16, built by the same company about a year ago. It has a hopper capacity of 950 cub. yds., with a massive hopper beam spanning the entire length of 80 ft. and carrying the guide pulleys of the hopper door chains. There are 12 hopper doors, operated by 2 specially designed powerful Clarke-Chapman hopper winches. The engine

be built by Victoria (B.C.) Shipowners, Ltd. under special aid from the Government, was before the Supreme Court at Victoria, in June. The Government is suing to foreclose a chattel mortgage for \$18,711 on Cholberg Shipyard Ltd. property, on the old Songhees Indian Reserve. The company denies that there is anything due under the mortgage,

and claims that the Government owes it about \$88,000 for occupation of premises, etc.

Collingwood Shipbuilding Co., Collingwood, Ont.—The Great Lakes Transportation Co's s.s. Matoa, which arrived at Collingwood, recently, after having been cut in two at Montreal, is being rejoined and is being lengthened by 36 ft.

Halifax Shipyards Ltd., Halifax, N.S. did the following repair work during May,—Dominion Coal Co's s.s. Hochel-

Prince Rupert Drydock and Shipyard, Prince Rupert, B.C. did the following repair work during May,—steam tugs Evergreen and Olallie, miscellaneous machinery repairs; 5 scows, docked, cleaned, painted and repaired, and 34 fishing ships given general overhaul.

Victoria Machinery Depot Co., Victoria, B.C., completed a general overhaul of the C.G.S. Estevan, prior to her starting on a cruise to the west coast of Vancouver Island, in the government light-

docked, cleaned, hull chipped and painted, spare propeller blade fitted; C.P.R. s.s. Princess Charlotte, 3,844 tons, dry-docked, propeller blades changed, cleaned and painted; C.P.R. s.s. Princess Royal, 1,997 tons, manganese propeller blade; C.P.R. s.s. Princess Louise, 4,032 tons, docked, cleaned and painted, zincs renewed and work on rudder; C.P.R. s.s. Princess Victoria, 1,943 tons, docked, cleaned, chipped and painted, tailshafts drawn and new one installed; Commercial Cable Co's s.s. Restorer, 3,180 tons, sundry deck and engine room repairs, and new derrick boom; Cosmos Line's s.s. Theben, 2,989 tons, boilers cleaned for inspection, repairs to dynamo engines, zincs renewed, and sundry small repairs. The motor-car ferry Motor Princess was completed early in May and turned over to the C.P.R. for service between Sidney, B.C., and Bellingham, Wash. On her trial trip she developed a speed of 14½ knots, about ¾ of a knot over her contract speed. Her building occupied 97 working days.

Esquimalt Drydock.—When the House of Commons was in committee of supply recently, on the item of \$1,500,000 for the drydock under construction at Esquimalt, the Minister of Public Works said the amount of the contract was \$4,217,400. There was an appropriation in 1919-20 of \$500,000, of which only \$4,994 was expended. For the year 1920-21 \$500,000 were voted, of which \$13,536 were expended. For 1921-22 \$1,300,000 were voted, of which \$1,164,000 were expended. In 1922-23 the expenditure was \$547,720. Over \$2,000,000 will be required to complete the work. The contract expires in Jan. 1924. There have been certain delays, and probably an extension will be required, and he did not think the drydock would be ready for operation before 1925. The repairs to the outer cofferdam, made necessary by the breakage caused by storms and high seas on Jan. 2, were completed June 9, and excavation work on the dock was recommenced. A press report states that the locomotive men, pile drivers and derrick men struck immediately for increases in pay, ranging from about 10%



Steamship John C. Howard, for George Hall Coal & Shipping Corporation, at time of launching, May 5. This is the last of four steamships built for the corporation, at Three Rivers, Que., recently. Length b.p. 230 ft., breadth 43½ ft., draft loaded 16½ ft., d.w. tonnage 3,270.

aga, docked April 28, for bottom damage repairs, tail shaft drawn, rudder lifted, sea connections opened up and closed in good order, furnaces jacked up and ship painted, 10 plates faired in place, 12 plates off and faired and 9 renewed, undocked May 9; Dominion Coal Co's s.s. Lingan, docked May 9, for general repairs, furnaces jacked up, and hull scraped and painted, undocked May 11; Dominion Iron and Steel Co's s.s. Watuka docked May 12, propeller removed, tail shaft drawn for examination, sea connections opened up and closed in good order, stern gland packed, ice damages repaired and hull painted, 7 plates off and faired and replaced, 4 plates faired in place and 1 plate renewed, undocked May 20; Imperial Oil Ltd. s.s. Tronto-lite, docked May 22, for preliminary work in connection with bow damage, scraping and cleaning hull, straightening out propeller blade, renewing studs and caps for one propeller blade, renewing zincs, fan water rope guard and miscellaneous repairs, including making pattern and supplying casting, machining and fitting steering engine control valve and valve chest liner, forging 1 new propeller blade nut wrench, and forging coupling on tail shaft, undocked May 28; H.M.C.S. Patriot, docked May 12, for miscellaneous engineering work, drawing starboard shaft, etc., and scraping and painting hull, undocked May 20; Anglo-Belgique Shipping Co's s.s. Cymric Queen, docked May 21, for work in connection with survey, undocked May 22; Preston Steamship Navigation Co's s.s. Gyp, docked May 28, for extensive repairs to occupy about 15 days.

house service. The Union Steamship Co. of British Columbia's s.s. Chilliwack has been undergoing repairs at the company's plant and will be fitted with new furnaces, and new boiler parts. The C.P.R. s.s. Tees has been fitted with a new smoke stack.

Yarrows Ltd., Victoria, B.C., did the



Automobile Ferry Motor Princess, Canadian Pacific Railway.

following repair work during May: British Columbia Cement Co's s.s. Matsqui, docked for survey and bottom damage repairs due to stranding; Canadian Government dredge Ajax and tug Point Ellice, docked, cleaned, painted and sundry repairs; Canadian National Ry. car ferry Canora, 2,383 tons, docked, cleaned and painted, sundry repairs and overhaul and repairs to propeller; Canadian Pacific Ry. s.s. Princess Adelaide, 3,061 tons,

to 15%, but it was subsequently stated that only two had ceased work, and that the excavation work was not being held up.

Western Freighters Ltd. has been incorporated under the British Columbia Companies Act, with \$25,000 authorized capital, and office at Vancouver, to own and operate ships, and carry on a general transportation and navigation business.

Great Lakes Grain Rates Commission's Report Criticised by J. W. Norcross.

J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines Ltd., gave out the following statement in Montreal, recently:—"The findings of the commission, as reported in the press, (See Canadian Railway and Marine World for June, pg. 305), are so radical in their scope that it is almost impossible in a brief review, to show how unfair and even futile are the recommendations that they make. Even a superficial study of the situation as it exists, and a comparison with conditions as they were in the last ten years, will indicate that the commissioners have not taken into account the abnormal and even extraordinary results that accrued as a consequence of the United States railway strike in 1922, but have seemingly taken the occurrences of that year as being generally applicable to the grain carrying trade every year.

"Much is said in the report about the high level of the rates in 1922—the commission might have referred to the figures compiled by the Dominion Bureau of Statistics, Transportation Branch where they would have seen that the rates charged not only to Canadian ports from Fort William or Port Arthur, but to U.S. ports were less last year than they were in 1920 and in several years previous to that, despite the abnormal conditions that existed in 1922 through the railway strike across the border and the consequent increased demand for shipping.

"Furthermore, while admitting that grain can be more rapidly discharged from Fort William than it can be transferred at Port Colborne, Montreal and Quebec, the commission does not place its finger on the crux of the whole situation, and deal boldly with the lack of elevator storage at what may be described as 'the neck of the bottle.' Ten years ago the elevator accommodation at Fort William provided for the storage of 35,000,000 bush. of grain, while the elevators of the Georgian Bay ports had a capacity of 11,000,000 bush., at Port Colborne of 4,500,000, and at Montreal of 8,500,000. 'Since that time Fort William elevator capacity has been increased to 60,000,000 bush. in order to cope, in some measure, with the much heavier annual crop, but the elevator space at the Georgian Bay ports, at Port Colborne and at the neck of the bottle,—Montreal,—has not been increased by a bushel. True there is an elevator at Depot Harbor, belonging to the Dominion Government, but that has been leased to the Armour Co. of Chicago, for the handling of U.S. grain, and so cannot be taken into consideration as a means of aiding in the rapid handling of Canadian grown grain.

"Instead of dealing with this question the royal commission proposes that there should be a maximum rate fixed by a commission similar to the Board of Railway Commissioners, and that the coastal laws of the Dominion should be suspended by the Governor-in-council, when the commission so advises, in order to allow U.S. shipping, fully protected in its own coastal trading, to compete with Canadian ships in the coastal trade of the Great Lakes. Has a thought been given to what effect this will have on the Canadian inland merchant marine and on the shipbuilding industry of Canada?

"At present the U.S. ships are engaged throughout the summer, under the protection of their coastal regulations, in carrying coal and ore between U.S. ports.

As a rule they go into the grain carrying business only for one or two trips in the spring and in the late fall, when they carry grain from Fort William to Buffalo. The Canadian ships are practically barred from the coal and ore trade in the summer, except an occasional cargo from a U.S. to Canadian port. Consequently, their average earnings are less. And yet it is proposed to fix a maximum rate for Canadian ships during the spring and fall, and allow U.S. boats to enter into competition with them with no restrictions whatever. The advent of U.S. bottoms into the Dominion coastal trade would only make confusion worse confounded—the elevator capacity at Canadian ports is insufficient to handle the Canadian borne cargoes, with the addition of U.S. tonnage, and the delays in unloading would be greater, with a consequent increase in the rate to allow for demurrage.

Dominion Marine Association.

Honorary President, A. A. Wright, Vice President and Managing Director, Davie Shipbuilding and Repairing Co., Montreal and Toronto.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Ltd., Montreal.

First Vice President, G. J. Madden, George Hall Coal and Shipping Corporation Ltd., Ogdensburg, N.Y.

Second Vice President, A. E. Mathews, Mathews Steamship Co. Ltd., Toronto.

Executive Committee, The President, First and Second Vice Presidents; and W. E. Burke, Century Coal Co. and Canada Steamship Lines Ltd.; W. Crawford and Yvon Dupre, Sincennes-McNaughton Lines Ltd., Montreal; L. L. Henderson, formerly of Montreal Transportation Co., honorary member; W. J. McCormack, Algoma Central Steamship Lines, Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; C. H. Nicholson, Canada Atlantic Transit Co., and Canadian National Rys. Central Region Car Ferries, Toronto; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Toronto; John Waller, Keystone Transports Ltd., Montreal; Senator L. C. Webster, Webster Steamship Co. Ltd., Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

"If the shipping companies could fix a rate for transportation and have in their contracts a demurrage clause, the question of rates would be one easy of settlement, by an agreement between producers and carriers. But the grain shipper cannot do business with a demurrage clause. He has to quote an inclusive price for the shipment of grain he wishes to sell to the foreign buyer, and he will not take the risk of gambling on the amount of demurrage that may or may not have to be paid, owing to the lack of facilities for handling the grain at either the Georgian Bay ports, Port Colborne or Montreal. The facilities for handling grain at Buffalo are greater because of the rail connections that can be made with the U.S. sea ports, and if there is any question of demurrage the shipper will have his cargoes sent to Buffalo and thence to the seaboard instead of by the Canadian route.

"The practically unanimous testimony given before the royal commission that the suspension of the coastal regulations would mean the killing of the Canadian

shipbuilding industry cannot be swept aside by the assertion, made by counsel for the Government, that the shipbuilding business was at a standstill before the war. Practically all of the Upper Lake Canadian tonnage was built at Canadian yards prior to this period, and if there is no capital provided to replace these ships, when they become obsolete, it will not be long before there are no Canadian ships nor any Canadian shipyards. And capital will certainly not be attracted for Canadian built ships, sailing under Canadian registry, if there is no guarantee to the investor that his ships, when built, will be protected in their Canadian coastal trade, but will be subjected to the competition of U.S. ships, that are strongly protected in their own coastal trade and yet will have the full privileges of the Canadian coastal trade. The incentive to invest money in Canadian tonnage would disappear, Canadian boats would gradually disappear from the lakes, and the enormous grain harvest of Canada, valued at something like \$500,000,000 would be gradually diverted to U.S. lake ports, feeding U.S. railways and U.S. ocean tonnage, while the Canadian railways and the port of Montreal would cease to have their fair quota of the Canadian grown product. If this policy were carried out there would be no need of the Government considering any addition to the existing elevator space, it would be more than ample for the little grain that the Americans would send through the Canadian ports at either Port Colborne or Montreal.

"Any Canadian ship owner is entitled to a fair return on his investment—if, through reasons over which he has no control, his ships are delayed at the unloading points, with consequent loss of earnings, it is the duty of the Government, not to fix a maximum rate which takes no account of such delays, but to take such steps as are necessary to minimize the delays as much as possible and thus allow of greater average earnings and consequent cheaper rates. While the Government may, through the Board of Railway Commissioners fix railway freight rates, with more or less success, they would be undertaking an entirely different proposition in handling waterborne freight rates, for conditions are not only entirely different from a basic standpoint, but there are a hundred and one factors that have to be taken into consideration, from week to week, and almost day to day in calculating a fair rate for such a seasonal traffic as grain. The various owners of lake steamships may have conferred together with a view to protecting themselves last year against the decided disadvantage under which they were operating—due entirely to the congestion caused by the U.S. railway strike and the consequent long delays in unloading cargoes—but no evidence was submitted to the commission to enable them to declare that unfair rates were charged or unduly large profits secured.

"According to the Dominion Bureau of Statistics the average figure for Georgian Bay ports was, per 100 bush., \$4.13, for Port Colborne \$3.81, and for Buffalo \$4.49, while the rate from Fort William to Montreal by the all-water route was \$10.60. Those were for 1922, an abnormal year. In 1920 the Georgian Bay rate was \$4.17; Port Colborne \$4.57; Buffalo \$5.70; and Montreal \$11.04. In 1918 the Georgian Bay rate was \$4.32,

in 1917 it was \$4.25, and in 1916 the same as last year, \$4.13. The rate to Port Colborne was \$4.48 in 1918, \$4.18 in 1917, and \$3.89 in 1916, while the rates to Buffalo were \$5.70 in 1920, \$5.00 in 1917 and \$4.25 in 1916. The all-water rate to Montreal last year was \$10.60, in 1921 it was \$10.86, in 1919 it was \$10.76 and in 1918 it was \$11.39. It will thus be seen that the rates charged by Canadian ships to Port Colborne, under the protection of the coastal regulations, were much less than the U.S. rate to Buffalo, and it is safe to assume that the advent of U.S. shipping into the Canadian port-to-port trade would only make congestion worse and add to the cost of transporting the cargo.

"Another point that would have to be carefully considered in fixing a maximum rate would be the cost of operating different sizes of ships. The cost of operating a ship which could carry approximately 450,000 bush. is not three times the cost of one that can carry 150,000 bush., and if the maximum rate were fixed on the operating cost of the larger type of tonnage, it would naturally mean that those operating ships of a limited capacity would have to carry a larger proportion of operating cost and would soon be forced out of business. The Government ships now operating on the lakes are an example of the wide variation in operating cost. Two of these, carrying 100,000 bush. each, take 24 hours to unload at Port Colborne, whereas a ship specially built for the grain trade carrying 400,000 bush. can be unloaded in 20 hours. How can any commission fix a rate that would be fair in such a case? If a maximum rate is fixed, without a demurrage clause, which is not sufficient to take care of the cost of operation owing to congestion, the result would be that the ships would be tied up, and the Canadian grain crop, in place of moving east of Fort William, would congest west of Fort William and would not get out of the country, with disastrous results to the producers. The history of water transportation includes a number of attempts by governmental bodies to control freight rates on water transportation, but so far without success, and in the interests of everybody connected with the grain business, the producer, the shipper, and purchaser, and above all in the interests of the development of Canadian trade through Canadian channels, it would be better if the idea of fixing a maximum rate were discarded, the coastal regulations left to protect Canadian trade, and the Government devote its energies to increasing the facilities for the more rapid handling of grain at the Georgian Bay ports, Port Colborne, Montreal and Quebec, and reducing the terminal charges on the transfer or unloading of grain at these points, these being matters which are supposedly under the Government's control. If the Commission's recommendations were carried out, it would mean the sacrificing of Canadian capital, shipbuilding, shipbuilding and other industry for the benefit of the U.S. ship owners and ship builders."

La Cie de Transport de Fret de Gaspé Ltee. has been incorporated under the Quebec Companies Act, with \$20,000 authorized capital, and office at Quebec, Que., to own and operate ships, and carry on a general transportation business by water. The incorporators are,—Alphonse Gustave, Edmond, Arthur, Ulric and Alphonse Tremblay, Jr.

Dominion Marine Association's Activities.

The Dominion Marine Association's executive committee met in Toronto, June 5, and dealt with a number of matters relating to Great Lakes and St. Lawrence River navigation.

It was decided to urge the Dominion Government to intervene and ask for prompt measures to restrain the diversion of more than the permitted amount of water from the Great Lakes through the Chicago Drainage Canal. The diversion to the Gulf of Mexico of water which should reach the Gulf of St. Lawrence has already had a serious effect upon lake levels, with corresponding effect on the carrying capacity of ships, which may lose from 35 to 75 tons for each inch of draft. The treaty of 1910 placed the users of water in the order of, sanitation, navigation, and power. Chicago is using a wasteful method of sanitation, by dilution and flushing. The Association wants the diversion limited to 4187 cu. ft. a second, as authorized at Washington in 1912 and greatly exceeded in practice.

Permission will be sought for steamships to carry through the Welland Canal at a slightly greater draft than 14 ft. Their construction is sufficiently rigid to prevent "hogging" and if 14 ft. 4 in. is available, it should be utilized.

The dangerous upper entrance of the Morrisburg Canal should be improved, without more delay, either by extending the south bank upstream, or moving the lock farther down the canal. Representations will be made to the Railways and Canals Department that as the larger scheme of development of the river is being deferred, a small expenditure should be made to prevent the constant repetitions of disasters.

The Association will join with the Shipping Federation of Canada, representing ocean tonnage, in asking for abolition of the compulsory payment of pilotage dues on the St. Lawrence below Montreal. Legislation will be sought at the next session of parliament to remove this tax which serves no necessary purpose. Pilotage is not compulsory.

The committee appointed to interview authorities at Ottawa regarding steamboat inspection rules and fees presented a long report, and was continued. It will compile further data for action at the next meeting.

The official closing of the Sault Ste. Marie Canal on Dec. 14 was agreed to, and the Dominion Government will be asked to consider contracting for ice breaking on the St. Mary River, with due regard to the opening and closing of navigation, artificial or otherwise, at Fort William.

Representations are to be made to the Montreal Harbor Commission as to the urgent need of improvements in conditions at that port, with reference to lake ships. The Grand Trunk Ry. elevator is doing very little to help discharge lake cargoes. Up to June 4 only 6 ships had been unloaded at that house. Even at the Commission's elevators 1 and 2, cars are engaging a great deal of attention at the expense of water borne traffic, conditions being worse than last year, when lake ships suffered so much through lack of dispatch. Complaint will also be made to the Commission concerning the very excessive charges for shoveling grain, which result in excessive profits to the Commission, and with reference also to the extremely un-

satisfactory service given both in the matter of delays and overtime charges.

Beyond offering its assistance, the Association did not, as an organization, take any part in the hearings of the royal commission on grain freight rates, as the question of rates does not come within the scope of its constitution or duties; but as two of the commission's recommendations involve points in which the Association is very deeply interested and upon which it has repeatedly declared itself, it was resolved to protest to the Dominion Government against any interference with the coasting laws, even to the extent of giving power to the cabinet to suspend them in whole, or in part, unless similar action is taken by the United States Government. The Association would welcome reciprocity in coasting, and would be well content with the resulting increased competition, but it continues to protest emphatically against anything so unjust and destructive of stability as the one sided arrangement recommended. It was also resolved to point out that the fixing of a maximum rate proposed by the commission is impracticable, for many reasons, all of which were successfully advanced by the Association at successive sessions of Parliament, in opposition to the Armstrong bill designed to place all ships under the Board of Railway Commissioners, prominent among which are the facts that the life of the bulk freight business throughout the world is freedom of competition, and ability to meet changing conditions on the instant; that if ever a commission succeeds in fixing a maximum rate fairly, that maximum will naturally become the rate, that booking will consequently be affected, adversely to the shipper, who, himself, wishes to be free, and that with a fixed rate a demurrage clause in the contract, such as the Association has always advocated, will be necessary, in order to provide protection against loss of dispatch such as was suffered by the ship owners in 1922, and that the shipper has always consistently opposed any move for a demurrage clause, and will presumably do so again.

Welland Canal Navigation Notices.—

Until further notice, no ships will be allowed to enter and pass down the Welland Canal, drawing more than 14½ ft. of water, and no ship will be allowed to enter and pass up the Welland Canal, drawing more than 14 ft. The minimum clearance is only about 12 in. between the face of the walling and the steel work of the new single track swing bridge, carrying the Canadian National Rys. Welland Division tracks over the canal immediately below lock 25, south of Thorold. Ships bound both up and down, must exercise the greatest possible caution when passing through the draw of this bridge, and, in order not to strike the bridge members, all ships must have nothing extending beyond her sides nor any list. Upbound ships, in particular, must proceed at slow speed and be exceedingly careful to enter the draw in parallel alignment with the axis of the open bridge.

Mowat Towing Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$75,000 authorized capital, and office at Vancouver, to own and operate ships, and also carry on towing business.

Canadian Government Merchant Marine Operations, Etc.

Appointment.—C. K. James, of the C.G.M.M. head office, has been appointed acting Purchasing Agent at Montreal, consequent on the appointment of J. W. Corbett, formerly Purchasing Agent, C.G.M.M., as Assistant Purchasing Agent, Canadian National Rys., Toronto.

Officers of Steamships.—The following appointments and changes of captains have been made since those mentioned in our last issue:—Canadian Beaver, A. E. Seamen; Canadian Carrier, W. B. Armit; Canadian Farmer, J. McKernon; Canadian Sailor, O. C. Percival; Canadian Traveller, W. G. McConechy; Sheba, H. J. Hubley. The following chief engineers have also been appointed: Canadian Beaver, W. R. Jones; Canadian Logger, C. Underwood; Canadian Trader, G. Dennison.

The s.s. Canadian Explorer, which ran aground in the St. Lawrence River, near Vercheres, Que., June 2, after sailing from Montreal for Cardiff, was refloated the same day, without damage, after about 450 tons of grain had been lightered. She returned to Montreal to reload her cargo, and resumed her voyage the following day. The master, Capt. W. Wyman, stated that, shortly after leaving port, he found that progress was impossible, on account of the dense smoke from forest fires, and when near Vercheres he decided to anchor, and in doing so, grounded on the south side of the channel.

The barquentine S. F. Tolmie, which arrived at Victoria, recently, from the southern Pacific, reported a considerable amount of damage due to heavy weather. Some repairs were made at Honolulu, and complete repairs will probably be done at Victoria. Among the repairs required are new topgallant mast, yards, sails, rigging and some repairs to the hull. Tenders will be received to July 2, for the purchase of this ship, as she lies at Victoria, B.C., where she may be inspected. She was built in 1921 at the Cholberg shipyard, by Victoria (B.C.) Shipowners Ltd., under special aid from the Dominion Government, and was taken over and completed by the Government, on the bankruptcy of the building company, and handed over to the Canadian Government Merchant Marine for operation. She has since made two trips, one to Japan, and one to Australia, on which latter trip, she suffered considerable damage in heavy storms. Her dimensions

are,—length 235 ft., breadth 45 ft., depth of hold 19.9 ft.; tonnage 1,612 gross, 1,497 net.

Cattle Shipments to Great Britain.—It is announced that, as a result of negotiations with the Dominion Agriculture and Marine Departments, six C.G.M.M. ships will be fitted to carry cattle to Great Britain. As they were not designed for this traffic, the cost of completely fitting them would be prohibitive, so they will only be partially equipped, to carry 208 cattle each, the cost of such equipment, being comparatively small. Wooden stalls will be fitted on the fore and aft decks, under the Marine Department's approval. It is said that the service will be given during July, August, and September, when weather conditions are at their best and that shipments will be made from Quebec, as well as from Montreal, the Quebec Harbor Commissioners having on short notice, provided special cattle shipping facilities.

Montreal Sailings.—

London and Antwerp service;—Canadian Challenger, July 4; Canadian Planter, July 18; Canadian Commander, Aug. 1; Canadian Conqueror, Aug. 15; Canadian Challenger, Aug. 29.

Cardiff and Swansea service;—Canadian Victor, July 4; Canadian Mariner, July 13; Canadian Explorer, July 27; Canadian Leader, Aug. 10; Canadian Victor, Aug. 24.

St. Kitts, Antigua, Barbados, Trinidad and Demerara service;—Canadian Carrier, July 11; Canadian Otter, July 25.

Hamilton, Nassau, Kingston, Belize service;—Canadian Fisher, July 6; Canadian Forester, July 27; Canadian Fisher, Aug. 17.

St. John's, Nfld., via Charlottetown, P.E.I. service;—Canadian Sapper, July 17.

Australia and New Zealand service;—Canadian Constructor, July 28.

Vancouver, B.C. Sailings.—

Australasian service;—Canadian Importer, July 30, for Sydney and Melbourne; Canadian Scottish, Aug. 25 for Auckland and Sydney; Canadian Traveller, Sept. 15 for Melbourne and Adelaide.

Oriental service;—Canadian Highlander, July 15; Canadian Freighter, Aug.

10; Canadian Skirmisher, Sept. 10, for Yokohama, Kobe and Shanghai.

Indian service;—Canadian Britisher, Aug. 10, for Bombay.

Coastal service, Vancouver to San Francisco;—Canadian Observer, July 1; Canadian Volunteer, July 8; Canadian Rover, July 15.

Montreal Ship Checkers' and Coopers' Wage Dispute.

A board of conciliation, consisting of E. McG. Quirk, chairman; Bernard Rose, named by the Labor Department to represent the employers, who refused to name anyone, and J. G. O'Donoghue, K.C. on behalf of the men, appointed under the Industrial Disputes Investigation Act, to enquire into differences between the Shipping Federation of Canada, Canadian Pacific Steamships Ltd. and certain checkers and coopers, members of the Brotherhood of Railway, Steamship Clerks Freight Handlers, Express and Station Employees, reported June 1, that every effort had been made to get the parties to meet and effect an adjustment, but no settlement could be reached that was mutually satisfactory. The employers' position is, that owing to conditions prevailing, the low rates paid for freight, and business being carried on at a loss during the past two seasons, they cannot afford to pay more than they are doing. The board reported that it found itself in a quandary, owing to the fact, that it ascertained that checkers employed on the wharves by railways, are paid at a rate even higher than that which the employees are demanding from the shipping interests. It therefore reported as being unanimously of the opinion, without going further into the merits of the matter, that the employees are entitled to consideration in the matter of an increase. We are advised that the employers have decided not to accept the board's suggestion, owing to the unsatisfactory condition of the shipping industry.

Pacific Navigation Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$50,000 authorized capital, and office at Vancouver, to own and operate ships, and carry on a general transportation and navigation business.

Ships Registered in Canada in March, 1923.

In compiling the following lists of ships registered, steamboats and motorboats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, n.h.p. etc.	Owner or Managing Owner	
138862	Joe Smith.....	Port Arthur, Ont.....	Superior, Mich.....	1907	82.0	20.0	10.6	145	76	34 Sc.	G. H. Fineout, Port Arthur, Ont.
150873	Robert Preston.....	N. Westminster, B.C.	New Westminster, B.C.	1923	99.8	24.0	14.1	286	....	52 Sc.	N. R. Preston, N. Westminster, B.C.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
150415	Alsation.....	Lunenburg, N.S.....	Schr....	Chester Basin, N.S.....1923	116.4	26.8	10.4	137	92	Alsation Fishing Co., Lunenburg, N.S.
150922	C.P.R. Barge No. 10....	Vancouver, B.C.....	Barge.....	Nelson, B.C.....1922	222.7	42.0	7.0	562	562	C.P.R. Co., Montreal.
150874	E.R.G. No. 1.....	N. Westminster, B.C.	"	New Westminster, B.C.....1923	89.9	32.2	8.2	201	201	E. R. Gilley, New Westminster, B.C.
150775	F. & F. No. 2.....	Vancouver, B.C.....	Scow.....	North Vancouver, B.C.....1922	90.4	30.0	8.0	183	183	G. H. French, Vancouver, B.C.
150925	G. of G. No. 10.....	"	"	" "						

Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties:—

Stranding of the s.s. Gyp.

Held at Halifax, N.S., May 23, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. Neil Hall and F. H. Lardner, as nautical assessors, into the strandings of the British s.s. Gyp at Port Medway, N.S., on April 19 and 23, when she received material damage to her hull on the second occasion. The evidence of Capt. G. W. Wood, master of the Gyp, showed that she left Port Medway wharf, for Rouen, with a full cargo of pulpwood, and when at about $\frac{3}{4}$ mile off, a buoy being seen on the starboard side, the pilot, whom he had been specially instructed to employ, and no one else, gave the order to port, which was obeyed immediately. The ship was moving very slowly, and another buoy was reported ahead, and the third officer, who was at the wheel, was told to steer between the two buoys, the ship grounding in soft mud. There were two pilots on the bridge, but only one gave orders, and as soon as the ship was found in a dilemma, they pulled ashore and never offered help, suggestion or excuse. After several days, during which several efforts were made to refloat the ship, and the discharging of some 200 tons of the cargo, she floated off uninjured, and reloaded her cargo at the wharf. On the occasion of the second stranding, the two pilots were again on board, and on nearing the last buoy in the channel, the order hard to starboard was given, and the ship grounded after several shocks. Soundings were taken, and water was found in holds 1 and 2. She was refloated with the assistance of tugs. The pilots left the ship immediately after she grounded, without offering assistance or suggestion. In view of the incomplete evidence, and the absence of the self styled pilot, the officers' certificates were returned.

The court pointed out that the master was a stranger in the neighborhood, not provided with the necessary local chart, and relied on the strong recommendation of his agent as to the efficiency of the pilot, and, in connection with the first grounding, there being so little time between the pilot's order and the grounding, for a decision to be arrived at as to the desirability of countermanding the order, the master was exonerated. The second grounding was attributed solely to the pilot's carelessness, and the court stated that on both occasions the pilot, or pilots, showed unjustifiable carelessness in placing the ship in such a dilemma, and indifference in leaving the master without help or suggestion. The master, though exonerated, was cautioned that, in the future, when obliged to employ, upon outside recommendation, any local assistance, to bear in mind that it is his duty to scrutinize and question the orders given by local pilots unrecognized by any competent authority. Moreover, he should have secured, at St. John, or Digby, a chart of larger scale than the one he had, which was of no use for practical purposes, but on this point, the court expressed the opinion that as he had a letter from his agent with the recommendation to employ no one else but the party whose name was mentioned, he felt the purchase of a chart unnecessary. The

pilot, named Mathers, of Halifax, recommended by the agent, does not hold a license as a pilot, but the other man claimed to have a pilot's license, though he did not produce it, and as the pilotage commission for the district has ceased to exist, such a license cannot be valid. The court suggested that if ships are to frequent such harbors it would be well to have some supervision over men directed to pilot them, the statement that such men hold a pilot's license, unrecognized by the Government, may lead agents and masters into grave errors. It was stated in evidence that the buoys were weather worn, and could scarcely be recognized, and the court stated that it understood that the contract for the laying of the buoys in the spring, when the ice has gone, calls for the placing of them in their proper positions, and bearing their distinctive signs, i.e., painted the color indicating the edges of the channel. It was also stated that the port buoy was only 2 ft. above the surface, and therefore could not be seen readily. The court recommended that, if this is the case, the spars used for marking channels be placed at least 6 ft. above the water.

United States Merchant Marine Affairs.

The U.S. Shipping Board received an offer, at the end of May, of \$1,051,000, from Columbia Postal Supply Co., Silver Creek, N.Y., for all its ships, active and inactive, and all its other property, real, personal and mixed. The offer was subject to acceptance up to July 1, and a bond of \$1,000,000 was offered as a guarantee for the signing of the contract if awarded. The offer provided for payment of \$51,000,000 on Oct. 1, and \$50,000,000 annually, in quarterly payments, with interest on deferred payments at 4½%, the Board to have the right to extend payments of principal or interest, such extensions to be at 5% interest. The company offered to agree to operate the present lines with at least as good service as rendered by the Shipping Board during the entire life of the agreement, the Board to have the right to repossess the property at any time there might be default in any payment of principal or interest. The offer was not considered seriously, the chairman of the Board having made the following statement: "Not one cent accompanied the offer. The \$1,000,000 guaranteed to be paid down represents one-tenth of 1%, down payment, and it is asked that we hold all our property intact and do nothing until next October, when \$50,000,000, or 5% of the purchase price, will be paid. While, of course, the Board

would like to sell its fleet for \$1,000,000,000, it should be said in passing that that amount is several times the highest inventory value of the fleet the Government owns, based on present world market prices, since this inventoried value does not exceed \$300,000,000."

It was announced later that the bid for the ships had "exploded," the President of the company being reported as having stated that he had no intention of paying that sum for the ships, but that he might pay \$250,000,000, and was going ahead with his plans to get a bond.

Canadian Navigation Claims Against Germany.

Under the treaty of peace between the allied and associated powers and Germany, Hon. Wm. Pugsley, K.C., formerly Lieutenant-Governor of New Brunswick, has been appointed a royal commissioner, under the Inquiries Act, to investigate all claims for reparation, and to report, to the Government. In all, 837 claims have been made, the commissioner being empowered to deal only with civilian claims. Sittings have been held at Ottawa and Montreal, and a number of claims have been heard, the sittings mentioned dealing at present with local claims only. The German Consul was notified of the hearings, but was not represented. The largest claims up to the present, are Canada Steamship Lines Ltd., \$3,651,639.38, and Battle Line Steamship Co. Ltd., \$3,400,000. Considerable evidence has been taken on the first claim, but the second one has been adjourned to September. Numerous claims of a more or less minor nature have also been heard, and on the adjournment, June 19, it was stated that 62 claims, involving about \$6,000,000 had been accepted for consideration. Canada Steamship Lines' claim is for the loss of 11 steamships, as follows,—

Name	Date lost	Value	War risk insurance received
Midland Queen	Aug. 4, 1915	\$560,000	\$162,546
Empress of Fort William	Feb. 27, 1916	760,000	194,666.65
Empress of Midland	March 27, 1916	760,000	194,666.65
Dundee	Jan. 31, 1917	580,000	305,955.57
Strathcona	Apr. 13, 1917	540,000	294,433.33
Neepawaw	Aug. 2, 1917	432,000	321,200.
C. A. Jacques	May 1, 1917	630,000	364,999.99
D. A. Gordon	Dec. 13, 1917	660,000	255,350.50
Armonia	March 15, 1918	1,490,000	1,010,681.33
Tagona	May 16, 1918	550,000	485,900
Acadian	Sept. 16, 1918	669,000	388,960
		<u>\$7,631,000</u>	<u>\$3,979,360.02</u>

The Battle Line Steamship Co's claims is for the internment of two ships by German enemy during the war.

Ships Added to and Deducted from the Canadian Register During March, 1923.

	Steam.—Tonnage—			Sailing.—Tonnage—		
	No.	Gross	Net	No.	Gross	Net
Added.						
Built in British Possessions.....	7	323	39	8	1,661	1,570
Purchased from foreigners.....	2	170	99	.....	.....	.....
Registered anew.....	1	33	29	.....	.....	.....
Other ships.....	1	13	9	1	11	11
Totals.....	11	539	176	9	1,672	1,581
Deducted.						
Wrecked or otherwise lost.....	5	2,620	1,604	7	957	838
Broken up or unfit for use.....	10	4,642	2,764	8	899	895
Sold to foreigners.....	1	2,251	1,353	.....	.....	.....
Registered anew.....	1	148	121	.....	.....	.....
Other ships.....	1	13	9	.....	.....	.....
Totals.....	18	9,674	5,849	15	1,856	1,733

Atlantic and Pacific Oceans.

The Gulf of St. Lawrence was finally reported to be clear of ice, June 7, after a season of unprecedented conditions.

The Danish s.s. Maersk, in endeavoring to force a passage through ice off Anticosti Island, at the end of May, sustained extensive damage to her propeller and had to be towed to Gaspé by the C.G.S. Montcalm.

The Ratchitch Steamship Co., Dubronivik, Jugo-Slavia, is reported to be arranging for the establishment of a service between Serbia and St. Lawrence ports. The company's s.s. Marija Ratchitch, which arrived at Montreal recently, took grain for Western Italy.

The White Star-Dominion Line's s.s. Doric arrived at Quebec, June 18, on her maiden trip from Great Britain, and proceeded to Montreal, where she arrived the following day. She is 16,600 gross tons, and is said to be the largest ship to enter the port. She was open for public inspection, June 20, and on June 21, a luncheon was given to a number of ticket agents from large points.

The C.P.R. s.s. Empress of Canada, which arrived at Victoria, B.C., June 17, from Yokohama, Japan, in 8 days, 10 hrs., 53 min., made a new record, and broke the record of the company's s.s. Empress of Russia, of 8 days, 16 hrs., 31 min., which has stood since 1914. The average speed between Yokohama and Vancouver Island, was 20.6 knots.

The Head Line s.s. Torr Head arrived at Montreal at the end of May from Belfast, Ireland, on her maiden trip. She was built at Belfast and has a d.w. tonnage of approximately 8,000, and is named after the old s.s. Torr Head, which operated on the St. Lawrence route for several years, and was torpedoed during the war. In addition to her cargo capacity she is fitted with accommodation for 16 first class passengers.

A direct steamship service between Montreal and Central American ports is announced for early July, with the sailing of a 7,000 ton steamship by the Aube Steamship Co., under the management of Mapes and Ferdon, Montreal. It is stated that a round trip, calling at the principal ports of Mexico, Colombia and Venezuela, will be made, in 60 days, to ascertain the possibility of developing sufficient trade to warrant a permanent service.

The Donaldson Line s.s. Coracera arrived at Montreal at the end of May on her maiden trip. She was built at Glasgow, Scotland, has a d.w. tonnage of 8,950, and has been specially built for carrying frozen and chilled meats, etc., every hold being fitted so that the temperature can be maintained at 5° below zero F. She is equipped with reciprocating engines, and uses oil fuel, maintaining a speed of about 13 knots on a consumption of 329 tons of oil. She is running between Liverpool and Montreal.

It is reported from Victoria, B.C., that an intercoastal service between Victoria, Vancouver and Montreal, via the Panama Canal, will be established shortly, with the steamships Margaret Coughlan, City of Victoria and City of Vancouver, operating via the Panama Canal. The s.s. Margaret Coughlan has already made trips from the Pacific Coast to Montreal, chiefly with lumber for the Montreal Harbor Commissioners' use.

Maritime Provinces and Newfoundland.

The s.s. Stellenwerf, owned by H. L. Thorne, St. John, N.B., has had her name changed to Bo Peep.

The Commercial Cable Co.'s new cable steamship Marie Louise Mackay, arrived at Halifax, N.S., June 11, from Plymouth, Eng. On the voyage out, she made soundings between the Azores and Halifax, in preparation for the laying of an additional trans-Atlantic cable.

The Clarke Steamship Co. is reported to be contemplating the extension of its north shore steamship service to Newfoundland. D. A. Clarke, President, visited various ports along the route on the s.s. Gaspesia, recently, and continued to Newfoundland, to examine the possibilities of such an extension.

The C.P.R. s.s. Marvale, which was wrecked off Cape Freels, Nfld., May 21, broke up on June 11, while salvage operations were being conducted. It is stated that the mails and three safes containing cash and valuables, from the purser's office, and the ship's log, manifests and other papers were salvaged.

Imperial Oil Ltd. tank s.s. Imperoyal, while proceeding from Montreal to Halifax empty, ran ashore on Grimes Rock, near Canso, N.S., June 15. She was refloated later in the day and is stated to have been badly damaged. She proceeded to Halifax, under her own steam, accompanied by the C.G.S. Arras.

The Newfoundland Shipping and Trading Co. has been formed to operate a steamship service between St. John's and Montreal, and between St. John's and Labrador, and will, it is said operate three ships. The s.s. Mons sailed from Montreal recently on the first trip to St. John's direct, and on subsequent trips, calls will be made at Charlottetown, P.E.I.

A St. John's, Nfld., press dispatch states that, as the result of the recent general elections, several changes have been made in the Government, that Hon. Walter Cave, formerly Minister of Shipping, has been appointed Minister of Finance, and that the Shipping Department is to be abolished, and its work transferred to a bureau under the Marine and Fisheries Department.

The Maritime Wrecking and Salvage Co.'s s.s. Maggie Marshall, which was wrecked at Cape Hogan, near Halifax, recently, is a total loss, having had her back broken and her stern post lost. She was built at Manistee, Mich., in 1873, and was screw driven by engine of 54 h.p. Her dimensions were,—length 150 ft., breadth 30 ft., depth 11.3 ft., tonnage 572 gross, 385 net. She was fully equipped with pumps and machinery, and was a most efficient wrecking and salvaging ship.

The Intercolonial Navigation Co. has commenced a fortnightly steamship service with the s.s. Advance, between Boston, Mass., Halifax, N.S., and St. John's, Nfld., and, during July, it will put the s.s. Alliance on a semi weekly service between Boston and Halifax. These steamships were owned formerly by Panama Canal Ry. Co., and ran between New York and Colon. The Intercolonial Navigation Co. was incorporated recently of Maine, U.S.A., with an authorized capital of \$500,000 and R. H. Brann, as President.

Province of Quebec.

The Montreal Harbor Commissioners' machine and carpenter shops on the Mackay pier were destroyed by fire towards the end of May, the damage being estimated at \$175,000.

The Bay Line Steamship Co.'s s.s. Oakbay, formerly the French s.s. Marineur, underwent temporary repairs at Montreal, recently, following an accident when her stem was bent and 12 plates damaged.

The Marine Department's s.s. Eureka was offered for sale by tender, to June 20, as she lay at Sorel, Que. She was built at Glasgow, Scotland in 1893, her dimensions being, length 94.7 ft., breadth 22 ft., depth of hold 11.9 ft., tonnage, 170 gross, 70 net.

The Dominion Public Works Department is continuing the dredging of the north channel at the Island of Orleans, in the St. Lawrence River, which was suspended during the winter. It is anticipated that the work will be continued through several seasons, so that the passage may be used by ships of a large type.

Canada Steamship Lines' s.s. Richelieu sailed from Montreal, June 9, on a preliminary trip to Quebec, prior to being placed in the regular tourist service between Montreal and the Saguenay. As she left the pier at Montreal, she was christened by Mrs. J. W. Norcross, wife of the Vice President and Managing Director. The party on board consisted of about 400 business men, who were accompanied by W. H. Coverdale, President of the company. Her dimensions are, length overall 332 ft., breadth over guard 66 ft., depth moulded 21½ ft., draft 15½ ft. The planning of the passenger accommodation allows for 220 outside rooms, and permits, besides the ordinary outside type rooms, parlors with twin beds facilities, staterooms with double lower and single upper berths built in echelon, verandah rooms, etc., from which the scenery may be viewed without having to go out on deck, and offering privacy for those who desire it.

The contract for the operation of the ferry service between Quebec and Lévis, was offered at auction at Quebec, May 30, at the upset price of \$4,000, and was immediately knocked down to Lévis Ferry Ltd. for \$4,001. No other bid was made, although the Quebec and Lévis Ferry Co. which had been negotiating for the contract, had deposited \$50,000 as a guarantee. The contract is for 15 years, similar to the one at present in force, which does not expire until April 30, 1925. It is provided in the new contract that the boats used will have to give more accommodation than at present, but the present boats may be used, provided they are altered to suit the conditions laid down. Some changes in rates for passengers and automobiles are provided for in the new agreement. The Lévis Ferry Co.'s annual meeting was held June 5. Following are the directors for the current year,—G. E. Tanguay, President; H. A. Galipeault, K.C., Vice President; J. Demers, G. Cote, J. Gosselin, J. Carrier and M. Dion.

Vancouver Grain Shipments.—During April, 1,554,099 bush. of wheat were shipped by ocean steamships from the Dominion Government elevator at Vancouver, B.C., in 18 ships, of which 9, with 1,076,966 bush., were for United Kingdom ports, and 9, with 477,133 bush., for Japanese ports.

Ontario and the Great Lakes.

The Chicago, Duluth and Georgian Bay Transit Co's steamships North America and South America, which have been converted into oil burners, have been replaced in service.

The Lake Superior Paper Co. is reported to have bought the steam tug Gargantua, to replace the steam tug Reliance, which was lost on Lake Superior at the end of 1922. The Gargantua's dimensions are, length 150 ft., breadth 30 ft., depth 17 ft. She was overhauled by Toronto Dry Dock Co. recently.

The Great Lakes Transportation Co's s.s. Matoa, which was cut in two at Montreal, recently, for passage through the canals, is being rejoined, and lengthened by 36 ft., by Collingwood Shipbuilding Co., Collingwood. The s.s. George E. Hartnell which was rebuilt and remodelled recently by Midland Shipbuilding Co., Midland, is operating between Midland and Fort William.

The United States Lake Survey reports the stages of the Great Lakes for May in feet above mean sea level as follows:—Superior, 601.65; Michigan and Huron, 579.60; St. Clair, 574.55; Erie, 571.87; Ontario, 245.62. Compared with the average May levels for the past 10 years, Superior was 0.49 ft. below; Michigan and Huron, 1.13 ft. below; Erie, 0.97 ft. below; Ontario, 1.07 ft. below.

The Montreal Transportation Co., a subsidiary of Canada Steamship Lines Ltd., has appealed against the Exchequer Court's judgment in connection with the loss of the barge Quebec, as a result of an explosion at the Dominion Government grain elevator at Port Colborne. The company failed in its claim for \$125,000, it being held that the government and its employees were not responsible for the damage.

The George Hall Coal and Shipping Corporation's s.s. James W. Follette which was badly damaged recently in a storm on Lake Ontario, is lying at Ogdensburg, N.Y., and will, it is said, be dismantled and broken up. She was built at Gibraltar, Mich in 1881 and was originally named Jesse H. Farewell. She has an oak hull of the following dimensions,—length b.p. 212 ft., breadth moulded 35 ft., depth moulded 12 ft. She is equipped with fore and aft compound engine, with cylinders 27 and 44

in. diar. by 40 in. stroke. 600 i.h.p., supplied with steam by a firebox boiler 10 ft. diar. by 16 ft. long at 125 lb.

Canada Steamship Lines Ltd. contemplates building a steamship for its Toronto-Niagara service, and we are officially advised that plans and specifications are being prepared by A. Angstrom, naval architect, Toronto, for a ship to carry approximately 4,000 passengers. It is expected that the plans will be ready by Sept. 1, when tenders will be invited for the ship's construction, with the intention of having it ready for service in 1924. A few years ago the company considered the building of an additional ship for its Toronto-Niagara service, and plans were drawn by Mr. Angstrom, but work was not proceeded with on account of general business conditions. The plans for the new ship will not be the same as those prepared a few years ago.

Manitoba, Saskatchewan, Alberta and Northwest Territories.

The Hudson's Bay Co's steamboat Athabasca River, arrived at Fitzgerald, May 22, from Waterways.

The Alberta and Arctic Transportation Co's steamboat Slave River was the first to get through to Chipewyan, Lake Athabasca, this season. She was held for 5 days in ice at the mouth of the Athabasca River.

British Columbia and Pacific Coast.

The Union Steamship Co. of British Columbia is preparing plans for a new steamship for its Howe Sound service, and expects to place the contract for its construction in sufficient time to have the ship ready for next year's work.

The Union Steamship Co. of British Columbia's s.s. Cardena, built recently at Glasgow, Scotland, for the company's coastal service, arrived at Vancouver, June 11, having averaged a little more than 14 knots an hour, on the voyage out.

The Grand Trunk Pacific Coast Steamship Co. commenced its summer service three times a week with the steamships Prince Rupert and Prince George, between Vancouver and Prince Rupert, early in June. The s.s. Prince Albert is running on her summer schedule between

Vancouver and Prince Rupert via Queen Charlotte Islands.

The Hudson's Bay Co's auxiliary powered schooner Lady Kindersley sailed from Vancouver, June 6, on her annual trip to the Arctic. Last year she was unable to reach Coronation Gulf, on account of the ice conditions, and had to put in at Herschell Island. The waters between Herschell Island and Coronation Gulf are only open for about six weeks between July 31 and Sept. 10.

The C.P.R., as owner of the s.s. Princess Beatrice, has entered action in the Admiralty Court at Vancouver, against the s.s. Camosun, owned by Union Steamship Co. of British Columbia, for approximately \$15,000, cost of repairing the Princess Beatrice, which was damaged recently, when the two ships were in collision. At the wreck commissioner's enquiry, both ships were found equally to blame.

The automobile ferry traffic with Vancouver Island is assuming very considerable proportions, the building and placing in operation of the C.P.R. Motor Princess between Sidney, B.C., and Bellingham, Wash., having stimulated this class of tourist traffic. The service given by the Victoria-Anacortes Ferry Co., with the ferry City of Angeles, between Sidney and Anacortes, Wash., is to be augmented by the addition of the ferry Robert Bridges, which is to be renamed Mount Vernon.

Canal Statistics.

The Dominion Bureau of Statistics, Transportation Branch, has issued the following summary for May:—

Sault Ste. Marie.—Canadian and U.S. locks opened for traffic on May 1, a fortnight later than in 1922. Ship tonnage increased over 100% compared with corresponding month last year. Total freight tonnage for May was 10,646,241 tons, an increase of 7,330,786 over 1922. The two chief factors in the increase were the large shipments of coal and iron ore. Shipments of Canadian grain from Fort William and Port Arthur for May were as follows, in bushels: Wheat, 27,049,987; oats, 4,209,591; barley, 954,469; flax, 50,530; rye, 257,904; a total of 32,522,481, of which 22,804,802 were shipped in Canadian bottoms and 9,717,679 in U.S. bottoms. Of the total Canadian grain from Fort William and Port Arthur, 9,429,323 bush. were destined to U.S. ports.

Welland.—Both ships and freight tonnage decreased from May, 1922, the former, 54,043 tons, and the latter, 38,449. The greatest decline was in corn, 119,954 tons, and the largest increase in wheat, 75,416 tons. Soft coal increased 56,576 tons.

St. Lawrence.—Ship tonnage decreased 3,082 tons, and freight fell off 38,154 tons. The decrease and the increases were similar to those on the Welland Canal.

The Ontario Car Ferry Co's annual meeting was held at Montreal, May 29. Following are the directors for the current year,—Sir Henry Thornton, President, Canadian National Rys., President; W. T. Noonan, President, Buffalo, Rochester & Pittsburgh Ry., Vice President; S. J. Hungerford and J. E. Dalrymple, Vice Presidents, Canadian National Rys., E. A. Neil and O'Donnell Iselin. R. P. Ormsby is Secretary; J. A. Yates, Treasurer, and C. H. Nicholson, Manager.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during May.

Articles	Canadian Canal	U.S. Canal	Total
Lumber	2,327	6,255	8,582
Flour	656,720	385,520	1,042,240
Wheat	3,816,736	33,238,085	37,054,821
Grain, other than wheat.....	2,304,519	7,486,022	9,790,541
Copper	1,890	6,360	8,250
Iron Ore .....	.....	6,081,285	6,081,285
Pig Iron .....	.....	.....	.....
Stone	250	200	450
General Merchandise.....	818	2,090	2,908
Passengers	419	3	422
Coal, Soft	19,045	2,603,312	2,622,357
Coal, Hard	2,100	239,360	241,460
Iron Ore .....	.....	12,779	12,779
Manufactured Iron and Steel..	3,348	8,564	11,912
Salt	2,831	9,851	12,682
Oil .....	.....	10,414	10,414
Stone	75	107,441	107,516
General Merchandise.....	35,560	46,998	82,558
Passengers	346	19	365
Summary			
Vessel Passages	441	1,949	2,390
Registered Tonnage	830,003	7,097,520	7,927,523
Freight—Eastbound	231,136	7,312,461	7,543,597
Westbound	62,959	3,038,719	3,101,678
Total Freight	294,095	10,351,180	10,645,275
All canals opened May 1.			

Ship for Arctic Development Work.

In order that the Interior Department may continue its Arctic development work, through its Northwest Territories and Yukon Branch, the s.s. *St. Finbarr* has been bought from the British Admiralty, and will be renamed *Franklin*, in honor of Sir John Franklin, the Arctic explorer. The *St. Finbarr* is one of a class of ship, known as rescue tugs, and was built at Paisley, Scotland, in 1919. She has a steel hull, her dimensions being: length 135.7 ft., breadth 29 ft., depth 13.6 ft.; tonnage, 468 gross, 20 net. She is equipped with triple expansion engines, 1,200 h.p., furnished with steam by 2 Scotch boilers, for a speed of from 12 to 13 knots. Some alterations will be necessary to fit her for Arctic work, including a rubbing plate on her sides as a protection against ice, and she will be given greater internal strength, by the use of transverse beams and special bracing. Protection will be given to her rudder, while backing, by a special apron, and, to conserve coal when running with a fair wind, she will be equipped with spars and light sails. Later, her accommodation will be increased so that she may carry, in addition to her officers and crew, police, Justice Department officials and Government technical officers, who may require to visit the northern islands. It is anticipated that it will be possible to establish, this year, additional Royal Canadian Mounted Police posts, at Cumberland Gulf on Baffin Island, at Cape Sabine, or near there, on Ellesmere Island, and on Lancaster Sound. Other posts established last year will be visited, and a judicial party will be taken to Ponds Inlet to try Eskimos charged with the murder of a trader in 1921.

The ship has been lying at Portland, England, for about a year, and will be in charge of Capt. J. E. Bernier, with A. Theriault as chief engineer, who held similar positions in the s.s. *Arctic*, and who have gone to England to bring the ship across.

A London, Eng. dispatch of June 18, stated that Capt. Bernier, who was there to take over the s.s. *St. Finbar*, and sailing direct for the Arctic regions, had had to leave for Canada before she was ready.

Subsidized Shipbuilding in Great Britain.—A Canadian press cable from London, June 7, states that substantial assistance to the shipbuilding industry is likely to be given in Great Britain as an outcome of a recommendation of the advisory committee, under the Trades Facilities Act, that the British Government guarantee the Royal Mail Steam Packet Co., £2,300,000 on material for three ships to be built at Belfast, Ireland, and that the Northern Ireland Government guarantee a further amount for expenditure on these ships in Ireland. Only British material is to be used in their construction.

Trevisa Steamship Co. Ltd. has been incorporated under the Dominion Companies Act, with a capital stock of 2,000 shares of no nominal or par value, provided that it shall carry on business with a capital of \$10,000, and office at Montreal, to own and operate ships, and conduct a general business as carriers of passengers, merchandise and mails by land and water. The incorporators are: S. R. Holden, K.C., R. C. Holden, P. P. Hutchison, A. B. Wright and B. Forbes, Montreal.

Ocean, Coast, Lake and River Steamship Officers for 1923.

The following appointments of captains and chief engineers, by Canadian navigation companies, have been reported to Canadian Railway and Marine World since those mentioned in our last issue. The first column contains the names of the steamships, the second, those of the captains, and the third, those of the chief engineers.

Glen Steamships Ltd., Midland, Ont.		
Glendochart	D. Charland	W. Goodwin
Glengarnoch	M. Bouvair	T. Bogie
Great Lakes Transportation Co., Midland, Ont.		
Glenelg	C. B. Kirk	J. Gilbert
Glensannox	J. A. Brown	J. A. McChristie
J. A. McKee	D. C. McLachlan	F. Black
Matoa	R. Burke	L. Butler
T. J. Drummond	C. Scott	W. McWilliams
Muskoka Lakes Navigation & Hotel Co., Gravenhurst, Ont.		
Ahmie	A. T. Corbett	C. McArthur
Cherokee	W. Bradshaw	W. Lambert
Islander	A. P. Larsen	J. Russell
Medora	E. McAlpine	J. McKenzie
Oriole	G. Stevens	F. Battelle
Sagamo	R. W. Lee	T. J. Dryburgh

Main Transit Co. Ltd. has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital, and office at Collingwood, Ont., to own and operate ships, wharves, docks, warehouses, etc., and to carry on a general navigation and transportation business. The nominal incorporators are: S. E. Wedd, R. B. Whitehead, B. V. McCrimmon, C. F. H. Carson, and J. G. Middleton, solicitors, Toronto. The company has acquired the s.s. *Dalrymple*, recently built by Collingwood Shipbuilding Co., Collingwood, Ont., which it is now operating in the grain trade between Port Colborne and Montreal. On the first trip made at the end of May from Fort William for Montreal, she carried 89,053 bush. of no. 1 northern wheat, on a draft of 13 ft. 10 in. We are informed that this cargo is greater by several thousand bushels than any previous one ever carried from Fort William to Montreal without transshipment, and it is felt that she will be able to carry 91,000 bush. on the full canal draft of 14 ft. She has a speed of 10½ miles an hour, and is in charge of Capt. F. A. Garratt.

The International Mercantile Marine Co's report for 1922 shows a deficit of \$1,269,783, after payment of interest on bonds, and depreciation, against a net profit of \$5,797,347 for 1921. The net earnings, including insurance fund surplus, after paying interest on subsidiary companies' debenture bonds, was \$6,971,130 for 1922, and \$14,069,053 for 1921. There was a marked decrease in the movement of third class passengers both east and westbound, due to the U.S. immigration laws, and the unsettled condition of Europe. The freight business was exceedingly bad, particularly between the U.S., Great Britain and the European continent, as well as increased active competition, including government owned steamships, with a consequent reduction in freight rates to a point, where, in many cases, the actual cost of loading and discharging cargo was scarcely covered. The passing of dividends on preferred stock is recommended.

Capt. J. A. Cates Tug and Wharfage Co. Ltd. has been incorporated under the British Columbia Companies Act as a specially limited company, with \$100,000 authorized capital, and office at Vancouver, to build and operate at Vancouver or elsewhere, in the province, docks, slips, wharves and ships, etc., and to carry on business as warehouseman, carrier, etc.

Cattle Shipments to Great Britain.

From the commencement of the year, up to, and including June 9, 26,359 cattle were shipped from St. Lawrence and Atlantic seaboard ports, in 57 shipments. Of this total, 21,084 were eastern, and 5,275 western, cattle. The ports from which shipments were made, with the number of shipments and cattle shipped, were as follows,—

Port	Shipments	Cattle
Montreal	16	8,287
Portland, Me.	16	7,350
St. John, N.B.	15	5,667
Boston, Mass.	7	3,684
Quebec, Que.	2	1,211
Halifax, N.S.	1	160

The first shipments of the year were made from Portland, Me. and St. John, N.B., and the main shipments were continued from those ports until the opening of the St. Lawrence navigation, the first shipment out of Montreal, being made May 12. The volume of business to be moved during the balance of the year will depend on the demand in England, and as Canadian stockers have met with a good market, the prospects are encouraging for a good development of the trade. As this trade has been nonexistent for so many years, on account of the English embargo against Canadian cattle, it is, at present, in a more or less experimental stage, and, while it is stated that the British market is supplied more particularly by local and Irish cattle, it is expected, that by Sept. 1, the demand for Canadian cattle will be revived.

Following negotiations by the Quebec Harbor Commissioners for a share of the shipping, they assigned a portion of shed 27 for the receipt and shipment of cattle, and shed pens have been built there, one pen for each carload. The cars are unloaded alongside the shed, on one side, and the ships dock along the other side of the shed, so that the cattle are driven from the shed pens direct to the ship, and terminal reloading and switching are avoided, which must tend to the arrival of the cattle overseas in first class condition. The Canadian National Rys. have carried several shipments from Winnipeg to Quebec, over the National Transcontinental Ry. and arrangements have been made with Manchester Liners Ltd. for some of its ships to load cattle at Quebec. The railway schedule, Winnipeg to Quebec, is about the same as to Montreal, but more leeway is available, as ships pick up the cattle at Quebec about 12 hours after sailing from Montreal, the cattle therefore being a shorter time on board ship.

It is estimated that before the closing of St. Lawrence navigation, some 50,000 cattle will be shipped.

Toronto, Hamilton & Buffalo Navigation Co.—The Toronto, Hamilton & Buffalo Ry. Co. directors' report, for the calendar year 1922, states that the T. H. & B. Navigation Co's steel car ferry boat *Maitland No. 1* was in service throughout the entire year, with the exception of a lay-up of 8 weeks. The net loss from operation was \$17,746.88, due principally to the absence of coal tonnage, caused by the coal strike during the summer.

River St. Lawrence Ship Channel.—The further supplementary estimates for the year ended March 31, 1923, submitted in the House of Commons recently, provide \$80,000 for maintenance and operation of dredging fleet, to cover Governor-General's warrant of Oct. 16, 1922.

Transportation from Edmonton to the Arctic.

The reopening of the Athabasca-Mackenzie River route to the Arctic Ocean, will mark further development of the Arctic trip, on which, in 1922, for the first time, passengers could leave Edmonton, Alta., and depend on making through connections, without delays, to the Arctic Ocean, and return during the navigation season. The actual distance between Edmonton and Aklavik, on the Arctic Ocean, is 1,986 miles, 300 of which is by rail to Waterways. From Waterways, navigation northward is divided into two sections, by the Fitzgerald-Smith portage. Waterways is on the Clearwater River, an eastern tributary of the Athabasca River, and about 10 miles up stream from the junction at McMurray. From McMurray, the Athabasca River flows almost due north to Lake Athabasca, near its western end. Chipewyan is on the north side of Lake Athabasca, where the river joins the lake. Navigation on the lake is somewhat delayed, as the ice remains longer in the lake than in the rivers. The distance from Waterways to Chipewyan is 200 miles, and from Chipewyan to Fitzgerald, 90 miles. The Peace River enters the Athabasca River, from the west, about 30 miles north of Chipewyan, and is navigable up stream from its junction with the Athabasca to the Chutes below Vermilion, about 200 miles. From the outlet of Lake Athabasca, to the junction of the Peace River, what is properly the Athabasca River, is locally known as Rocky River, and from the mouth of the Peace River northward, the united stream is sometimes called the Peace River, and sometimes the Slave River, to Fitzgerald. The Fitzgerald-Smith portage is rendered necessary by a succession of rapids on the Slave River. It is 16 miles across, and there is a graded road, on which teams, tractors and motors are used. Fitzgerald is in Alberta, and Smith, at the north end of the portage is in the Northwest Territories. From Fitzgerald to the Great Slave Lake, the river is known as the Slave, or Great Slave. Resolution, on Great Slave Lake, is 200 miles from Smith. Great Slave Lake is 490 miles long, from west to east, and its outlet, Mackenzie River, is at its westerly end. Hay Harbor is on the southern shore, and is 70 miles west of Resolution, and the lake outlet is 40 miles west of Hay Harbor. Late ice in the Great Slave Lake shortens the season of navigation on the Mackenzie River, as the ice does not clear until the middle of June, and it is the ice from the easterly and northerly arms of the lake, which is drawn to the western part of the lake by the current, which causes this lateness, and not the actual conditions of the climate, as both the Slave and Mackenzie Rivers are open to navigation in May. From Hay Harbor to Providence, on the Mackenzie River, it is about 65 miles, and from Providence to Simpson, 155 miles. The Liard River enters the Mackenzie River from the west at Simpson. With its tributary, the Nelson River, it is navigable by light draft steamboats to Fort Nelson, 300 miles from Simpson. From Simpson to Norman, at the mouth of Bear River, the outlet of Great Bear Lake, is 300 miles, and the Imperial Oil well is 50 miles beyond Norman. Good Hope, 8 miles south of the Arctic Circle, is 130 miles beyond the oil well. Arctic Red River is 140 miles beyond Good Hope. McPherson, on the Peel River, is 65

miles from Red River, and Aklavik is 100 miles from McPherson. Aklavik is in the Mackenzie River delta, and about 25 miles from the Arctic coast, and is a convenient point for trade with the Eskimos. The several arms of the delta are too shallow to allow of ocean ships of any size going in to Aklavik, but Eskimo rowboats and schooners navigate from the coast to Aklavik without difficulty.

The trip from Edmonton and return was accomplished last year in 33 days. Three transportation companies are operating on the routes, viz., Hudson's Bay Co., Northern Trading Co., and Alberta and Arctic Transportation Co. The Hudson's Bay Co. operates the s.s. Athabasca to Fitzgerald, and the motorboat Nichemus, to Fond du Lac. On the Fitzgerald-Smith portage, the company's business is handled by a motor bus, carrying 12 passengers, and freight is carried by horse teams. The s.s. Mackenzie River runs between Smith and McPherson; a new motor boat to replace the motor boat Liard River, wrecked during last summer, is under construction and will operate from Simpson on the Great Slave Lake and Mackenzie River, and up the Liard River to Fort Nelson; the motorboat Hubaco runs in conjunction with the Mackenzie River Steamboat, and an auxiliary powered schooner operates between Resolution and Rae on Slave Lake. Another motor boat is under construction for operation between McMurray and Fitzgerald, and on Lake Athabasca. The Northern Trading Co. carries the mails between McMurray and Aklavik, both winter and summer, and operates the s.s. Northland Echo to Fitzgerald, and the motorboat Notraco on the same route. At the portage, passengers are transferred by motor bus, mails and express by motor truck, and freight by horse teams. The s.s. Northland Trader runs from Smith to Aklavik, the s.s. Northland Pioneer from Smith to Rae, and the auxiliary powered schooner Speed on the Great Slave Lake. The Alberta and Arctic Transportation Co.'s s.s. Slave River operates on the Athabasca section, to Fitzgerald, and the motorboat Canadusa acts as an auxiliary, replacing the Slave River when the water gets too low in the Athabasca and Clearwater Rivers to allow her to operate safely. The Canadusa also runs to Chipewyan and Fond du Lac. At the portage, passengers are transferred by motor car, and there are two 75 h.p. caterpillar tractors, each hauling two wagons, for the transfer of freight. The s.s. Distributor operates on the Mackenzie section, to Aklavik, with the motorboat Lady Mackworth as an auxiliary, which also runs to Rae and occasionally, up the Liard River to Fort Nelson. In addition to the foregoing, a small steamboat is operated out of Chipewyan, by C. Fraser, a trader, and there is an auxiliary powered schooner operating on Great Bear Lake. (Adapted from Edmonton Bulletin.)

Mainly About Marine People.

W. F. Coaker, until recently Minister of Marine and Fisheries for Newfoundland, has been created a Knight Commander of the Order of the British Empire. He is President of the Newfoundland Fishermen's Union, and General Manager, Union Shipbuilding Co., Port Union, Nfld.

Albert Davidson, who has been appointed Assistant General Freight Agent, Canadian Government Merchant Marine, Vancouver, B.C., was born at St. Henri, Montreal, Jan. 29, 1885, and entered transportation service Aug. 22, 1899, since when he has been, to Aug. 1904, in Foreign Freight Department, C.P.R., Montreal; Aug. 1904 to March 1905, secretary to Assistant Freight Traffic Manager, C.P.R., Winnipeg; March 1905 to Sept. 1909, in General Freight Department, C.P.R., Vancouver, B.C.; June 1, 1910 to July 14, 1913, City Freight Agent, Grand Trunk Pacific Ry., and Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.; July 15, 1913 to Dec. 31, 1916, General Agent, same companies, Prince Rupert, B.C.; Jan. 1, 1917 to Sept. 1920, in charge of Freight Department, same companies, Vancouver; Sept. 1920 to Jan. 1923, consequent on the amalgamation of the companies' interests with Canadian National Rys., Division Freight Agent, steamship lines, G.T.P.R. and G.T.P.S.Co., Canadian National Rys., Vancouver.

Capt. S. T. Easton, an early navigator on the Rideau canal, and for several years in steamboat service on the Ottawa and St. Lawrence Rivers, died at Merrickville, Ont., May 27, aged 73.

Capt. J. A. Simard, for several years master of Canada Steamship Lines' s.s. Saguenay, died at Sorel, Que., June 4, after a long illness. He was well known on the Great Lakes and St. Lawrence River and Gulf, had spent about 43 years in navigation service, and had acted as master of ships sailing to and from the West Indies, and also in the Labrador coasting trade.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

B. F. Sturtevant Co., Hyde Park, Boston, Mass., has bought the plant of the Wisconsin Engine Co., makers of Corliss pumping engines, at Corliss, Wis.

Transportation Meetings, Etc., in 1923.

The names of persons given below are those of the secretaries, unless stated otherwise:—

September.—Travelling Engineers' Association, Chicago, Ill. W. O. Thompson, 1177 East 98th Street, Cleveland, Ohio.

Sept. 4 to 7.—International Railway General Foreman's Association, Chicago, Ill. W. Hall, 1061 West Wabash Ave., Winona, Minn.

Sept. 17.—American Association of Passenger Traffic Officers, Montreal. W. C. Hope, Central Rd. of New Jersey, 143 Liberty Street, New York, N.Y.

Sept. 18 to 20.—Roadmasters' and Maintenance of Way Association, Chicago, Ill. P. J. McAndrews, Chicago & Northwestern Ry., Sterling, Ill.

Oct. 8 to 12.—American Electric Railway Association, Atlantic City, N.J. J. W. Welsh, 8 West 40th Street, New York, N.Y.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

Dec. 10 to 12.—American Association of Port Authorities, New Orleans, La. T. S. McChesney, New Orleans.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Bureau of Explosives—A. H. McMullen, Inspector, lines east of Port Arthur, 354 New Union Station, Toronto.—D. W. McNabb, Inspector, lines west of Port Arthur, C.P.R. station, Winnipeg.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Electric Railway Association—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke St., Montreal. Meetings at Montreal 2nd Tuesday, each month, except June, July and August, at 8.30 p.m.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 Canadian National Rys. General Office, Montreal.

Hydro Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, Union Station, Winnipeg.

Shipping Federation of Canada—Thomas Robb, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorfner, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Bldg., Winnipeg, Man.

Canadian Government Merchant Marine, Limited FOR SALE BY TENDER

Sealed tenders will be received by the undersigned at 230 St. James Street, Montreal, Canada, until noon, August 1st, 1923, for the purchase of the following steamers; tenders to be based on acceptance of the respective vessels in their present condition and where now located. Any stores or bunker coal that may be on board excluded:

S.S. Canadian Miner	Ascertained deadweight cap. 2778 tons, built 1920
S.S. Canadian Sealer	Ascertained deadweight cap. 2777 tons, built 1920
S.S. Canadian Trader	Ascertained deadweight cap. 3341 tons, built 1919
S.S. Canadian Adventurer	Ascertained deadweight cap. 3408 tons, built 1919
S.S. Canadian Sailor	Ascertained deadweight cap. 3357 tons, built 1919
S.S. Canadian Sower	Ascertained deadweight cap. 3406 tons, built 1919
S.S. Canadian Pathfinder	Ascertained deadweight cap. 3640 tons, built 1921
S.S. Canadian Engineer	Ascertained deadweight cap. 3679 tons, built 1921
S.S. Canadian Signaller	Ascertained deadweight cap. 3975 tons, built 1919
S.S. Canadian Gunner	Ascertained deadweight cap. 3978 tons, built 1919
S.S. Canadian Warrior	Ascertained deadweight cap. 3995 tons, built 1919
S.S. Canadian Beaver	Ascertained deadweight cap. 3973 tons, built 1920
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S.S. Canadian Coaster	Ascertained deadweight cap. 3939 tons, built 1921
S.S. Canadian Harvester	Ascertained deadweight cap. 4000 tons, built 1921
S.S. Canadian Logger	Ascertained deadweight cap. 3839 tons, built 1921
S.S. Canadian Aviator	Ascertained deadweight cap. 5166 tons, built 1919
S.S. Canadian Raider	Ascertained deadweight cap. 5181 tons, built 1920
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CONDITIONS:

Tenders may be submitted for one or more of the entire twenty-seven vessels. Tenders must be accompanied by cheque for five per cent. (5%) of the amount of the tender, cheque to be made payable to the order of the Canadian Government Merchant Marine, Limited, and accepted by a Canadian chartered bank. The highest or any tender not necessarily accepted. Plans and specifications of steamers can be seen and particulars of delivery ascertained on application to the undersigned.

Name of vessel must be changed before the transfer is completed.

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General Manager, Canadian Government Merchant Marine, Limited.

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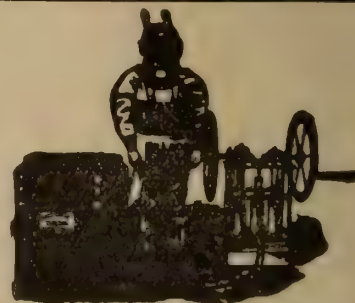
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P.O. Box 109 Niagara Falls, Ont.

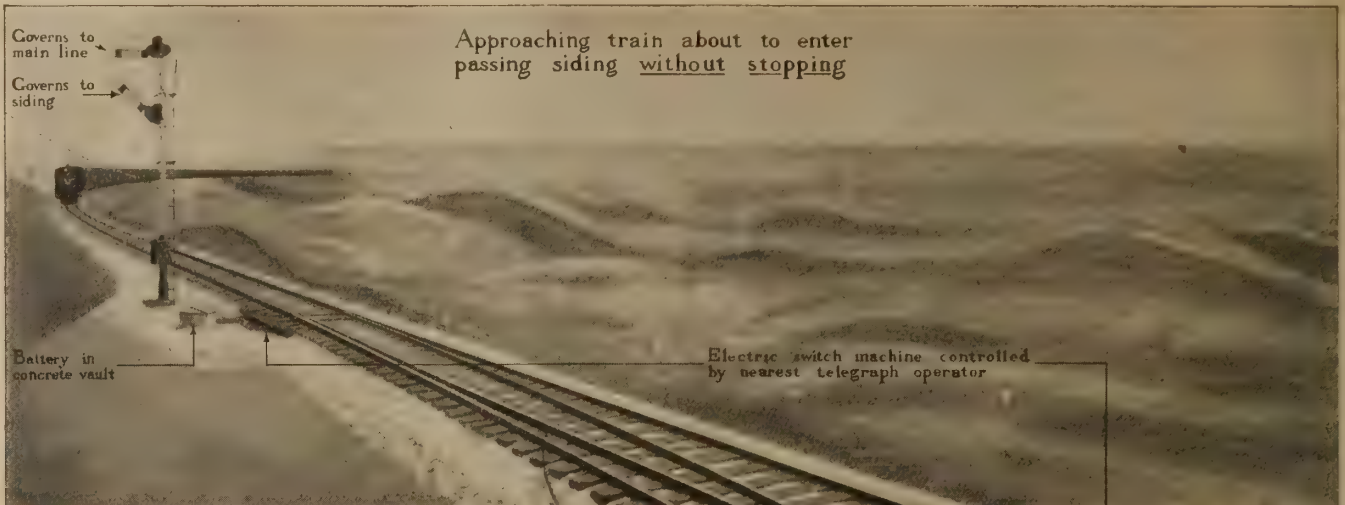
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Eliminate Delays

You must be vitally interested in securing advantages of great importance in getting your trains over the road.

To cause a freight train to stop for one of the train crew to throw a switch results in a delay of from 10 to 30 minutes. It causes delays to other trains, upsets schedules, wastes fuel and causes overtime for train crews.

Such trainstops can be eliminated by the use of electrically operated remotely controlled switch machines.

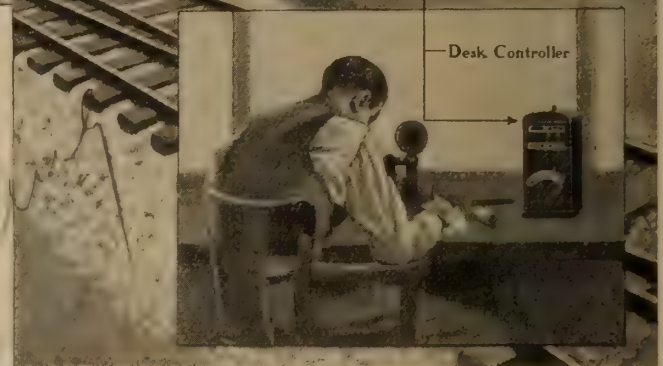
\$2500 to \$8700 per switch per year are the savings reported by eleven railroads now using remotely operated switches at 71 locations.

In addition to the tangible saving which can be closely estimated a number of economies somewhat intangible are also secured, for example:—the train dispatcher can arrange meeting points with a much greater degree of accuracy thereby increasing miles per hour without increasing speed in motion. This increased use of equipment means that less capital is required for new equipment.

The G-R-S Model 5 Switch Machine controlled from a Desk Circuit Controller in the nearest block station or telegraph office, affords an economical and dependable means of remotely operating a switch.

The G-R-S Model 5 Switch Machine can be furnished to operate on 110 or 20 volts Direct Current or 110 volts Alternating Current.

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Each controller unit comprises a circuit controller with 10 contacts, a forced drop electric lock and four indicators.

Let us estimate the cost of equipping your important switches for remote operation.

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They have been on the market long enough to convince their first users of their worth.

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This is your assurance, as well as ours, that this assemblage is living up to our claims of being stronger, more efficient and more economical than any other type on the market.

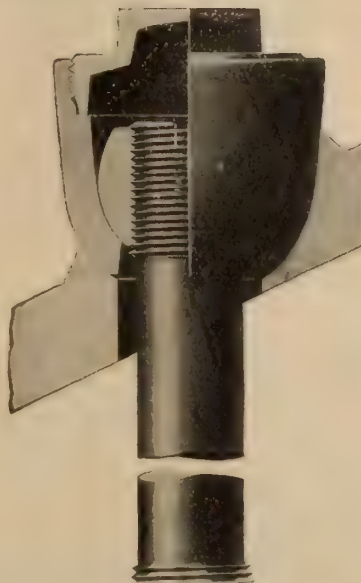
May we advise with you regarding a trial installation of the F. B. C. Welded Flexible Staybolt assemblage?

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THERMIC SYPHONS GIVE CAPACITY

TO any locomotive the Thermic Syphon adds 10 to 20% steam-making capacity. It does this:

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Thermic Syphons offer the quickest and easiest means of securing more capacity from every locomotive on the road.

Apply them at the regular back shop period without delaying the return of power to the road. Start a Syphon program now.

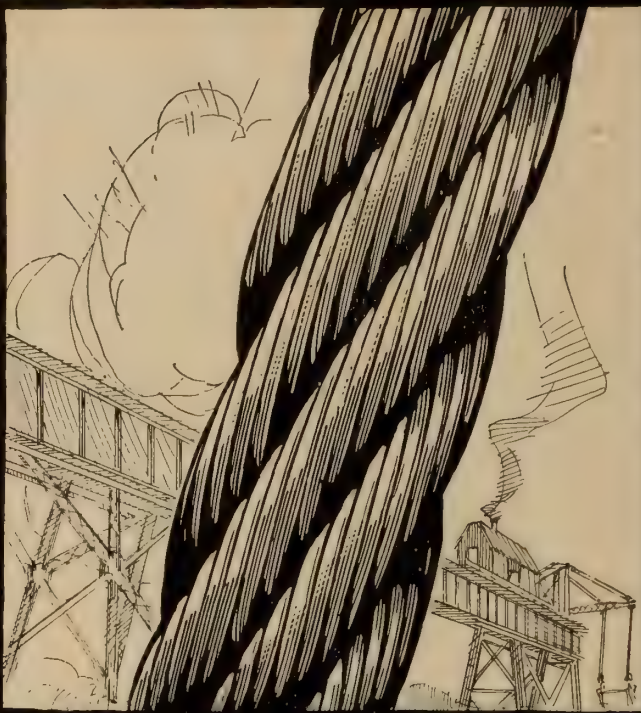
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Reserve lead determines plate life—possible life by quantity available—actual life by rate at which it is consumed.



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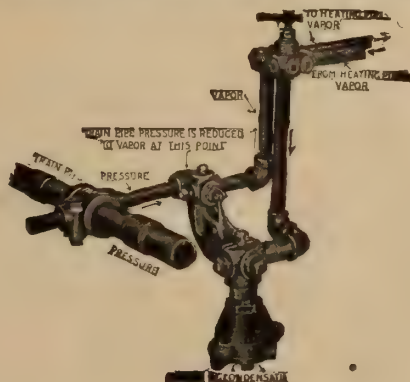
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Boilers, Superheaters, Stokers, Conveyors, Electric
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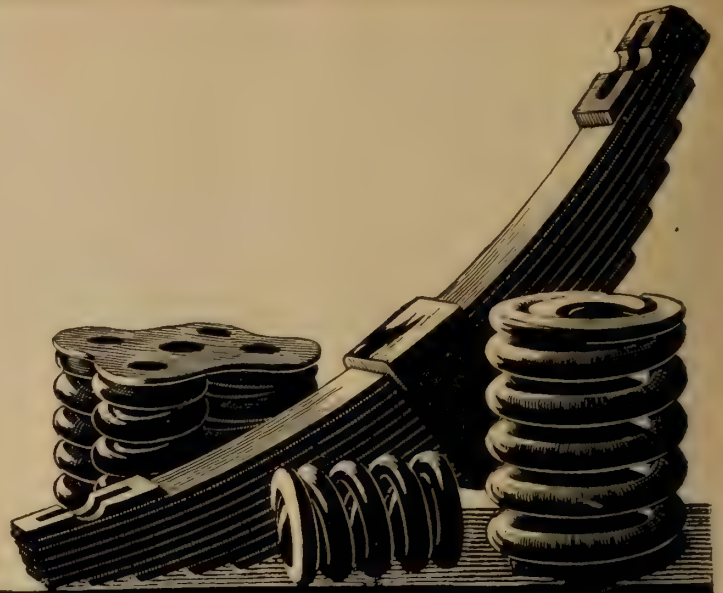
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Can be supplied in sizes ranging from 1/4-inch to 1 1/4-inch. Information and demonstration on request.

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annually in Freight Sheds, Express Depots, and Steamship Docks.

We will be glad to send you literature on request.

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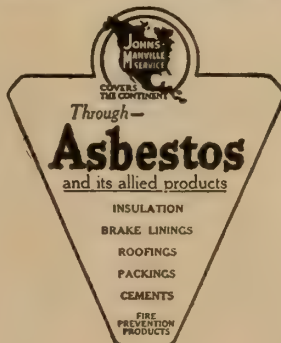
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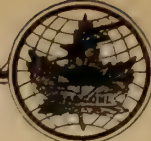
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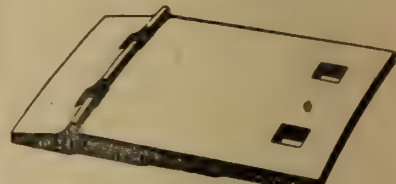
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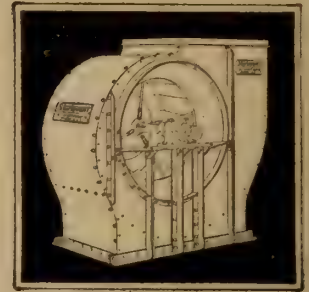
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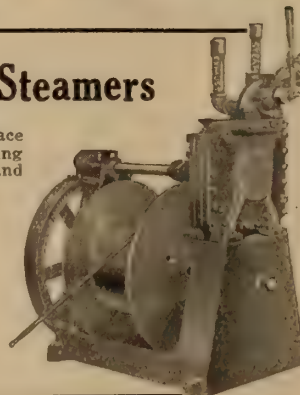
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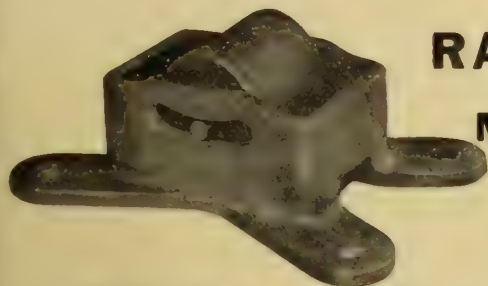
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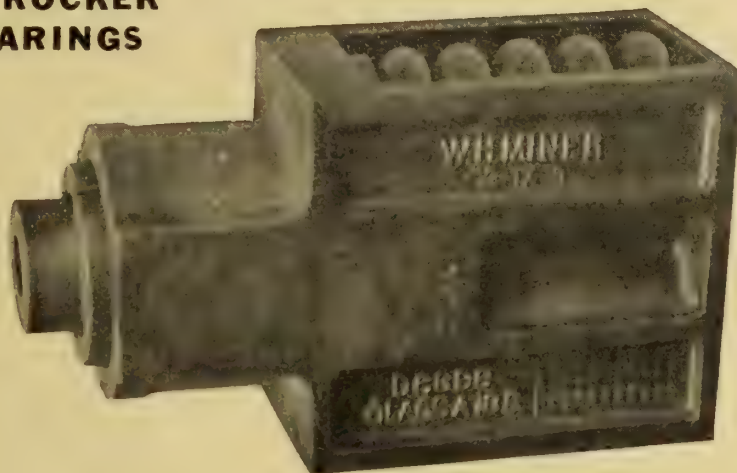
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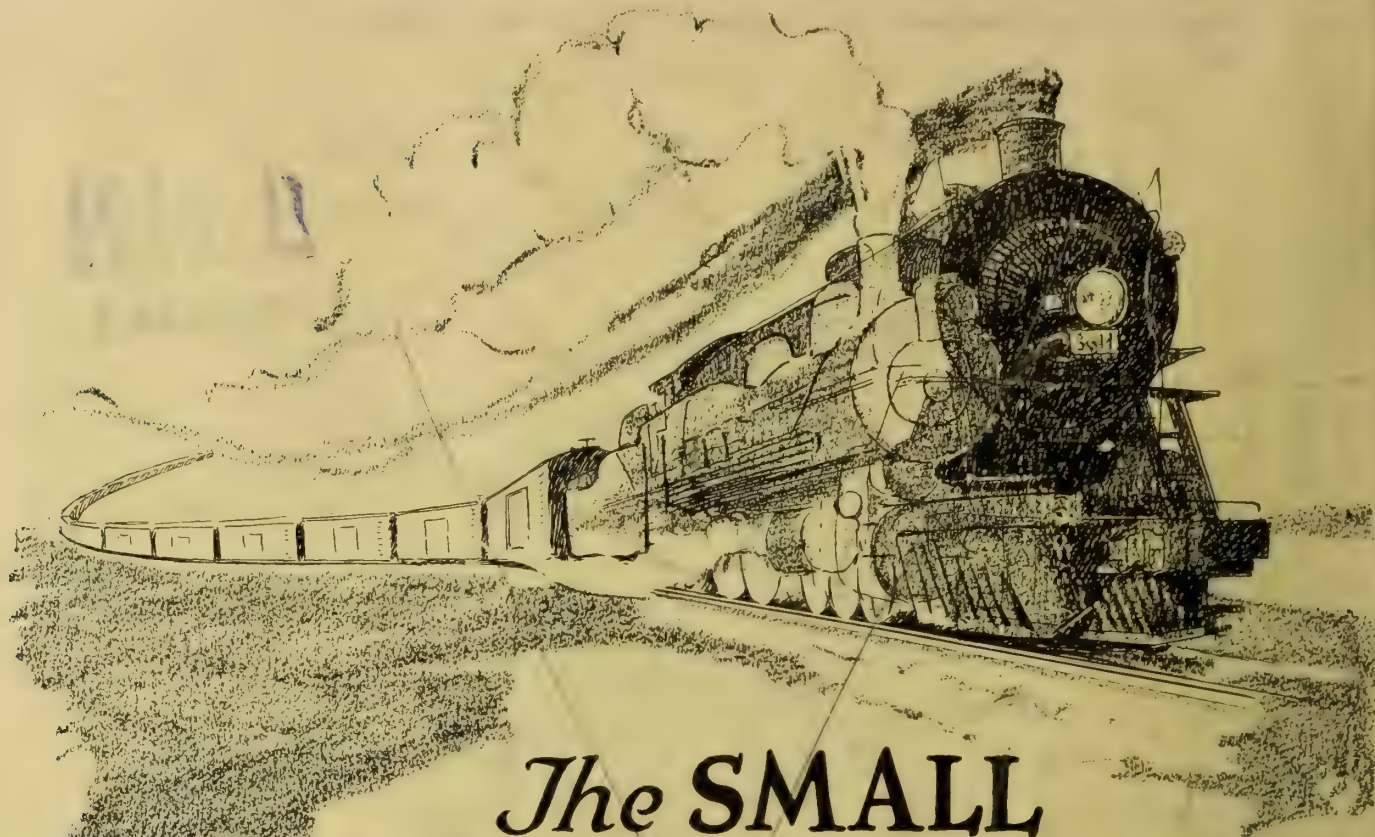
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Number 306.
Index to contents pg. 379.

TORONTO, CANADA, AUGUST, 1923

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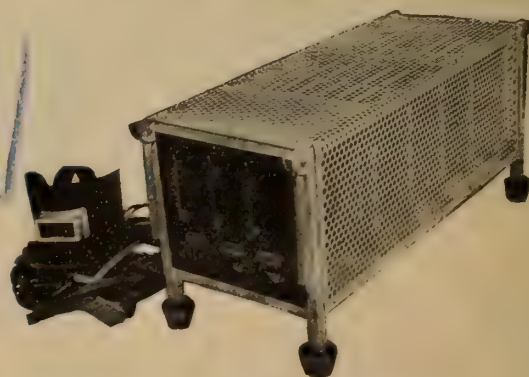
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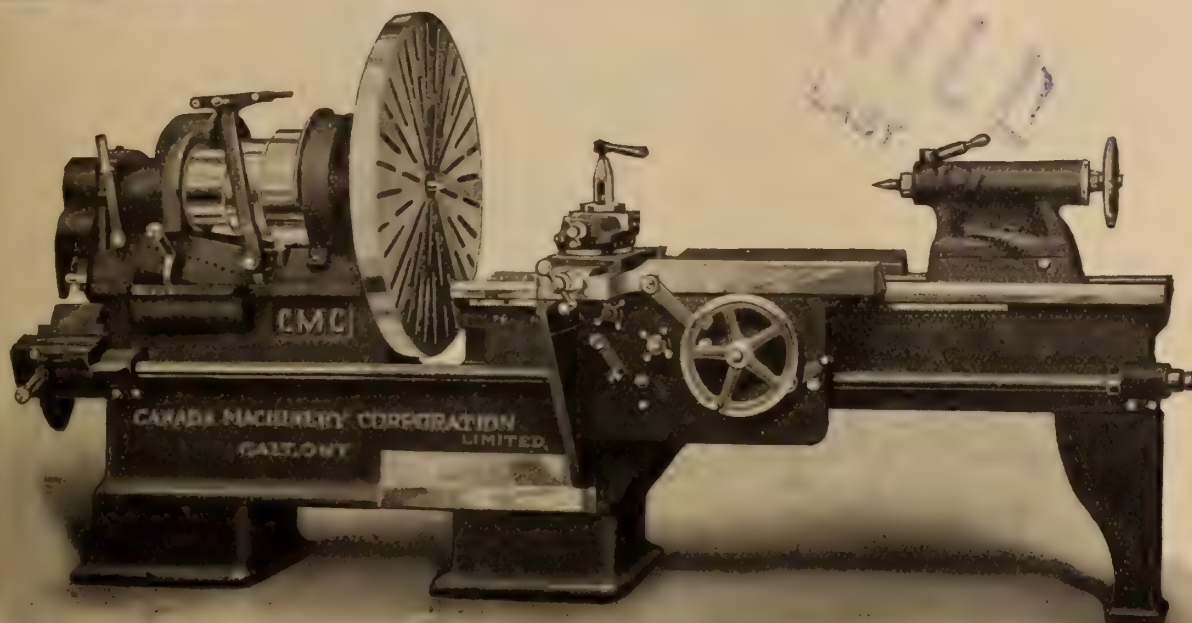
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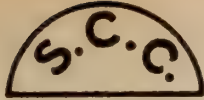
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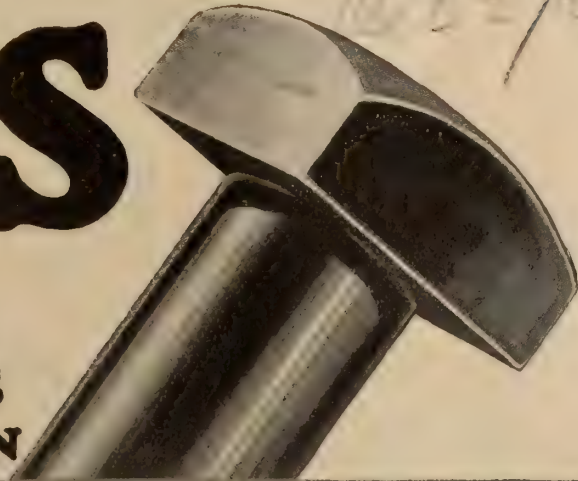
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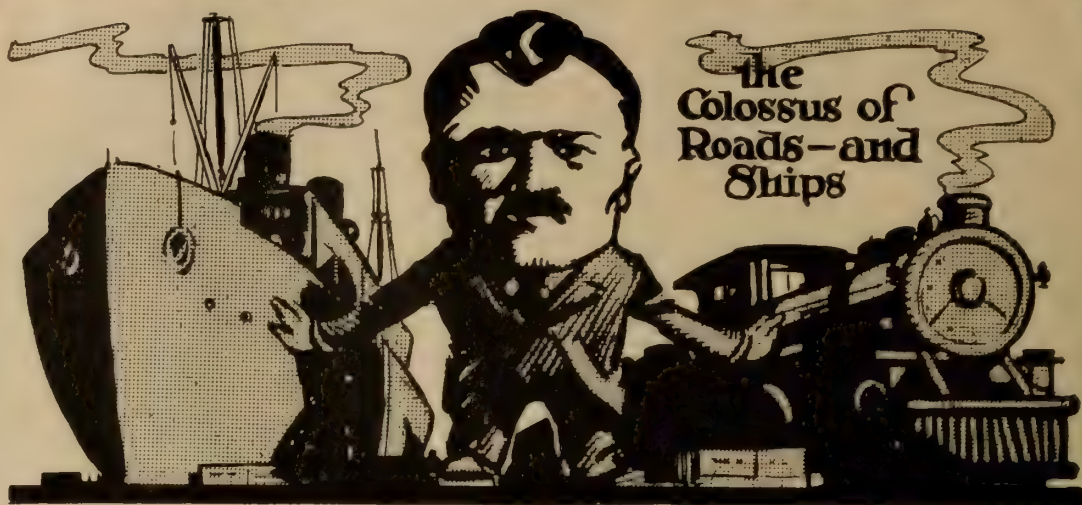
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Thus, though in one sense ours is a Railway and a Marine audience; in a larger sense our readers are the leaders who have built and are building Canada; and their well paid lieutenants upon whose capable shoulders they lean in carrying out great plans.

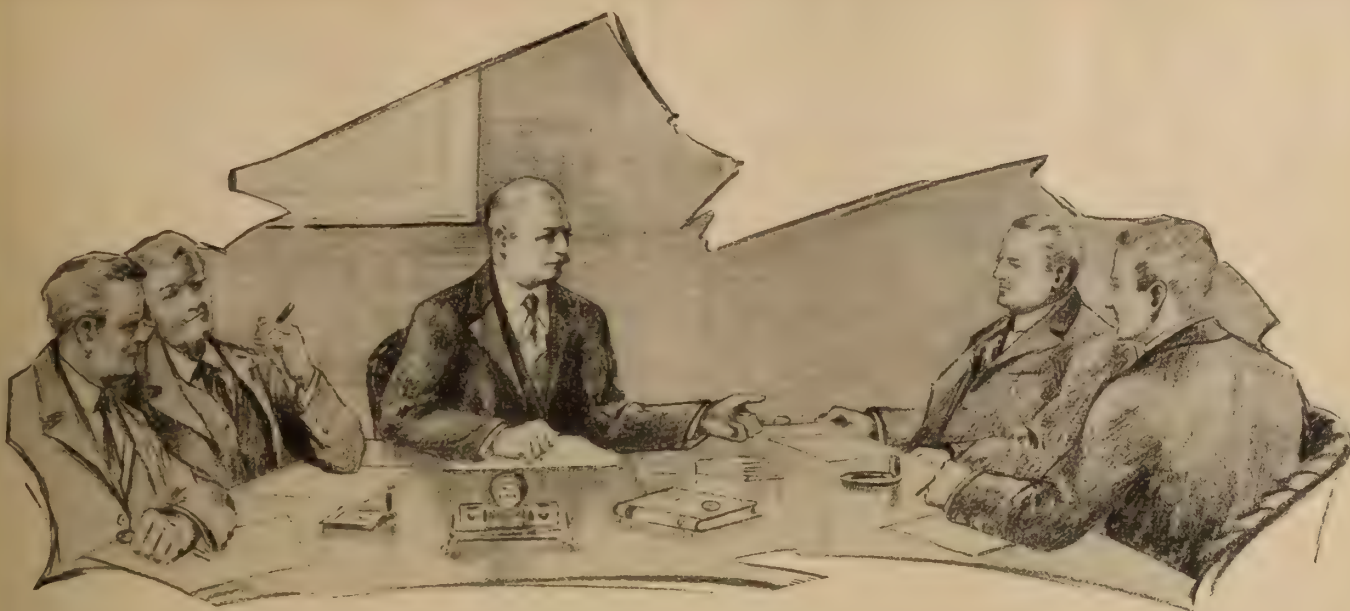
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Toronto

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The results secured are always the same—trouble, hot boxes and driving journals, carbonization in cylinders, constant renewal of cylinder packing, delays, repairs and heavy depreciation in equipment.

Compared with the small saving in the first cost of the oils, the additional expenses arising from the use of inferior lubricants makes the item insignificant—shows it in its true light in relation to actual or final cost of lubrication.

Recently a large railroad made a complete service check on refinery lubricants, claimed to be “good as Galena.” A full year’s test on locomotives and cars permitted the fairest and most thorough observance of the oil’s service qualities. At its conclusion Galena lubrication was adopted as being not only much more efficient, but for its ultimate economy.

Wherever similar tests have been made the results have been the same. Service provides the one reliable means of determining lubricating values. It registers the actual efficiency of lubricants and marks the distinction between “cost of oils” and “cost of lubrication.”

*“When Galena Oils go in—
Lubrication troubles go out!”*



Galena-Signal Oil Company

of Canada, Limited

Toronto

Montreal



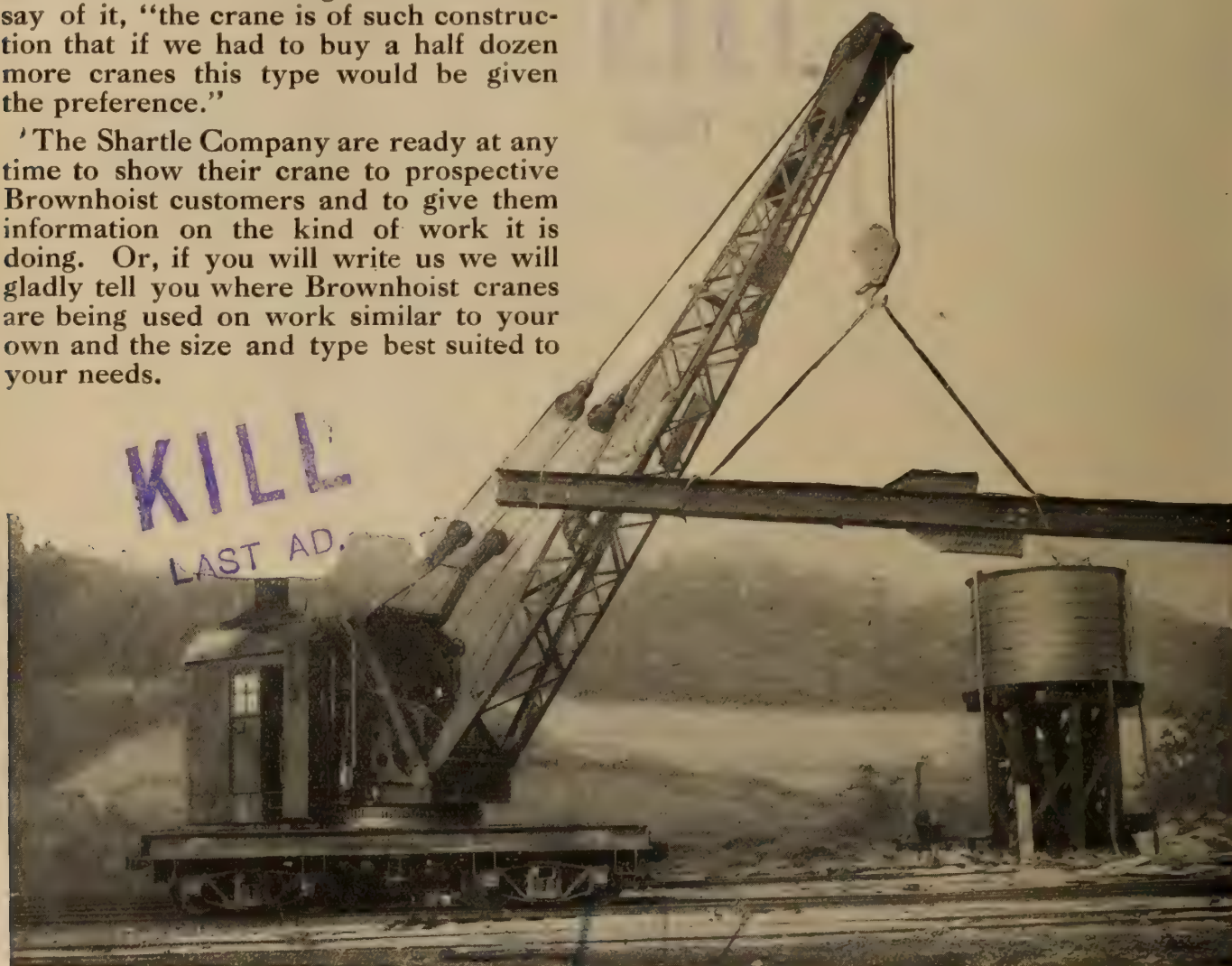
Saving \$10,000 in Sixty Days—

with their Brownhoist locomotive crane. That is what the Shartle Machine Co. did with a big Brownhoist No. 6 crane while wrecking a power plant at Nitro.

This crane had had several years service when purchased by the above company. With a few minor repairs they consider this crane as good as new and say of it, "the crane is of such construction that if we had to buy a half dozen more cranes this type would be given the preference."

'The Shartle Company are ready at any time to show their crane to prospective Brownhoist customers and to give them information on the kind of work it is doing. Or, if you will write us we will gladly tell you where Brownhoist cranes are being used on work similar to your own and the size and type best suited to your needs.

Brownhoist builds both big and small cranes. Write us your handling conditions and let us help you select the crane best suited to your needs.



The Brown Hoisting Machinery Co., Cleveland, Ohio

Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

Products: Locomotive Cranes, Buckets, Belt and Chain Conveyors, Contractor's Bunkers, Etc.

BROWNHOIST

M A T E R I A L H A N D L I N G M A C H I N E R Y

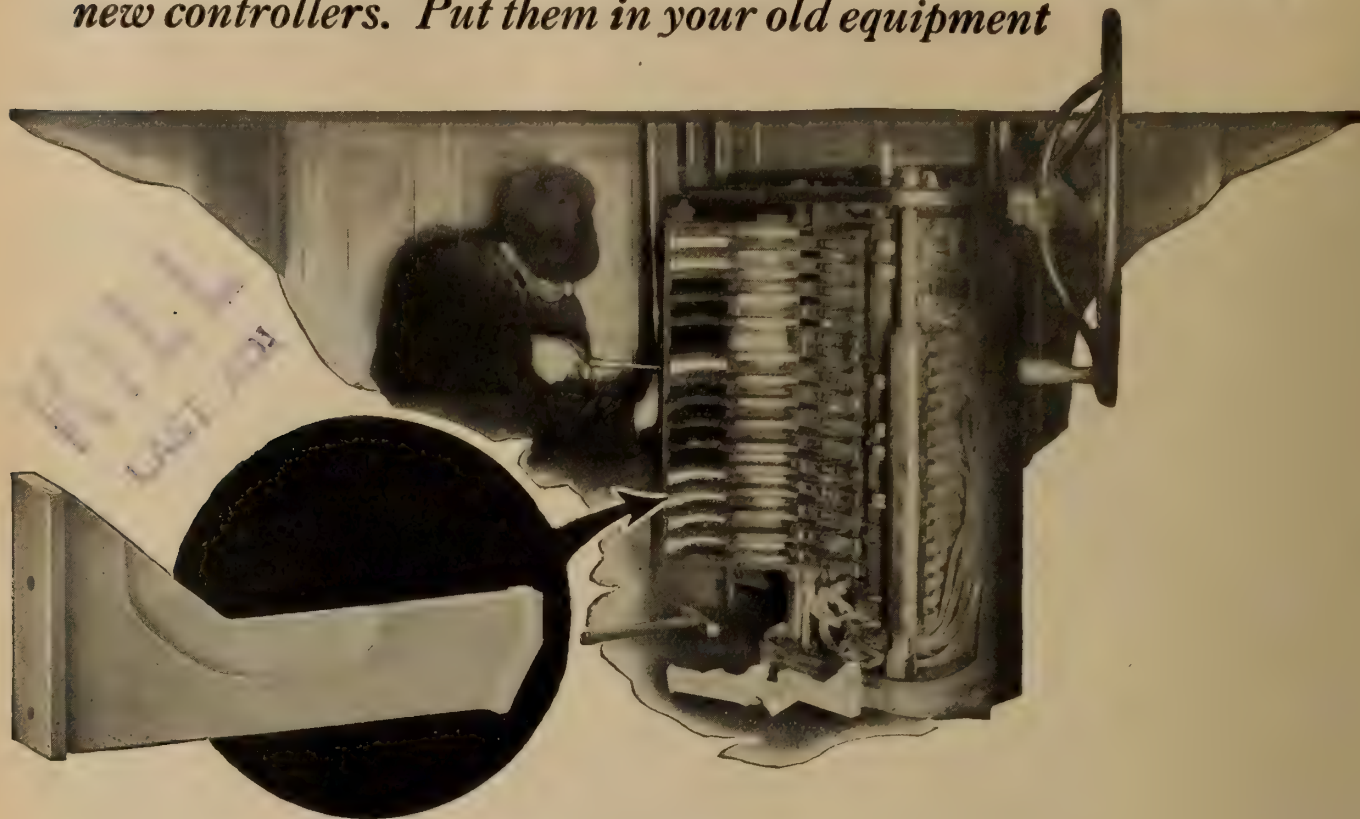
HIPOWER



HIPOWERS adequately, economically and permanently maintain the bolted security of Railway Track Joints. That is why they are universally used.

The National Lock Washer Co.
Newark, N.J., U.S.A.

Arc suppressor plates are considered a necessary part of new controllers. Put them in your old equipment



These plates add life to the controller

C-G-E Arc Suppressor Plates are an auxiliary to the controller arc deflector. They are installed opposite the fingers where there is the most arcing, to shorten the time for disrupting the arc. This is accomplished by narrowing the arc passages, which increases the resistance of the arc and the cooling effect of the plates. The result is less burning of the controller fingers, segments, and arcing plates.

Modern controllers are now equipped with arc suppressor plates. They give better, longer service and require fewer repairs and less frequent inspection.

These plates are inexpensive and can be used to advantage on any C-G-E controller having individual-finger blowouts, such as the K-34, K-35, K-36 and K-64. It takes only a few minutes to install them.

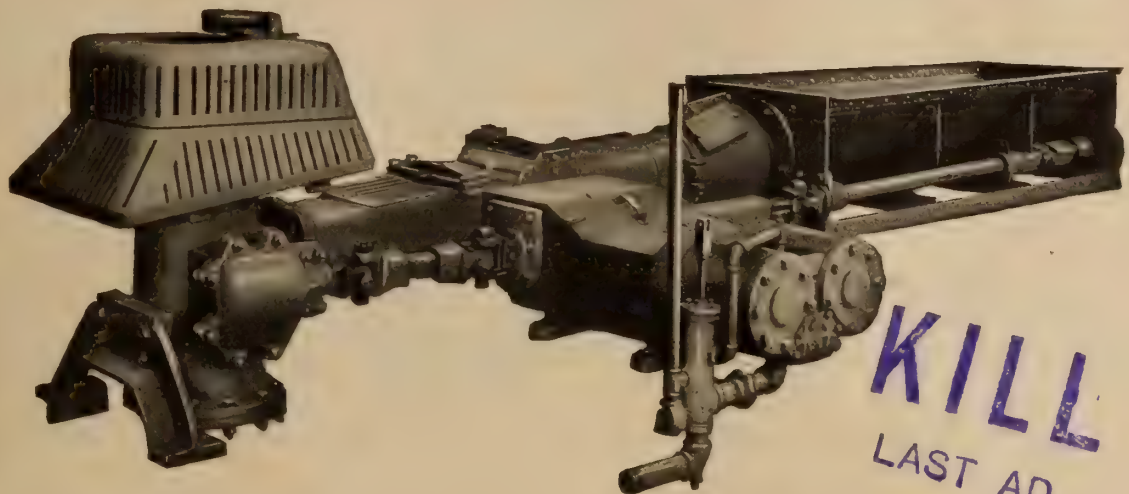
Try them and see the difference.

"Made in Canada" by

Canadian General Electric Co., Limited

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Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Sherbrooke, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.



KILL
LAST AD.

AN ECONOMICAL AND EFFICIENT LOCOMOTIVE STOKER

Everything which increases the ton-mile capacity of the modern locomotive calls for more fuel power.

Nothing done to increase this power counts as much for more tonnage as does the mechanical stoker.

The stoker must feed the

fire with economy as well as efficiency.

These are fundamental features of the DUPONT SIMPLEX STOKER

Are you fully acquainted with the manner in which the DUPONT SIMPLEX STOKER accomplishes these results?

STANDARD STOKER COMPANY, INC.

Grand Central Terminal, New York, N. Y.

McCormick Bldg., Chicago, Ill. duPont Bldg., Wilmington, Del

Foundries and Works, Erie, Pennsylvania.

DUPONT-SIMPLEX STOKER

Scientific Treatment of Boiler Feed Water



Dearborn

Questions and Answers

**KILL
LAST AD.**

Q. What is Dearborn Treatment different from other forms of treatment?

A. Dearborn Treatment is based upon laboratory analysis of water supplies. The treatment is especially prescribed to overcome conditions of foaming, scaling, pitting and corrosion. Dearborn Treatment is the only treatment formulated in this manner.

Q. When would you use Dearborn Treatment and when water softeners?

A. Water softeners are needed only under conditions of exceptionally bad waters of certain types. Wherever a softener is required Dearborn Engineers recommend it. However, expensive installations of softening plants have often been made when Dearborn could actually do the work at a small fraction of the cost and with no initial investment.

Q. What is meant by "Laboratory Control"?

A. Laboratory Control is the service of our staff of chemists working in conjunction with our service men, meeting variations in water supplies and in operating conditions with suitable variations in Dearborn Treatment.

Q. What is the standing of the Dearborn Chemical Company?

A. For over thirty-five years this Company has been an acknowledged world leader in feed water treatment. We originated and successfully developed the idea of scientific analysis, prescription and treatment.

Q. How fully is Dearborn Treatment recognized in the railway field?

A. To the extent of our supplying treatment to more than 100 Railways in North America and having a wide distribution to privately owned and Government Railways in many foreign countries.

Q. Does the Dearborn Chemical Company guarantee results?

A. Yes.

Q. What preliminary steps are necessary to installation of Dearborn Treatment?

A. Complete survey of water and operating conditions. Gallon sample of each supply to be submitted to Dearborn Laboratory for analysis. Information as to present condition of boilers. Dearborn Service men will assist if desired, and will aid local officials in getting use of Treatment properly inaugurated. Dearborn Treatment is most economical and easy to use.

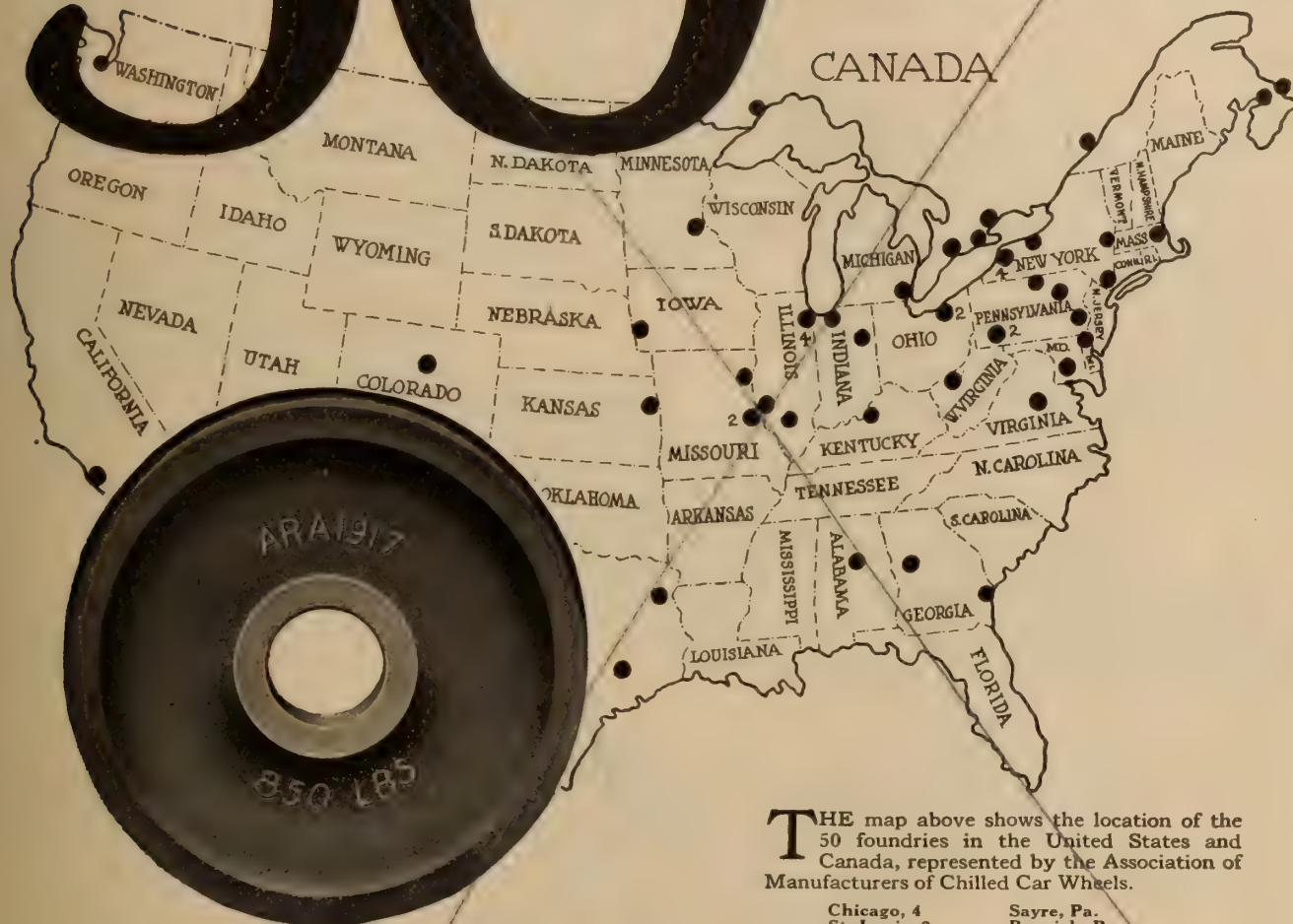
If you have a question not answered here,
ask a Dearborn representative or write us.

Dearborn Chemical Company
Limited

2454-2464 Dundas St. W. TORONTO, CANADA

50

Delivery Points



CHILLED IRON WHEELS
for railway and street car
service. Capacity 20,000 per
day. 25,000,000 in service.

ASSOCIATION OF MANUFACTURERS
OF CHILLED CAR WHEELS
1847 McCormick Bldg., Chicago

THE map above shows the location of the 50 foundries in the United States and Canada, represented by the Association of Manufacturers of Chilled Car Wheels.

Chicago, 4	Sayre, Pa.
St. Louis, 2	Berwick, Pa.
Buffalo, 4	Albany
Pittsburgh, 2	Toronto
Cleveland, 2	New Glasgow, N. S.
Amherst, N. S.	Madison, Ill.
Montreal	Huntington, W. Va.
Mich. City, Ind.	Wilmington, Del.
Louisville	Houston, Tex.
Mt. Vernon, Ill.	Hannibal, Mo.
Ft. Wayne, Ind.	Reading, Pa.
Birmingham	Baltimore
Atlanta	Richmond, Va.
Savannah	Ft. William, Ont.
Boston	St. Thomas
Detroit	Hamilton
St. Paul	Ramapo, N. Y.
Kansas City, Kan.	Marshall, Tex.
Denver	Los Angeles
Tacoma	Council Bluffs
Rochester, N. Y.	

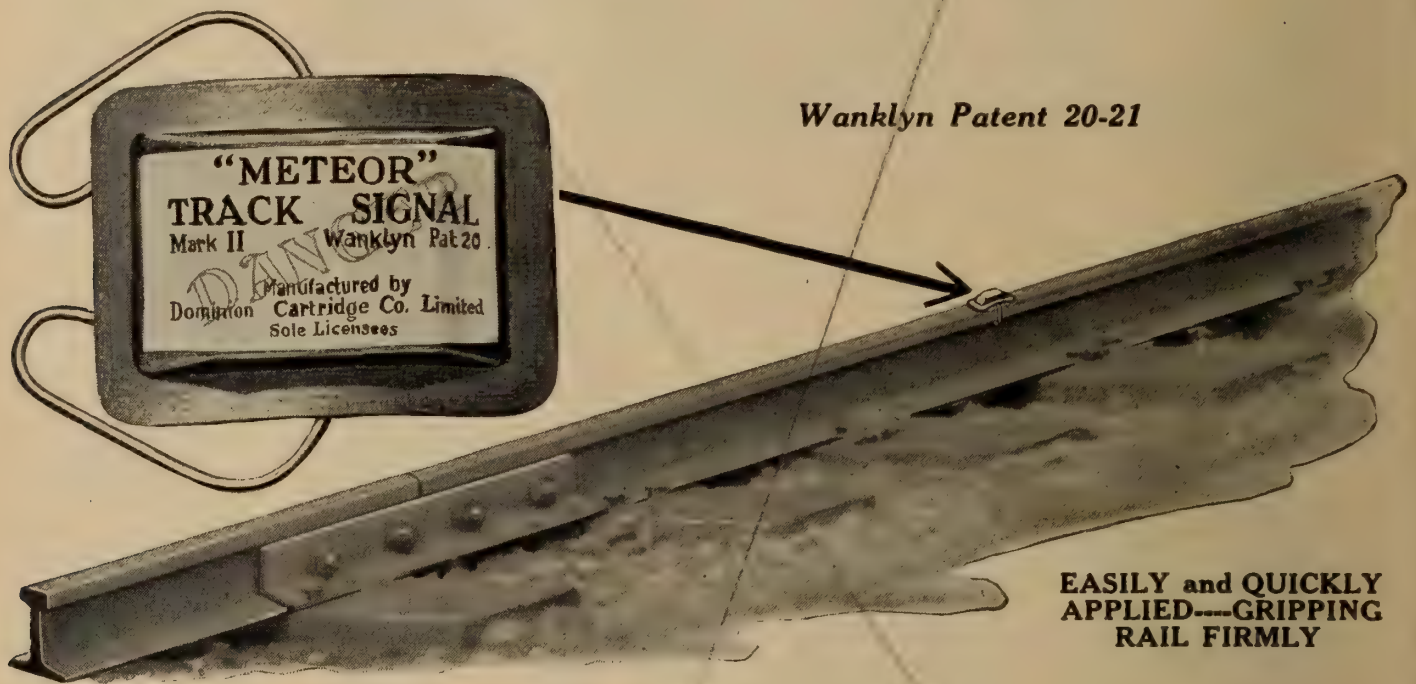
American Railroad Association Standards

650 lb. wheel for 60,000 Capacity Cars
700 lb. wheel for 80,000 Capacity Cars
750 lb. wheel for 100,000 Capacity Cars
850 lb. wheel for 140,000 Capacity Cars

The Standard Wheel for Seventy-Two Years

CHILLED IRON WHEELS

Let the "Meteor" Safety Train Signal Protect Your Trains



“ Surest and best rear end train protection ever offered ”

(Endorsement of Railway Official)

OFFICIAL TEST

As reported to the Board of Railway Commission for Canada, by Chief Inspector of the Explosive Division, Department of Mines, Dominion of Canada:—

The Detonation was found to be reliable under trials, the conditions of which were more severe than those likely to be encountered in actual service.

The volume of sound is well above the average, sharp and arresting, accompanied by a brighter flash than given by any other torpedo tested, and plainly seen from the cab of the locomotive.

The detonation was not affected after the signals had been subjected to special treatment, for exposure to rain, snow, steam, saturated atmosphere and rough usage. No “dangerous” debris was projected at the trials, and the results were superior to those obtained with any other torpedo tested.

The brass wire swivel spring is of a form which renders the operation of attaching the signal to the rail simple and quick and cannot be knocked off by the wheel of the locomotive.

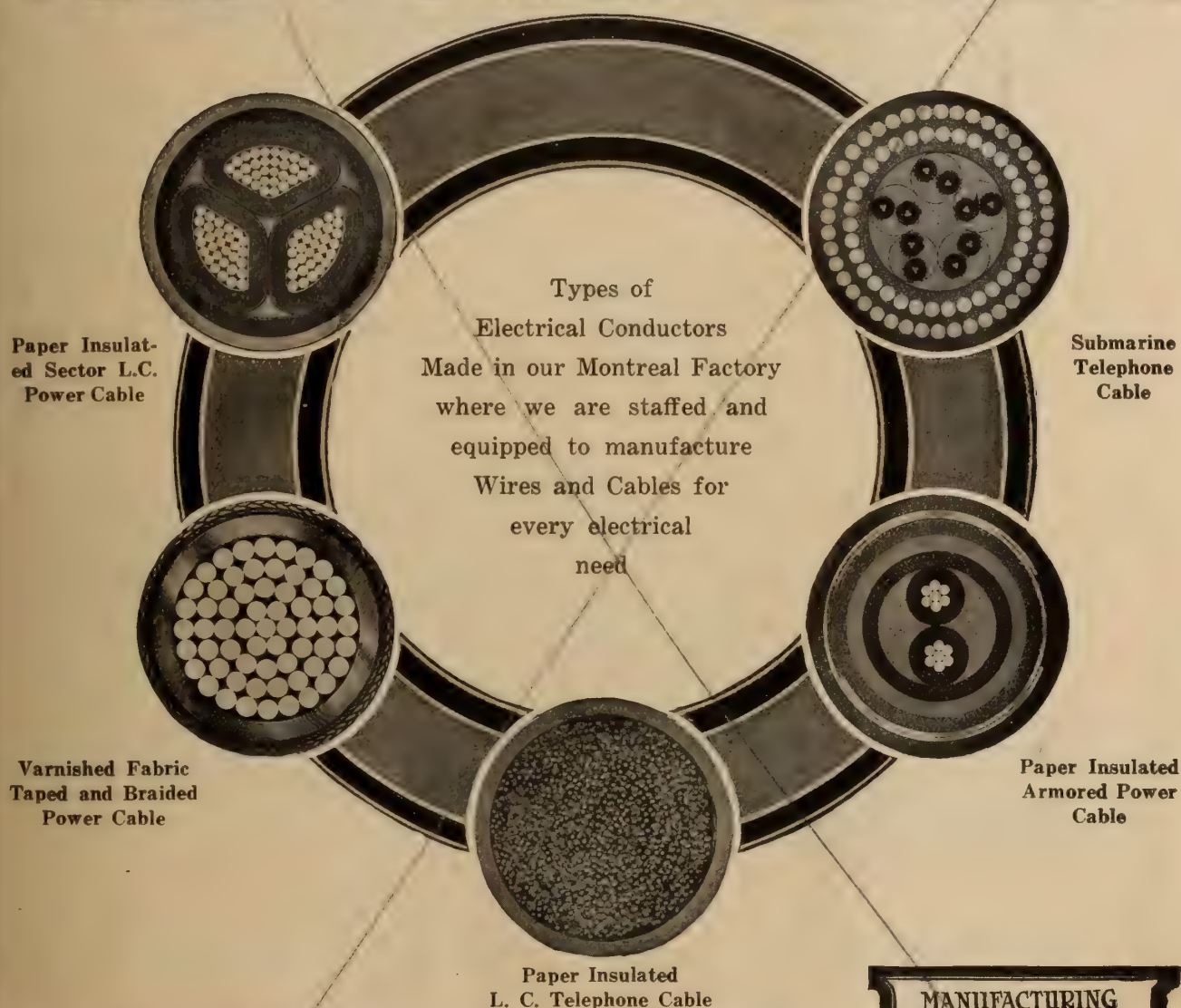
After tests under service conditions on the Canadian Pacific Railway, from the Atlantic to the Pacific, practical railroaders affirm that no engineman can possibly run over one of these signals and fail to recognize that a signal is intended. This opinion from men who are familiar with the use of track signals fully endorses all that has been said in favor of the “METEOR.”

The “METEOR” differs from all other torpedoes. It appeals to three senses—Hearing, Seeing and Smelling—and thereby makes assurance trebly sure. The “METEOR” has been adopted as “Standard” on the Canadian Pacific Railway over the entire 18,000-mile system, also by the Grand Trunk Railway and other Canadian Railways.

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Head Office: 120 St. James St., Montreal

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MANUFACTURING

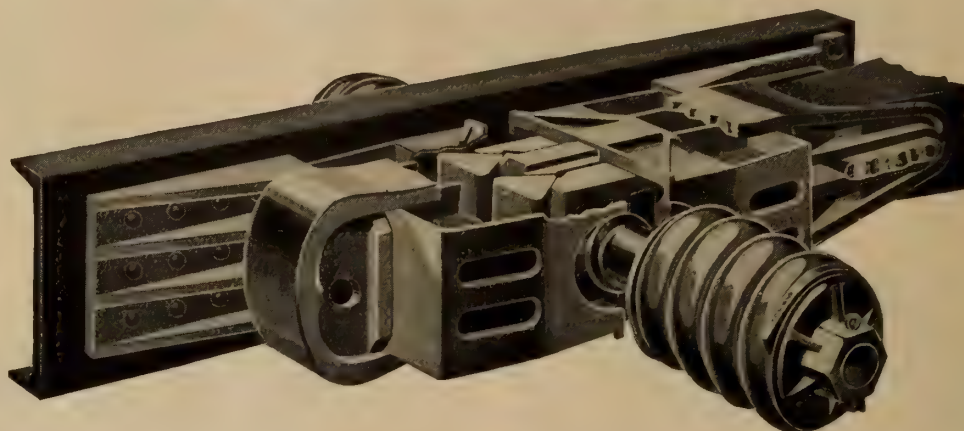
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Automatic Telephones
Wires & Cables
Fire Alarm Systems
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receiving Equipment

DISTRIBUTING

Construction Material
Illuminating Material
Power Apparatus
Household Appliances
Electrical Supplies
Power & Light Plants
Marine Fittings

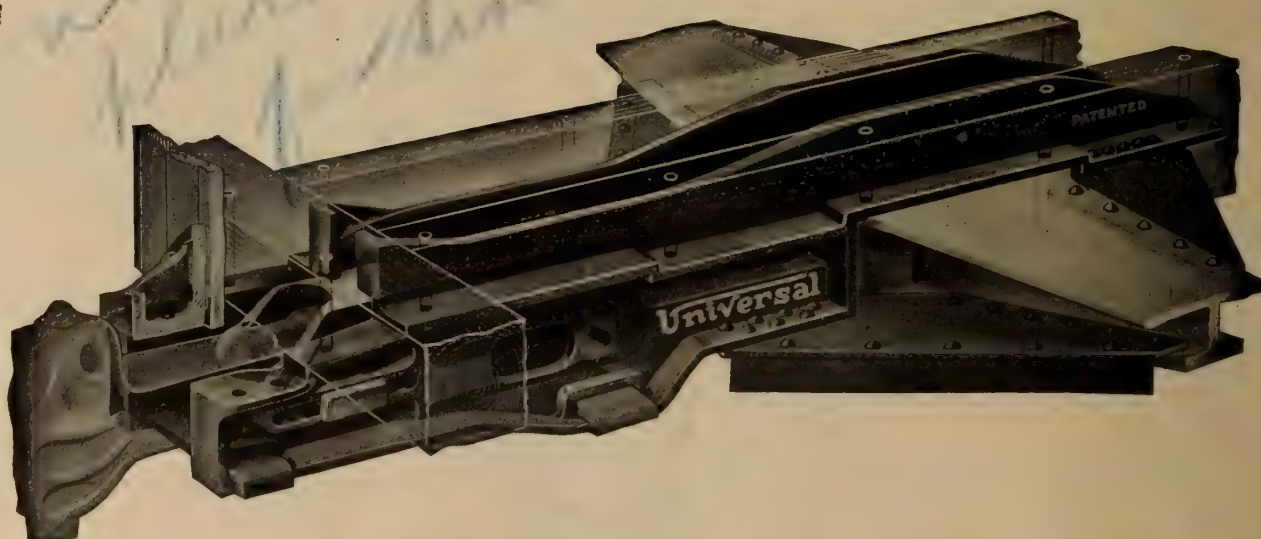
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MADE IN CANADA



Universal ATTACHMENTS

MADE IN CANADA



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TANDEM SPRING DRAFT RIGGING
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CAST STEEL YOKES
DRAFT LUGS or PLATES
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MADE IN CANADA

WEBB. G. KRAUSER

Transportation Building, MONTREAL

"You Know Where to Find the Man"

"We want a man who
has specialized for that
position."



"Get the right man for the place from among those whom we already employ," were the President's instructions. "Pick out those who have not only been doing their work well, but have been studying in spare time getting ready for advancement. Among these you will find the right man."

Are you in the enviable position of that Executive Head when you wish to find the right man for the vacant place in your organization? Have you encouraged your employees to study? Have you let your employees know that trained competent men do not need to look elsewhere for promotion? Have you developed real, upstanding men who can fill positions of increased responsibility?

You cannot afford to overlook this vital factor in the success of your enterprise and of those associated with you.

The trained-man problem has been solved. All over this Continent business concerns, large and small, and in every line of trade and industry, have found in the International Correspondence Schools a medium of training and a source of trained men that has simplified one of the greatest problems in the building of an efficient organization.

For thirty-one years the I. C. S. has been training men for advancement, covering every technical trade and every phase of business—accountancy, salesmanship, advertising, traffic management, foreign trade, production, marketing, financing, drafting, electricity, engineering, shop practice and many others.

For a long time the I. C. S. worked only for the individual student. Then employers looking for men with certain qualities—ambition, industry, perseverance, special knowledge—suddenly made a discovery—these were the very characteristics of the I. C. S. trained man. Recognizing this, they began to seek out the men in their employ who were taking I. C. S. courses and to encourage others to enroll. Thus, there has developed a great co-operative plan through which the I. C. S. is serving over one thousand industrial concerns and three hundred railroads, solving the training problems for both employer and employee.

Some employers buy Courses for selected men. Some assist their men to pay for Courses. Others reimburse their men for the price that is paid for their Courses when they have completed them. Still others simply recommend I. C. S. Courses and then encourage those who take them. The I. C. S. offers a simple arrangement whereby employers are kept informed of the progress of employees who receive training from the Institution. **THE DEFINITE EDUCATIONAL ACHIEVEMENT OF THE I. C. S. STUDENT MAKES SUCH SERVICE DIRECTLY VALUABLE TO THE EMPLOYER WHO IS LOOKING FOR MEN FOR LARGER RESPONSIBILITIES.** An I. C. S. Course is a systematic, scientific, comprehensive and connected arrangement of specially prepared texts, easily studied, easily remembered and easily applied. From the day of his enrolment to the completion of his final examination, the I. C. S. Student is directed step by step, through every difficulty and helped over every obstacle. Judgment, initiative, logical thinking, patience and application, so invaluable in every calling, are carefully cultivated in I. C. S. training. Not only is the I. C. S. Student put in possession of valuable knowledge of his chosen branch of commerce or industry, but the personal, practical, problem-solving method of instruction is the making of a trained mind and the building of sound character.

To build an efficient organization you must have trained men, and you cannot depend on finding them in other organizations. No matter how small or how great your needs, the I. C. S. can help you. You may have a single promising employee whom you want specially trained, or you may have ten or a hundred or a thousand employees in your plant or office who are good workers but lacking that special skill you like them to have.

Help them to equip themselves for better jobs and bigger responsibilities. Make them more valuable to you. The I. C. S. is ready with a practical way to do it.

Address: Industrial Service Division

International Correspondence Schools Canadian Ltd.
MONTREAL, CANADA

The Trade and Technical Paper Divisions of the Canadian
National Newspapers and Periodicals Association
will hereafter be known as the

BUSINESS NEWSPAPERS ASSOCIATION

OF CANADA

MANY Canadian business papers have been among the finest and most respected of their kind in the world; but this association has been formed to establish and maintain for Canadian business papers generally, standards which to readers and advertisers must be a guarantee of the high quality and merits of its publication members.

As its "Standards of Practice," the Business Newspapers Association has adopted a set of working principles unsurpassed in any field of advertising or publishing. Only such papers that can live up to these standards are accepted to membership.

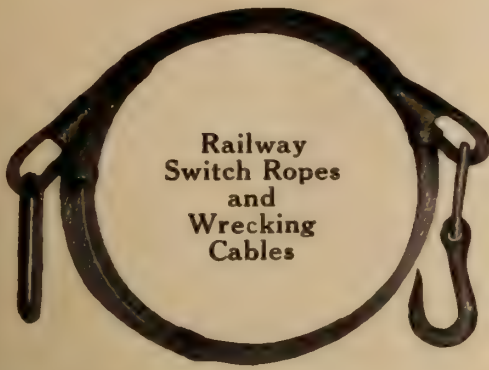
Not only does the Business Newspapers Association of Canada stand for honest, proven circulation methods and claims, demanding that all its members' circulations be audited by the Audit Bureau of Circulations; but also for (what is not less important) high editorial principles, fair competition, reputable advertising, and a general publishing policy which seeks to give the greatest possible service to the industries they represent.

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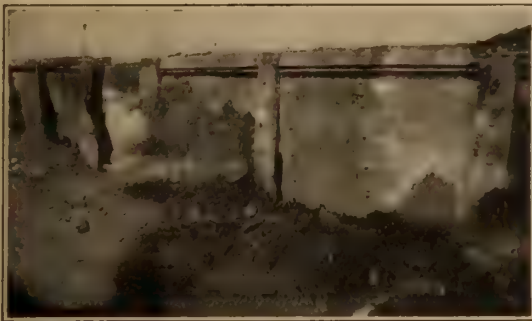
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CABLES can give.

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Old Level Floor Car. Note Ballast Left by Plow.

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The Car With Gravity Discharge Pockets
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Why? Because more time and energy are used up working with a dull file than with a sharp one.

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Sweeper Rattan
may be at a pre-
mium.

There is only one
way to insure hav-
ing it available when
it is needed, and that
is to have it in your
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Let us have your
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Lengths Up To 40 Feet

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Factories: Oshawa, Ont., and Montreal, Que.

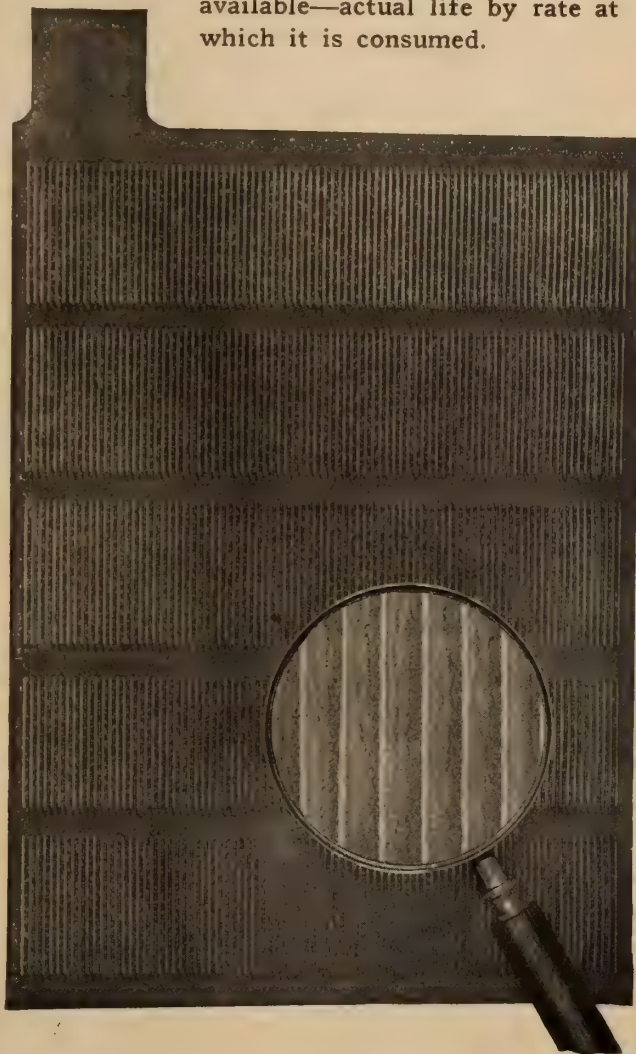
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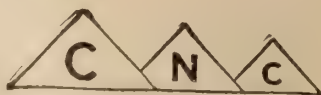
Wherever the flow of metal must be restricted to a definite area, there is no substitute for carbon.

The full advantage of the oxy-acetylene process cannot be utilized without carbon dams, retainers and plugs.

Use Columbia Welding Carbon Products. They simplify vertical welding and are indispensable in making heavy welds on castings without dismantling; in re-inforcing welds to any desired strength.

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TORONTO - CANADA



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MG4



GREENING WIRE ROPE

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KILL

The finest materials and careful workmanship that go into Greening's Wire Ropes are the source of its unusual strength. Quality has been Greening motto for sixty years.

Adaptability

The B. Greening Wire Company have kept accurate record of all conditions under which their rope has been used. This data is available to users of wire rope without obligation and frequently saves them time and money.

Write for complete catalog

The B. Greening Wire Co., Limited
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All sizes and weights
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NEAT — UNIFORM — ORNAMENTAL
DURABLE — STIFF — STRONG
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Brake Beams for all Classes of Cars, Locomotives and Electric Equipment

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PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



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EQUIPPED TO
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A paying proposition for branch line service

LEDOUX JENNINGS LIMITED

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For Railroad, Hotel and Steamship Upholstery CHOOSE "CHASE" MATERIALS



The trade mark "Chase" stands for seventy-five years' leadership in manufacturing.

CHASE GOAT BRAND CAR PLUSH: This product, made from the fleece of the Angora Goat, has been the choice of railroads and steamship lines for over thirty years. It is **DURABLE—FAST IN COLOR—RICH APPEARING—MOST SANITARY.**

Recently there was exhibited a car seat upholstered with our Mohair Plush, and the seat had already been in service twenty-five years.

CHASE LEATHERWOVE: The modern, leather-like upholstery material for use where flexible toughness is the one thought.

For cleaning Plush and other upholstery fabrics choose **CHASE PLUSH RENOVATOR**—That remarkable liquid cleanser which does not start the dyes or injure the fabric. **GUARANTEED effective, but NOT HARMFUL.** Write for samples.

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Ship Your Freight by Water —Save Time and Money

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From Montreal, Toronto and Hamilton, connecting with C.P.R. at Fort William and C.N.R. at Port Arthur for all points in Western Canada—2 sailings weekly.

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Largest Exclusive Trolley Wheel Makers in the World.

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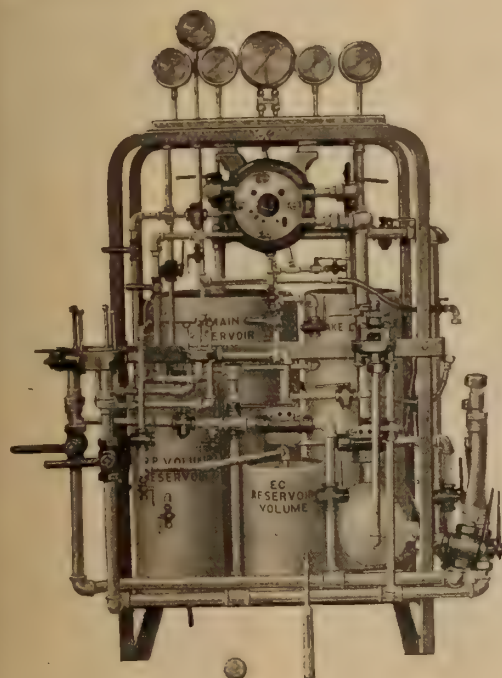


Canadian Representatives:

Northern Electric Company, Limited

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**Dawson & Co., Limited, 148 McGill St, Montreal
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Westinghouse

No. 6 ET Test Rack

Keep Air-Brake Equipment at
The Peak of Efficiency

To enable our Air Brake customers to determine promptly and accurately whether the valves of the Westinghouse No. 6 ET Engine and Tender Equipment are up to the proper standard of efficiency, we recommend the No. 6 ET Test Rack.

By using this rack you know immediately whether any part of the equipment needs repairs, where and how to make them, without guess-work or lost time.

No repair shop is complete without the No. 6 ET Test Rack. We furnish full instructions as to its use and maintenance.

OTHER TESTING APPARATUS FOR
ALL TYPES OF AIR BRAKE EQUIPMENT

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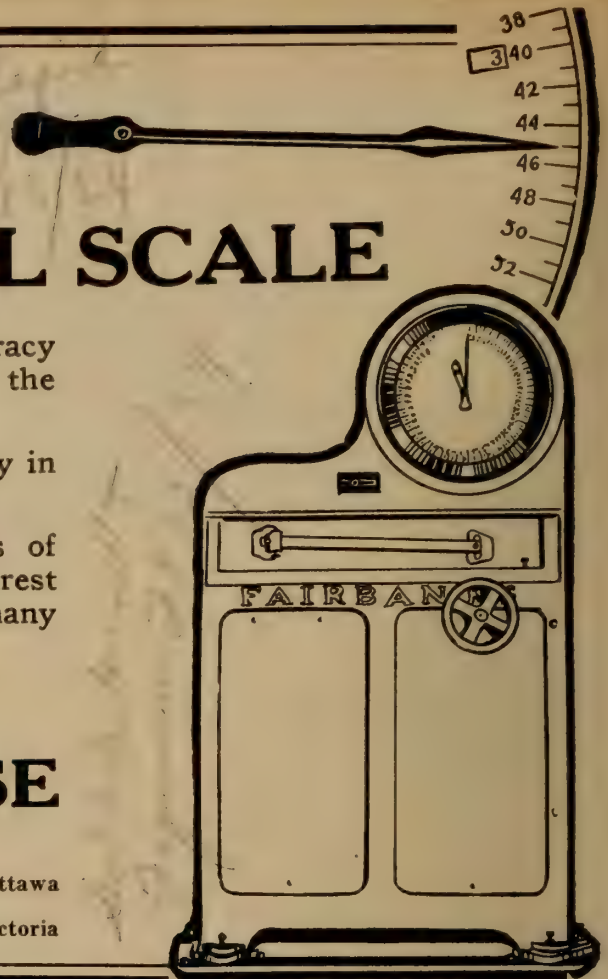
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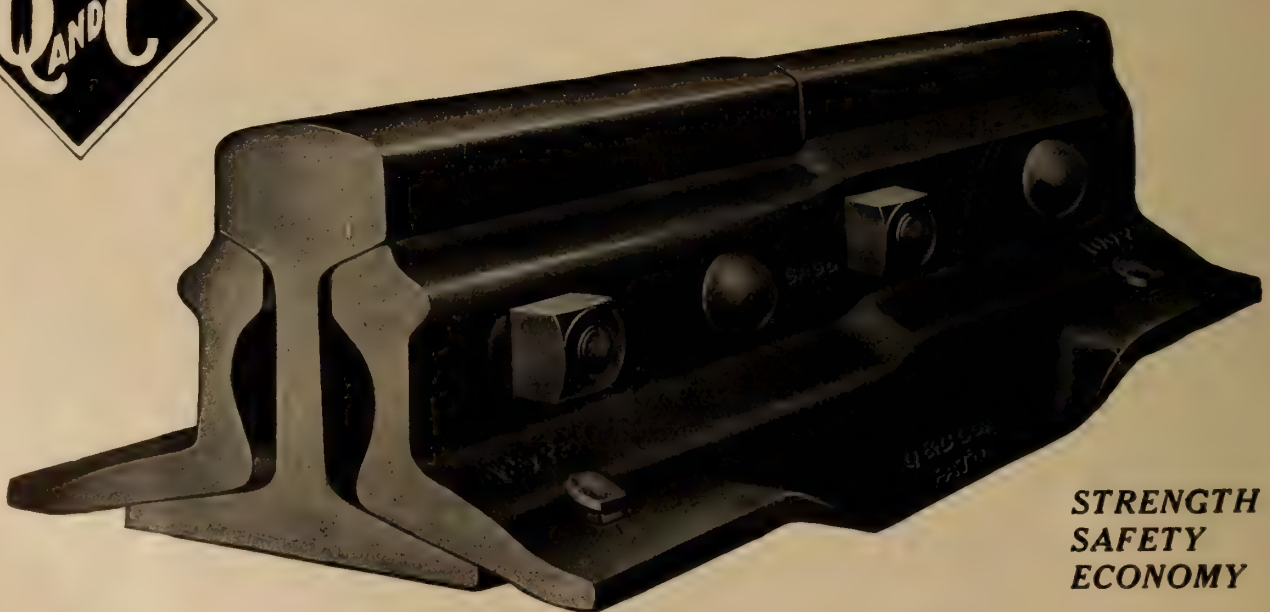
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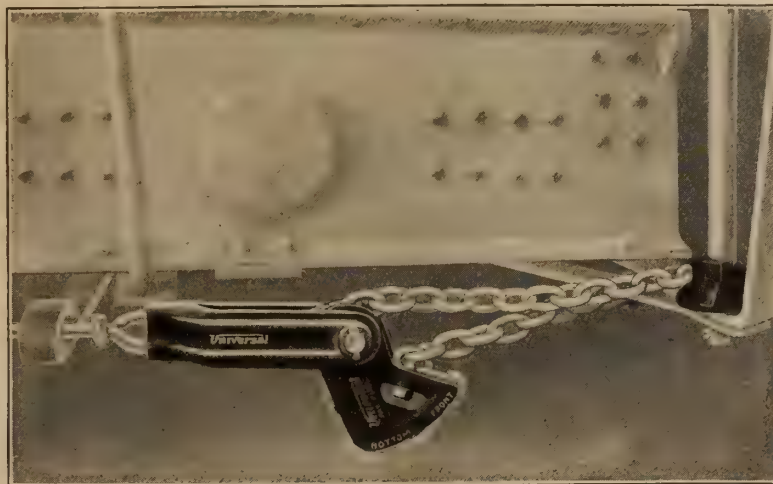
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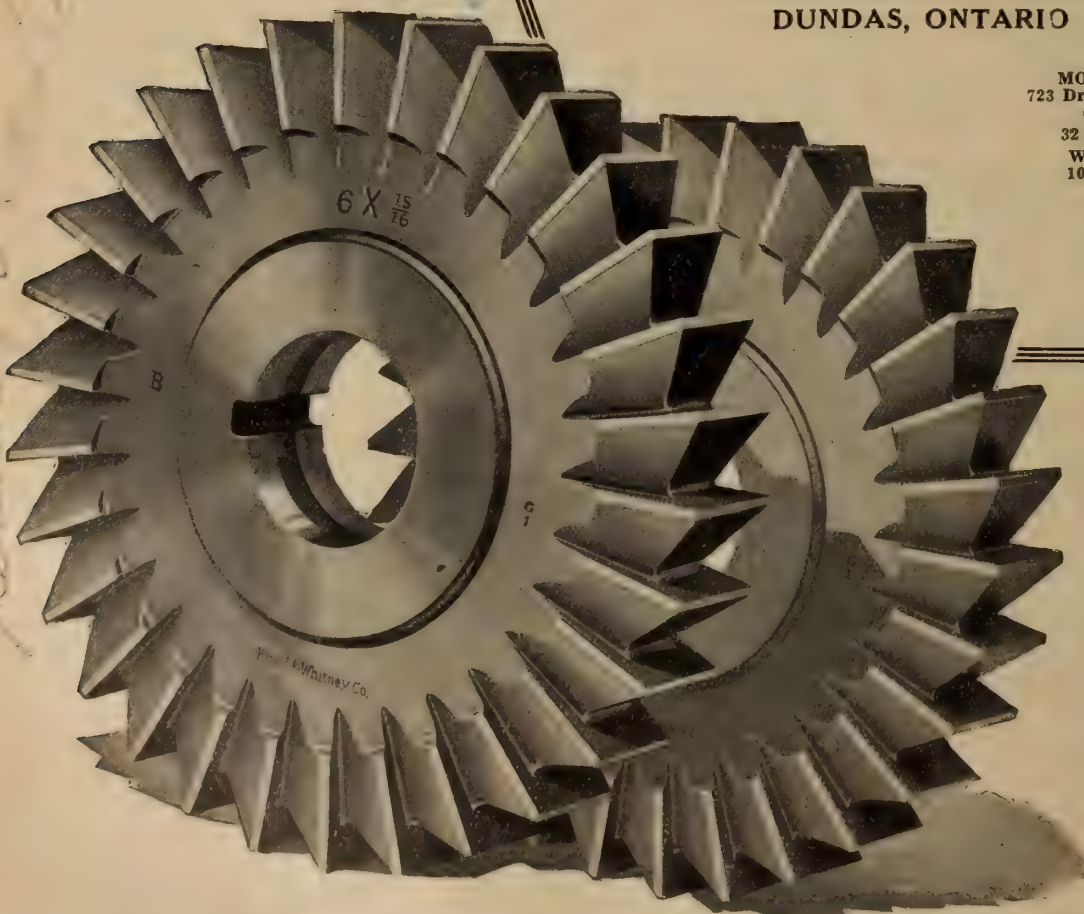
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Canadian Railway and Marine World

August, 1923

The Peace River Country and Railway Connection to the Pacific Coast.

Considerable speculation has been aroused recently with respect to the probabilities of early and extensive railway construction in the Peace River district, in northern Alberta, and the effect it would have on the future of the Edmonton, Dunvegan & British Columbia Ry., with its subsidiary, the Central Canada Ry., now in the Alberta Government's hands and operated under a five year agreement by the C.P.R., and also in regard to the Pacific Great Eastern Ry., owned and operated by the British Columbia Government. These two railways as projected originally, were intended to connect at the Alberta-British Columbia boundary, passing through the central portion of the districts in question. Reports credit the C.P.R. with the intention of taking over the two lines, either in whole or in part, and building a connecting section to Prince George, B.C., also, the completing of the P. G. E. Ry., between Prince George and the present end of track, a few miles north of Quesnel. On their recent trip over the C.P.R. Western Lines, Grant Hall, Vice President, Montreal, and D. C. Coleman, Vice President, Western Lines, Winnipeg, were interviewed as to the C.P.R. doings in the region mentioned, and as to the company's intentions, but they both refrained from giving any information. It may be taken for granted, however, that the C.P.R. is making investigations in the region, and that upon the reports furnished by the engineers, a policy may be developed, which will result in some movement being made for the development of this large and promising area, which is sometimes referred to as the last northwest.

The investigations which gave rise to the speculations referred to above, were those, which were begun towards the end of June, and which were completed in July, by W. A. James, Assistant Chief Engineer, C.P.R., Western Lines. A press report states that he started from Ashcroft, B.C., on the C.P.R., and proceeded northerly to the Pacific Great Eastern Ry., followed that line into Quesnel, and thence to Prince George along the practically completed right of way, and travelled from Prince George to Peace River by canoe. He was interviewed there as to the purpose of his journey, but declined to give any information beyond the fact that he had made the trip from Prince George in eight days, including a day's delay crossing the portage at Hudson's Hope. He is also reported to have stated that a party under Major C. C. Crysdale, of Vancouver, had gone into the country to check up on previous surveys; that Mr. Macauley, a mining engineer with another party, was investigating the mineral resources in the Hudson's Hope region, and that a third party was looking over the timber resources. Upon receipt of the reports from these parties he would make a report which might lead to developments, but the object of all parties in the field was simply to secure information. Mr. James subsequently continued his trip from Peace River

Crossing, along the Peace River, Fort Vermillion being his objective.

T. C. McBride, M.P. for Cariboo, B.C., who returned to Vancouver, July 10, from Ottawa, is reported to have stated, in an interview, that the Peace River district has an area of 74,000,000 acres, the greater portion of which is good for agriculture, 43,000,000 acres being in Alberta and 31,000,000 in British Columbia, of which latter acreage the Dominion Government owns 3,500,000 acres. Sandford Fleming, then the Dominion Government's Chief Engineer for the Canadian Pacific Ry., in his report for 1880, on the surveys, describes this territory as practically extending from Lesser Slave Lake westerly to the Rocky Mountain foothills, and from latitude 54 to latitude 59, but not all equally fertile. The fertile areas form a plateau, generally about 2,000 ft. above the sea; drained by rivers running in deeply eroded channels, ranging in many places 600 to 700 ft. below the ground level. The less fertile areas are to be found bordering the Athabasca River valley, south of Lesser Slave Lake; there are considerable swamp areas east of Smoky River, near Sturgeon Lake, and some smaller areas elsewhere; and there is a fair amount of original forest, and of second growth timber. Alexander Mackenzie discovered the Peace River and explored it to its source in 1793, and the territory was further explored by Sir George Simpson in 1829. Sandford Fleming went through the country to the coast in 1872 in connection with the reconnaissance survey for the C.P.R., and in the same year the Peace River pass, and the territory on both sides of the divide, were investigated by C. Horetzki and Professor Macoun, and the Pine River pass was investigated by Joseph Hunter in 1877, and surveyed by H. J. Cambie in 1879. These surveys were made prior to the Government's decision to adopt the Yellowhead Pass route to Port Moody, for the C.P.R., in 1879. This work was abandoned subsequently for the present route via Hector, at a summit level of 5,332 ft. in the Rocky Mountains, and a second summit in the Selkirk range of 3,787 ft. at the Rogers Pass tunnel. The Peace River area was again looked over by Canadian Northern Ry. engineers and by Grand Trunk Pacific Ry. engineers, with the result that both these railways were built through the Yellowhead Pass, with its elevation of 3,646 ft. The Canadian Northern Ry., however, kept in mind the necessity of a railway to the Peace River district, and began the construction of a branch line from Peace River Jct., mile 35 from Edmonton, which now terminates at Whitecourt, 72 miles, and is headed for either the Pine River or the Peace River Pass. The Canadian National Rys. have therefore an interest in the Peace River area, and the Dominion Parliament recently voted \$50,000 to provide for surveys and investigation of a railway from a point on the C.N.R. toward Peace River. This connection, it is stated, is to be surveyed from Brule, 199 miles west of Edmonton, northerly

to Grande Prairie, approximately 380 miles, which would give a route of about 950 miles from Grande Prairie to Vancouver, as against 1,175 miles by the present railway connections. The construction of a branch line from Prince George, by the Canadian National Rys. via the Peace River Pass, which has an elevation of 2,630 ft., was advocated by Mr. McBride in the interview referred to. Such a line would give the Peace River district an outlet to the Pacific coast at Prince Rupert, of approximately 790 miles.

The Edmonton, Dunvegan & British Columbia Ry. extends from Edmonton to Spirit River, 361 miles. Grading has been done across the Spirit River for 52 miles further to the Alberta-British Columbia boundary at Pouce Coupe; and there is a branch line from Spirit River to Grande Prairie, 45 miles. The Central Canada Ry. extends from McLennan, mile 266 from Edmonton, to Berwyn, mile 71, crossing the Peace River at mile 48. The Alberta Legislature has provided \$410,000 for the construction of a 15-mile extension of the Grande Prairie branch, westerly from Grande Prairie to near Lake Saskatoon, and \$331,000 for the construction of a 13-mile extension of the Central Canada Ry. from Berwyn westerly. Arrangement for the construction of these extensions are being made between the Alberta Government and the C.P.R., which operates the lines under a lease. This lease, which was entered into in July, 1920, is for five years, and contains an option of purchase which may be exercised at any time during the currency of the agreement. It was entered into with the Alberta Government, when the latter took over the lines from the McArthur interests, the Union Bank being a party to the contract.

The Pacific Great Eastern Ry. was surveyed originally from North Vancouver to Squamish and thence to Prince George, and is completed and in operation from North Vancouver to Whytecliffe, 13.7 miles, and from Squamish to Quesnel, 348 miles. Grading is practically completed to Prince George, approximately 80 miles, and track has been laid from Quesnel to Cottonwood River, 17.5 miles and from Prince George to Red Rock Creek, 18 miles, but no work has been done thereon since 1922. Subsequently provision was made for the extension of the line from Prince George to the British Columbia-Alberta boundary, and for its connection with the Edmonton, Dunvegan & British Columbia Ry., and preliminary surveys were made, but no construction was started. Later on there was an investigation into the promotion of the company, owing to the heavy cost of construction, with the result that the undertaking was taken over by the British Columbia Government, which has since found the funds for the work, as well as for the deficits in operation, the liability of the province, at the end of 1922, in respect of the line, being about \$40,000,000. In 1919 further surveys for the extension to the inter-provincial boundary were made, and in

1920 C. Williams reported on alternative routes, via the Pine River Pass, one being a direct one 316 miles in length, and the second via Vanderhoof and Hudson's Hope, 426 miles in length, the estimated cost of construction in either case being approximately \$18,000,000. In 1919, a survey was also made from Clinton, mile 167.2 from Squamish, for a branch line to Ashcroft, to effect a junction with the C.P.R., and a location showing a route of 41.5 miles on a 1% gradient, except for 6.9 miles at the Ashcroft line, was laid down. In 1922, the B.C. government employed J. G. Sullivan, consulting engineer, Winnipeg, and formerly Chief Engineer, C.P.R., and Col. J. S. Dennis, Chief Commissioner of Colonization and Development, C.P.R., and W. P. Hinton, formerly Vice President and General Manager, Grand Trunk Pacific Ry., to report on the line, its traffic possibilities, and the resources of the country through which it runs. Messrs Sullivan and Hinton concurred in recommending the abandonment of the line from Squamish to Clinton; Mr. Sullivan expressed disapproval of the completion of the line from Quesnel to Prince George; and favored the construction at some time of a line from Clinton to Ashcroft, using the salvaged material from abandoned portions of the line; while Mr. Hinton favored completing the line to Prince George, and the construction of the Clinton-Ashcroft line, thus giving a line through a country where there are traffic possibilities, and making the property more attractive to other companies to lease and operate under suitable conditions. Mr. Sullivan stated that the traffic moving into the Peace River country did not warrant the construction of a line from Prince George either via the Parsnip River and Pine River Pass, or to Grande Prairie.

British Columbia and Alberta Rate Appeal.—An Ottawa press dispatch of July 9, stated that British Columbia and Alberta's rate appeal to the Dominion Cabinet will be heard on Aug. 9. The appeal is from the Board of Railway Commissioner's decision in the rates equalization case, full details of which were given in preceding issues of Canadian Railway and Marine World, and has to do chiefly with British Columbia's demand for the removal of the mountain differential scale. The Winnipeg Board of Trade has given notice that it will oppose the appeal, in so far as class and distribution rates are concerned, but not as concerns the equalization of grain and other commodity rates, and has retained Isaac Pitblado, K.C., to represent before the Cabinet. Details of the B.C. and Alberta argument for the equalization of grain rates were given in Canadian Railway and Marine World for June, pg. 274.

U.S. Coal Cars Distribution.—The Interstate Commerce Commission has ordered that after Sept. 1, U.S. railways, and owners of private coal cars, may no longer assign them to particular bituminous coal mines with which they have contracts for their own fuel supply, in excess of the pro rata share of such mines of the total car supply. Commissioner Potter, in a vigorous dissenting opinion, stated that the majority decision would have the effect of making even worse the present coal situation in the U.S., wherein there are twice as many mines as needed, paying miners double the wages they should be receiving, and enabling them to earn a reasonable weekly wage in three days work.

Toronto, Hamilton & Buffalo Railway Co's Annual Report.

The T. H. & B. Ry. Co's directors' report for the calendar year 1922 has been issued over the signature of J. N. Beckley, President. Following are extracts:—

The report covers the operation of mileage as follows: Main line, 79.88; branches, 20.07; lines operated under trackage rights, 4.36; total, 104.31.

crease, \$47,269.03; maintenance of equipment, decrease, \$71,297.16; traffic expenses, decrease, \$1,765.79; transportation expenses, decrease, \$140,812.69; miscellaneous operations, increase, \$2,508.70; general expenses, decrease, \$9,369.19. The decrease in operating expenses was accomplished mainly through reductions in force and wages, in effect July, 1922.

Railway Operating Income.		
	1922	1921
Rail operations		
Revenues	\$2,444,381.42	\$2,677,984.51
Expenses	1,917,637.01	2,185,642.07
Net revenue	\$526,744.41	\$492,342.44
Per cent. of expenses to revenues	78.45	81.61
Railway tax accruals	\$76,488.04	\$112,379.64
Uncollectible railway revenues	148.75	124.04
	\$76,636.79	\$112,503.68
Railway operating income	\$450,107.62	\$379,838.76
Other Income.		
From lease of road	\$27,705.17	\$21,654.71
Miscellaneous rent	11,805.04	10,768.73
Miscellaneous non-operating physical property	24,477.57	24,377.42
Dividend income	40,000.00	
From funded securities	938.61	2,750.05
From unfunded securities and accounts	6,722.04	1,384.12
Joint facility rent income	46,707.91	44,716.60
Hire of equipment-credit balance	176,631.91	164,026.18
Miscellaneous income	9,543.97	69,943.82
Total other income	\$344,532.22	\$339,621.63
Gross income	\$794,639.84	\$719,460.39
Deductions from gross income		
Miscellaneous rents	\$1,356.60	\$526.05
Interest on funded debt	226,825.00	233,575.02
Interest on unfunded debt	5,238.92	29,087.26
Miscellaneous income charges	22,136.53	111,112.18
Joint facility rents	16,679.83	9,908.20
Total deductions from gross income	\$272,236.88	\$384,208.71
Net income	\$522,402.96	\$335,251.68
Dividends, 6%	270,750.00	270,750.00
Surplus transferred to profit and loss	\$251,652.96	\$64,501.68
Amount to credit of profit and loss, Dec. 31, 1921		\$3,262,661.20
Add: Surplus for 1922		251,652.96
		\$3,514,314.16
Deduct: Sundry adjustments		540.75
Balance to credit of profit and loss, Dec. 31, 1922		\$3,513,773.41

The total operating revenues were \$2,444,381.42, a decrease from the previous year, of \$233,603.09. The greater part of this decrease is in freight revenue, the total for the year being \$1,666,212.12. This is \$168,475.37 below 1921, the drop in revenue being due principally to falling off in coal traffic because of the protracted coal strike. Passenger revenue, due to a reduction of approximately 20,000 passengers carried, decreased in even greater proportion than freight, the total of \$562,017.99, being a decrease of \$87,739.35 from 1921. The express revenue earned, \$66,917.63, was an increase of \$36,065.04, due to increased compensation and adjustments made under the provisions of the Uniform Express Contract. The reduction in freight earnings was also reflected in switching revenue, the total of \$92,755.68 being \$4,832.56 lower than in 1921. A similar condition prevailed with demurrage revenue, which totalled \$10,439.31, a decrease of \$5,706.91. Dining and buffet revenue was \$28,649.12, a decrease of \$775.21. This was a natural consequence with the reduction in the number of passengers carried. The ratio of expenses to earnings was 78.45% which is 3.16% lower than in 1921.

Operating expenses were \$1,917,637.01, a reduction of \$268,005.06. With but only one exception operating expenses, taken by groups, showed decreases, as follows: Maintenance of way and structures, de-

The directors authorized the establishment of a pension system, effective July 1, 1922, providing for the retirement of employees upon attaining the age of 65. The monthly allowance will be on the basis of 1%, for each year of service, of the average monthly pay received for the 10 years preceding retirement, with a minimum pension to each individual of \$10 a month.

The steel car ferry boat Maitland no. 1, owned and operated by the Toronto, Hamilton & Buffalo Navigation Co., was in service throughout the entire year, with the exception of a lay-up of 8 weeks. The net loss from operation of the T. H. & B. Navigation Co. for the year was \$17,746.88, principally due to the absence of coal tonnage because of the coal strike during the summer.

In spite of the falling off of business and handicaps consequent thereto, the T. H. & B. R. Co. has operated with results which are very encouraging. A dividend was paid, all outstanding notes, amounting to \$277,000, were taken up, and a substantial surplus obtained. The property was maintained and is in excellent condition.

The following are directors for the year ending June 5, 1924: J. N. Beckley, President; E. W. Beatty, Vice President; E. D. Bronner, Grant Hall, A. H. Harris, D. W. Saunders, W. L. Scott, Lord Shaugnessy, A. H. Smith, W. P. Torrance and W. K. Vanderbilt.

Machine for Making Tie-plugs at Moncton.

An efficient and economical machine for the manufacture of tie-plugs from waste material has been built and is in operation at the Canadian National Rys. shops at Moncton, N.B., its arrangement being shown in the accompanying illustration. The machine is operated by a 10 h.p. motor, connected by belt drive to the main driving shaft pulley, and the planer knife shaft is driven by two belts, one on each side of the table. The sprocket wheel and cam shaft, in line below the planer knife shaft, is driven by means of sprockets and chain, and the cam on the right side of the shaft is connected to a feed arrangement directly above the main driving shaft. Two 8 in. crosscut saws are located ahead of the planer knives, to point the plugs and cut them to length. These saws are driven by belt from the main driving shaft to a counter-shaft, from the latter to the saw arm holder shaft by a half turned belt, and from the saw arm holder shaft to the

the crosscut saws, where the first plug is sawn off by the first saw and pointed at one end only. The plugs are then moved forward 9½ in., the second saw cutting the first and second plugs to length, while the first saw, equipped with a special cutter on each side, cuts and points plugs 2 and 3. This is repeated as the machine continues running, the plugs being pushed forward to the end of the table, where they fall into the bag placed to receive them. The machine's capacity is from 60 to 75 plugs a minute.

We are indebted to G. E. McCoy, Superintendent of Car Equipment, Atlantic Region, Canadian National Rys., Moncton, N.B., for the information on which the foregoing is based.

Duty on Creosoted Ties, Etc.

J. A. Clark, Burrard, B.C., asked in the House of Commons recently what duties, if any, are payable on creosoted piling, railway ties, constructional timbers, lumber, planks and cross-arms; also on creosote. The Minister of Customs

for use on telephone or telegraph poles, are subject to duty at the rate of 17½% ad valorem, British preferential tariff, and 25% ad valorem, general tariff. Coal tar creosote oil of specific gravity heavier than water, is free of customs duty, but, when of specific gravity not heavier than water, it is subject to duty at 15% ad valorem, British preferential tariff, and 17½% ad valorem, general tariff."

British Locomotives in 1922.

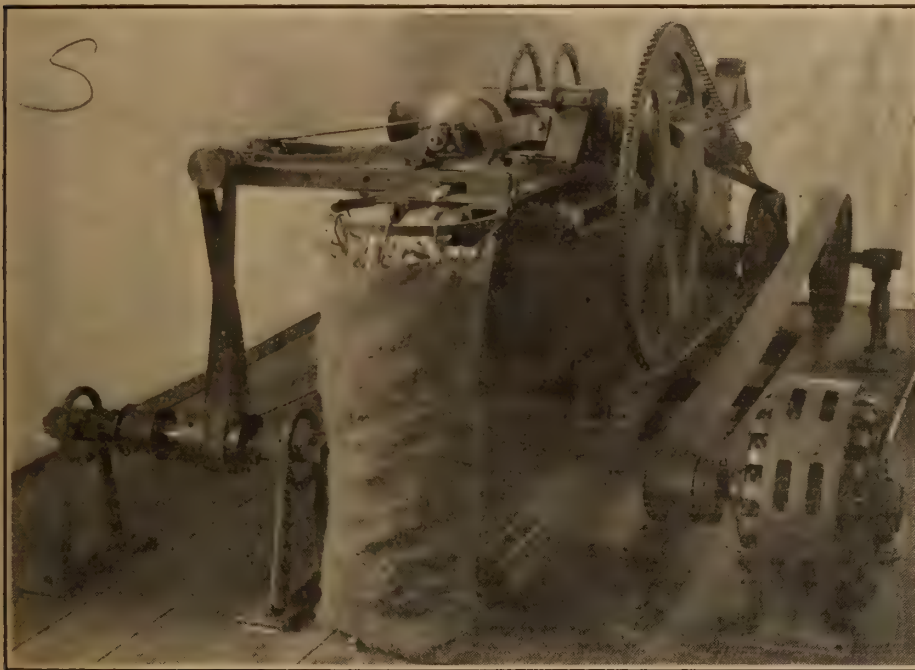
The year 1922 was not marked by any widespread advancement in locomotive design in Great Britain, although there were one or two departures from what is commonly accepted as standard practice, but on the other hand the number of existing types, with the most modern characteristics, was increased on many of the railways, and types and wheel arrangements which were uncommon a short time ago are now more ordinary, on account of the 1922 developments.

In commenting on locomotive design and construction progress in Great Britain in 1922, the Railway Gazette, London, states that "The 4-6-2 and 4-6-4 wheel groupings belong to the most advanced categories of locomotives in this country, and both have been adopted on a wider scale during the past year. The Pacific type 3-cylinder locomotives of the Great Northern and North Eastern Railways mark another step forward in the evolution of the locomotive in Great Britain, and classify, as a standard, a type which hitherto was always regarded, except in tank engine practice, as a very uncommon one. The wheel arrangement makes possible a very large and efficient boiler, which, in its turn, brings into the range of possibility the use of a much increased cylinder volume. This, together with a 20-ton load on each of 3 coupled axles provides a very powerful and efficient engine."

The 3-cylinder Pacific locomotives for the North Eastern Railway were described, and drawings were given, in Canadian Railway and Marine World for Nov., 1922, pg. 562. Favorable comment regarding the possibilities of 3-cylinder locomotives has been evident in engineering and technical circles throughout the past year, higher torque in starting, decreased dynamic augment and correspondingly reduced track stresses and a higher percentage of power derived being among the advantages claimed.

1922 also saw in Great Britain the adoption of Pacific type locomotives, with 2 cylinders 21 x 28 in., on the London & Southwestern Ry., and also the adoption of 4-6-4 tank locomotives on the Glasgow & Southwestern Ry., where their performance and stability under all conditions have gone a long way in disproving the theory held by many to the effect that this so called "symmetrical" wheel arrangement would be unsuitable for locomotives operating at high speeds over frogs and switches, and in a territory where there are many track irregularities. Additional 2-8-0 type locomotives, marked by 5 ft. 8 in. drivers, were added on the Great Western Ry., and near the end of the year a 4-cylinder 0-6-0 type locomotive, with a special arrangement of cranks, was introduced on the North Staffordshire Ry.

Departures from standard practice included the electric locomotives designed by Sir Vincent Raven for express passenger service, and the Ramsay condensing turbine electric locomotives, mentioned in a preceding number of Canadian Railway and Marine World.



Tie Plug Machine, Canadian National Rys.

saw shaft. The saws are raised and lowered by a cam arrangement on the right side of the machine. This cam shaft is placed centrally below the crosscut saw, and is driven by a sprocket chain connected to the sprocket wheel shaft.

The material of which the plugs are made consists of waste edgings from the manufacture of sheathing, culls from the lumber yard, planing mill, etc., and other waste, sawn into strips of 1 x ¾ in. section, and in operation these strips are fed into the machine, which is equipped with a feed roller, and are moved forward 9½ in. at a time, which distance is equivalent to the length of two plugs. The planer knives mounted on the planer knife shaft have a downward extension on the left side, to plane the plugs to their proper width, while the upper surface planes the plugs to the required thickness, and bevels them, in the one operation. The bevel on the plugs is made by means of the cams on the sprocket wheel shaft raising and lowering the planer knife shaft. After the first two plugs are shaped, they move forward to

and Excise replied: "Wooden piling, not further manufactured than sawn or split and creosoted, is free of customs duty. Creosoted railway ties of wood are free of customs duty. Creosoted constructional timbers, not further manufactured than sawn or split and creosoted, are free of customs duty, but, when further manufactured than sawn or split and creosoted, are subject to duty at the rate of 17½% ad valorem, British preferential tariff, and 25% ad valorem, general tariff. Lumber, not further manufactured than sawn or split and creosoted, is free of customs duty, but, when further manufactured than sawn or split and creosoted, is subject to duty at the rate of 17½% ad valorem, British preferential tariff, and 25% ad valorem, general tariff. Planks, not further manufactured than sawn or split and creosoted, are free of customs duty, but when further manufactured than sawn or split and creosoted, are subject to duty at the rate of 17½% ad valorem, British preferential tariff, and 25% ad valorem, general tariff. Creosoted wooden cross arms

Government Investments in Canadian National Railways.

The following statement of the aggregate investment in railways under Dominion Government operation and control, up to Dec. 31, 1921, has been compiled in the Railways and Canals Department from the consolidated balance sheets of the Canadian Northern, Grand Trunk Pacific, Grand Trunk, and Central Vermont Rys., and from the Departmental Accountant's statement. It includes capital investment in road and equipment, acquired securities, sinking fund, improvements on leased properties, investments in affiliated and subsidiary companies, lands unsold, etc.:

Canadian Northern System.....		\$681,822,115 00
Total long-term or funded debt.....		\$1,842,582,740 45
Canadian Government Railways—		
Intercolonial	\$135,508,770 66	
Prince Edward Island Railway.....	12,836,775 49	
Transcontinental Railway	168,487,927 03	
Hudson Bay Railway.....	20,536,106 28	
Quebec bridge	14,831,742 99	
Branch lines	23,372,683 43	
Rolling stock	39,864,147 80	415,438,153 65
Grand Trunk Pacific.....		256,768,407 18
Grand Trunk Railway Company of Canada.....		512,687,282 20
Central Vermont		25,861,823 76
Total book value of investments.....		\$1,892,577,781 82

Funded Debt and Interest Obligations

As against this, are the following liabilities carrying fixed charges:—		
Canadian Northern—		
Long-term funded debt.....	\$302,339,007 36	
Debenture stock	24,999,388 00	
Equipment trust obligations.....	36,656,000 00	
Dominion of Canada.....	286,279,459 69	\$650,273,855 05
Grand Trunk Pacific—		
Receiver's certificates	34,400,305 12	
Long-term funded debt.....	157,699,714 86	
Dominion of Canada.....	62,809,237 34	
Grand Trunk Railway System (loans)	36,872,142 07	291,781,399 80
Grand Trunk Railway Company of Canada—		
Debenture stocks	155,373,808 34	
Guaranteed stock	60,833,333 33	
Funded debt unmaturing.....	81,132,898 66	
Dominion Government loans and interest.....	76,965,322 10	
Non-negotiable debt to affiliated companies.....	1,789,682 58	
Debt to public.....	14,794,376 00	390,880,421 01
Central Vermont—		
Long-term debt to public.....		9,647,065 00

The above compilation of the book value of the investments in the various government railway properties is as set out in the asset column of the respective balance sheets, and similarly, the figures as to funded debt and interest obligations are taken from the statement of liabilities in each case. The statement does not purport to represent a complete consolidated balance sheet, but merely the two features expressly referred to, viz., the investment in property and the funded debt or stocks which, by reason of a guarantee of interest, are in the same position as securities entering into the funded debt.

The Canadian Northern debenture stock included above does not call for interest until there is a net surplus available for dividends. The loans and advances by the Dominion Government are shown with accrued interest, as that is the way they appear in the respective balance sheets. Stripped of accrued interest, the Canadian Northern advances are \$251,088,248.88, Grand Trunk Pacific, \$50,591,237.10, plus \$31,889,066.56 by receiver's certificates. The Grand Trunk holds \$12,664,205.52 of Central Vermont securities, not including capital stock to be referred to. The public holds the amount shown above.

It has not been customary to reckon interest charges on capital or other expenditure on the Intercolonial, Transcontinental or other lines comprising the original Government Railways group. On this account there had been a capital expenditure to Dec. 31, 1921, of \$415,438,153.

Notice of Railway Accidents to Board of Railway Commissioners.

The Railway Act, 1919, provides as follows: Sec. 285 (1) "Every company shall, as soon as possible, and immediately after the head officers of the company have received information of the occurrence upon the railway belonging to such company, of any accident attended with personal injury to any person using the railway, or to any employee of the company, or whereby any bridge, culvert, viaduct, or tunnel on or of the railway has been broken or so damaged as to be impassable or unfit for immediate use, give notice thereof, with full particulars,

to the Board. The conductor or other employee in charge of the train, place or structure in connection with which such accident occurred, shall as soon as possible after such accident notify the Board of the same by telegraph. (2) The Board may be regulation declare the manner and form in which such information and notice shall be given and the class of accidents to which this section shall apply, and may declare any such information so given to be privileged."

The Board has requested that railway companies submit their respective views as to what amendments should, in their opinion, be made to its general order 361 for the purpose of dispensing with the necessity of reporting accidents attended with minor or trivial injuries.

The C.P.R.'s Bungalow Tourist Camp at Nipigon, Ont., was opened recently, when the company entertained a party of guests from Fort William and Port Arthur from June 30 to July 3. W. M. Neal, General Superintendent, Algoma District, represented the company. Miss Greene is manager of the resort.

C.P.R. Notes Redeemed. — According to notice given April 25, the C.P.R. on July 10, called for repayment the entire issue of \$52,000,000 of 6% note certificates dated March 2, 1914, and repayable March 2, 1924, subject to right of recall on 60 days notice.

The U.S. Government's railway in Alaska has been completed, and President Harding has authorized the Secretary of the Interior to operate it.

Relative Value of Coal and Fuel Oils for Locomotives.

The International Railway Fuel Association is investigating the relative value of various coals and fuel oil available for locomotive use. The relative value of solid and liquid fuels is not represented by their comparative B.t.u. content, principally, because the standby losses with fuel oil are very much lower than where coal is burned. Coal burning locomotives ordinarily arrive at terminals with a considerable quantity of partly consumed fuel in the firebox, and coal is also consumed while locomotives are standing at stations and on side tracks, whereas only a small quantity of fuel oil is required under similar conditions. The results of this investigation, which are to be presented in the form of a paper at the next annual meeting, will be of particular value to the railways in determining the relative prices they can afford to pay for coal and oil fuels. They will also establish the true relative fuel efficiency of railways burning fuel oil in comparison with the coal burning roads. The Interstate Commerce Commission requires railways burning fuel oil to report the equivalent consumption of coal per freight ton and passenger car mile, on the assumption that 3½ barrels of fuel oil is equivalent to one ton of coal.

The International Railway Fuel Association is also going to make the extensive study of locomotive fuels being mined in various localities, and will present at its next annual meeting a symposium on methods best adapted to utilize such fuels as are available. This will relate particularly to the availability of lignite, peat and other low grade fuels for locomotives. The Association also contemplates an investigation of the interrelation of the numerous fuel economy devices available. The result of this investigation, which will be presented at the next annual meeting, will show the savings that can be anticipated from a combination of several locomotive fuel economy devices, such as the brick arch, superheater, feed water heater, syphons, etc. The facts to be developed in this report are of importance to the railways, since the use of several of these devices in combination is becoming quite general.

The American Railway Association has expressed a desire to co-operate actively with the International Railway Fuel Association to put into general practice methods developed and recommended by the latter. Consequently, it will be the latter Association's purpose to devote considerable time to the solution of such detail problems relating to fuel use as are referred to it by the A.R.A. joint committee of fuel conservation, comprising 7 operating officials, 7 purchasing agents and 7 mechanical officials. The most immediate problem now under consideration is that of co-operative research, whereby the testing laboratory facilities of several universities may be utilized by the railways to determine the relative value of new locomotive devices, and comparative efficiency of various grades of coal in locomotive use.

Railway Men's Advance Polls. — The statement of the returning officer at the recent provincial election in Hamilton, Ont., shows that the cost of the advance polls for railway men, who would be absent from home on duty, on the election day, was \$458.47. At one of the two stations, only seven votes were polled.

The Grouping of Railways in Great Britain.

The Railway Act, passed by the Imperial Parliament in Aug., 1921, provided for the amalgamation of the railways in England, Wales and Scotland into four groups, and the constituent companies of each group were given until Dec. 31, 1922, to arrange for the consolidation of 102 subsidiary companies, with the constituent companies with which they were allied, and for the drawing up of plans of amalgamation for the four groups. These plans had to receive the approval of the amalgamation tribunal before they could come into operation.

The companies to constitute the different groups had to deal with three separate matters: 1, The absorption of subsidiary lines allied to or operating in their several territories. 2, The amalgamation of the constituent companies. 3, The position of joint lines. The subsidiary lines consisted of lines owned and operated independently; lines operated independently, but supplied with rolling stock by other companies, and lines owned independently, but leased for operation. Difficulties in arranging terms for absorption arose in connection with the first two of these sections, which caused some delay in the negotiations, but with one or two exceptions, which are to be dealt with by the arbitration tribunal, all these have been got over.

The first amalgamation between constituent companies took place Jan. 1, 1922, when the London & North Western Ry. and the Lancashire & Yorkshire Ry. companies put into effect an agreement which had been negotiated some time previously. Other amalgamations followed, as the plans matured and the only two constituent companies of any of the groups outside the plans are the Caledonian Ry. Co. (the shareholders of which have tentatively approved of the plan) and the North Staffordshire Ry. Co., the negotiations in which case have not been completed. These are both constituent companies of the North Western-Midland-Western Scottish group.

The third consideration in the consolidation had to do with the jointly owned lines, of which there were a considerable number, having a total length of approximately 1,400 miles. Of these about 400 miles will cease to be joint, as the joint ownership was between constituent companies of one or other of the four groups; while the remaining mileage of joint lines is owned as between group and group. The London, Midland & Scottish group and the London & North Eastern group are jointly interested in 585 miles; the L. M. & S. group and the Great Western Ry. Co. in 220 miles; the L. M. & S. group and the Southern group in 105 miles; the L. & N. E. group and the G. W. Ry. Co. in 41 miles; the G. W. R. & S. groups in 9 miles; and the L. M. & S., G. W. R. & S. groups in 5¼ miles; while each one of the groups is separately interested with one or other of the Metropolitan and Metropolitan District Ry. Cos. in altogether 15 miles of joint lines. The L. M. & S. group, in addition to owning 291¼ miles of line in Ireland, is jointly interested in 91 miles along with the Midland Great Western Ry. and the Great Northern Ry. of Ireland; while the Great Western Ry. is jointly interested in 107 miles of line in Ireland with the Great Southern & Western Ry.

The first railway in England, the Stockton & Darlington, for which George Stephenson's locomotive Rocket was built, is included in the mileage of the London

& North Eastern Ry.; the London, Midland & Scottish Ry. includes the Liverpool & Manchester Ry., the second line built, at the opening of which Chancellor of the Exchequer Huskisson was killed. The Great Western Ry. was the champion of the old broad gauge, which was finally abandoned about 1890.

The plans for the amalgamation of the Southern group as the Southern Ry. Co. and of the North Eastern group as the London & North Eastern Ry. Co., were fully completed and approved by Dec. 31, 1922, and these new companies came into existence Jan. 1, 1923. The Great Western Ry. Co. continues its corporate existence, and the plans for the absorption of the subsidiary companies, and the amalgamation of the constituent companies are practically completed, but there are some matters regarding two or three of the subsidiary companies with which the amalgamation tribunal will have to deal. The title of the North Western group has been fixed as the London, Midland & Scottish Ry. Co., but while the absorption of subsidiary companies has been completed, the amalgamation of the constituent companies has not. The shareholders of the Caledonian Ry. Co. have accepted the plan, but it has not been finally approved, and the terms for the amalgamation of the North Staffordshire Ry. Co. have not been settled. So far as operation, however, is concerned, in connection with these two groups, the matter is settled, and when the plans are approved by the amalgamation tribunal, they will be dated as in effect from Jan. 1.

The general plan of amalgamation and absorption consists of the valuation of all outstanding stocks of the various undertakings, and the issue thereof of stock in the enlarged company. About 300 issues of stocks are reported to have been dealt with, and as a result of the amalgamations, the number of railway stocks now on the market is stated to be 34. The total capital of the amalgamated groups, upon the final completion of the work, will approximate £1,500,000,000.

In the following table the mileages given for the several constituent companies include those of subsidiary lines amalgamated, and the proportion of the mileage of joint railways owned:—

London, Midland & Scottish Ry.	Miles
London & North Western Ry. and Lancashire Ry.	2,667.50
Midland Ry.	2,107.75
North Staffordshire Ry.	220.75
Furness Ry.	158.00
Caledonian Ry.	1,114.50
Glasgow & South Western Ry.	493.50
Highland Ry.	506.00
London & North Eastern Ry.	
North Eastern Ry.	1,757.75
Great Eastern Ry.	1,191.25
Great Northern Ry.	1,051.25
Great Central Ry.	729.00
Hull & Barnsley Ry.	106.50
North British Ry.	1,378.00
Great North of Scotland.....	334.50
Great Western Ry.	
Great Western Ry.	3,005.00
Barry Ry. & Dock Co.	68.00
Cambrian Ry.	295.25
Rhymney Ry.	51.00
Cardiff Ry.	11.75
Taff Vale Ry.	124.50
Alexandra Docks & Ry. Co.	10.25
Southern Ry.	
London & South Western Ry.	1,020.50
London, Brighton & South Coast.....	457.25
London, Chatham & Dover, South Eastern Ry. and South Eastern & Chatham Managing Committee.....	637.75

The following have been appointed General Managers of the new groups, the head offices of which are all in London: London, Midland & Scottish Ry., Arthur Watson, formerly General Manager, Lon-

don & North Western Ry. London & North Eastern Ry., R. L. Wedgewood, formerly General Manager, North Eastern Ry. Great Western Ry., F. J. C. Pole, formerly General Manager, Great Western Ry. Southern Ry., Sir H. A. Walker, K.C.B., formerly General Manager, London & South Western Ry.

The route miles of the running lines of the four companies as at Dec. 31, 1922, covering all the amalgamations, whether completed or pending before the Amalgamations Tribunal, are stated in the companies' reports to be as follows:—London, Midland & Scottish Ry., 7,370 miles; London & North Eastern Ry., 6,676 miles; Great Western Ry., 3,703 miles; Southern Ry., 2,114 miles.

Efficiency and Economy of United States Railway Management.

The Interstate Commerce Commission passed the following order, recently: Sections 12 and 15 (a) of the Interstate Commerce Act being under consideration, and the Commission desiring to know whether expenditures of carriers by railroad subject to the act, for the maintenance of equipment, have been reasonable, and to keep informed as to the manner and method in which the business of such carriers is conducted, with especial reference to the furnishing of car service, and to have full and complete information necessary to perform its duties; and having under consideration the question as to the efficiency and economy of management of such carriers; with a view to making such order or orders as may be appropriate under the act: It is ordered, that the Commission, on its own motion and without formal pleading, enter into a proceeding of inquiry and investigation into and concerning: whether expenditures by such carriers for the maintenance of equipment have been reasonable; the manner and method in which the business of such carriers is conducted, with especial reference to the furnishing of car service; and, whether the courses adopted by such carriers in the maintenance of equipment and in providing car service have been efficient and economical, and whether the service provided has been reasonably adequate.

The New York Central Rd. is making good progress with building the Castleton cutoff, consisting of about 27 miles of double track, a high-level double track bridge across the Hudson River, a mile south of Castleton, and a large classification yard at Feura Bush, where the cutoff will connect with the West Shore Rd. main line to Buffalo. The bridge will connect at the east end with the Boston & Albany and N.Y.C. main line, and at the west end with the West Shore Rd. It is designed to relieve congestion at Albany, N.Y.

Rutland & Noyan Ry.—The Dominion Parliament has authorized the company to lease its railway and undertaking to the Rutland Ry. Co., incorporated in the State of Vermont. The R. & N. R. is 3.39 miles long, and connects the Canadian National Rys., G.T.R. line, at Rouses Point, with the Rutland Ry. at the International Boundary. (March, pg. 119.)

Steel Rail Order.—A press report states that the C.P.R. has ordered 35,000 tons of steel rails from Algoma Steel Corporation.

Canadian National Railways' Branch Lines Construction Programme Rejected.

When Canadian Railway and Marine World for July went to press, the bill introduced by the Minister of Railways, Hon. G. P. Graham, to authorize the Governor in council to provide for the construction by the Canadian National Ry. Co. of over 1,000 miles of railways, at a cost of \$28,307,000, full details of which we gave in our July issue on pg. 340, had been passed by the House of Commons, and sent on to the Senate, where it was read the first time in due course. On June 29, Senator Dandurand, Government leader in the Senate, moved its second reading, and the Opposition leader, Sir James Lougheed, moved the six months hoist. In the course of a lengthy debate, it was shown that being a money bill, it could not be amended by the Senate, but must either be accepted in full, or rejected. The late date in the session at which it was brought down was criticized, as well as the departure from the usual practice of including the amounts required in the regular estimates, and suggestions were made that separate bills should be introduced for each line, so that some might be authorized and others rejected by 47 to 10, several Liberal senators voting with the Conservatives in the majority. The Government did not make any further attempt to secure the appropriations desired, or to prolong the session so that bills which might have been more acceptable could have been introduced in the House of Commons, and sent on to the Senate, and Parliament was prorogued on the following day, June 30.

The C.N.R. President, Sir Henry Thornton was on a trip to the Pacific coast at the time, and is reported to have said, in speaking at Jasper, Alta., on July 10, "The Senate's action does not necessarily mean that all branch lines construction must be forever abandoned. I don't know, of course, what action the Government will take now, but my guess is that the whole programme as originally outlined will be offered to the House and the Senate next session, when, after full discussion has been given to the various projects, some measure of relief would be offered. The position of the Canadian National Rys. in reference to the whole branch line construction proposition seems to have created the impression in certain circles, I gather, that the branch line programme originated exclusively in the minds of the directors and myself, and was planned with a view to securing control of the expenditures of large sums of money. This impression is incorrect. Here is what happened: Soon after I came out it was explained to me that we would have to build some branch lines in the west to consolidate the position of the system, partly to open up the country and relieve distress among the farmers, many of whom have 30 to 40 miles of a road haul from existing railway points, and last, but not least, to bring into use capital already invested in partly constructed lines. We made a careful review of the whole position and after taking the advice of officers experienced in the west, the directors and myself decided it was advisable to do something along the line suggested by the officers. So we prepared a programme of branch construction extending over a 3-year period. It was simply the recommendation of the directors that went to the government and what happened afterwards is none of my business. As a

matter of fact, the estimates were prepared by intelligent and competent officers, and would have been considered as sufficient for our requirements. The directors asked for the 3-year programme, because they felt that they could not work economically on a hand to mouth plan from year to year, and that a three year programme was necessary in order to co-ordinate the work and get it going economically."

The Minister of Railways is reported to have said in an interview at Ottawa on July 19.—"The Government is helpless to do anything apart from the Longlac-Nakina cut-off, which is, really, a co-ordination of two lines and already under contract. Not a foot of branch lines for the C.N.R. can be built this year. The Government cannot spend money that Parliament does not appropriate. The Senate took the position that the country cannot afford the money for the projected lines. My position is that we cannot afford to do without them. They are essential to the growth of the C.N.R. and the development of the country it serves. The public-owned system needs branches the same as the C.P.R. The idea being propagated that the lines would run into \$100,000,000 is sheer nonsense. The estimates were liberal, having regard to the fact that of the 1,000 miles provided for, 400 are already graded, and in some cases ready for the rails. It is also said that if the Government had provided for the expenditures in supplementary estimates the situation might have been different. Why? The Senate could have rejected the estimates the same as it rejected the bill."

During the third and fourth weeks of July, dispatches from points in the prairie provinces credited Sir Henry Thornton with stating that the question of the C.N.R. Co. issuing bonds, and going on with branch line construction, was being discussed, and that some of the C.N.R.'s vice presidents, including Gerard Ruel, who is also General Counsel, and also Major Graham A. Bell, Deputy Minister of Railways, were going to Winnipeg for a conference with him. A Winnipeg press dispatch of July 24, credited him with having issued the following statement:—"After a very searching conference with the vice presidents of the C.N.R., I have reluctantly come to the conclusion that the company cannot effectively issue bonds in respect of the branch line programme which has been rejected by the Senate. The difficulty is not so much with the power to issue bonds as with respect to the power to expend the proceeds. I wish to make it clear to the public that bonds can only be issued for the construction of such railway facilities as are authorized by Parliament, and as the parliamentary authority which may be given to the company is clearly restricted under the Canadian National Railway Co's Act, sec. 23, which is as follows:—"The company may from time to time construct and operate railway lines or railway facilities or properties of any description in respect to the construction whereof respectively Parliament may authorize the necessary expenditure or the guarantee of the company's securities."

"It will be at once apparent from the reading of this part of the act that the railway company is limited to the construction an operation of lines, facilities or properties in respect to which

Parliament has authorized the expenditure or authorized the guarantee of the company's securities. Consequently, the branch lines which it was proposed to build, or complete, lie, under present circumstances, beyond the scope of the act. Once Parliament authorizes the expenditure or the guarantee of the company's securities for construction purposes, the company may then make an issue, of securities guaranteed by the Crown and proceed with the work. The branch lines bill was for the purpose of authorizing the issue and guarantee of the company's securities, and, this bill, having been rejected by the Senate, the company is entirely without power to carry on the contemplated programme either in whole or in part."

Use of Deckless Locomotives in Road Service.

The Board of Railway Commissioners' Secretary has issued circular 202, as follows:—"The resolution quoted below was submitted to the Board by the legislative representatives of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen: 'The use of deckless engines in road service to be restricted (deckless engines are those with boiler extending back to end of engine frame and wing casting, leaving no foot plate for enginemen except that provided for on front of tender).' After investigation, the Board rules that no more of this type of locomotive shall be put into service on railways under the Board's jurisdiction, except upon application and approval; and that such locomotives as are now in road service on the different railways be worked into switching service as opportunity offers."

Another circular was issued on the same day, as follows:—"Under instructions from the Board, I enclose copy of circular no. 202, and beg to state that this rule has been accepted by the Railway Association of Canada in the following language:—"The so-called deckless engine is a type that is no longer being ordered by the railways, and the engines of this class that are now in road service are, as opportunity offers, being worked into switching service. In those circumstances it appears unnecessary for the Board to issue a general order requiring the railways to do what they are now doing voluntarily.' I am directed further to state that the Board expects the railway companies to concur in and carry into operation the ruling referred to, and to so advise the Board."

The Austrian National Assembly has, according to a press cablegram, authorized the government to relinquish active management of the railways, and turn them over to a body to be created to operate them on purely commercial lines, in the hope of eventually eliminating the present annual deficit of two trillion crowns.

Caterpillars Stop Train.—The Canadian National Rys. Ocean Limited was delayed for 4 hours, recently, between Bathurst and Newcastle, N.B., by caterpillars on the tracks. The swarms of caterpillars in certain sections of New Brunswick are reported to be the worst experienced in recent years.

The Educated Traffic Man.

By A. H. Thorpe, Traffic Manager, Wm. Davies Co., Toronto

While more firms each year are realizing the importance of having an educated traffic man to look after their interests, there are a host of industrial concerns which seem to be satisfied to rely on rates quoted by railway rate clerks, and rate memorandums in the possession of a receiving or shipping clerk, or even the bookkeeper. It is a well-known fact that railway rates are changing from time to time, and the educated traffic man at times finds it difficult to keep posted on these changes, therefore an inexperienced man has a big task before him. From time to time one hears of these men using lists of rates, in passing freight bills, which are years out of date. As long as the railway does not charge them a rate higher than that shown on the list, they are satisfied and pass the account as correct, believing they have the best of the railway, and overlooking the fact, if an undercharge has been made, that it will have to be paid subsequently. The fact that there is a discrepancy between his rate and the one charged by the railway should have been sufficient to tell him it is time to check up his rates list. The experienced man will pay the correct charge, whether this means increasing or decreasing the freight account, knowing this is the most satisfactory, and it enables the purchasing or selling department to arrive at the correct cost.

As stated previously, the trained traffic man finds he has to be on his toes all the time, to keep up to the minute. It is comparatively easy for him to familiarize himself with the correct rates and classification applying to the limited number of commodities handled by his firm, and there is no excuse for him to allow discrepancies to stand for any length of time. If he should pass them when the account is paid, and we all make mistakes, he should find them when he goes over his bills at a later date to audit them.

We must not be too hard on our railway friends in connection with errors, as very frequently the shipper is responsible for the error, by insufficiently describing his goods. Then again the railway rate clerk has to endeavor to keep posted on the correct basis applicable to all classes of traffic, and until our good friends in charge of making and issuing tariffs find a way to further simplify them, he is likely to continue to make errors. Great headway has been made in recent years, in tariff construction, and yet there is room for improvement. To the inexperienced, they are a maze, and, strange to say, we sometimes find the railway official who is not sure what the correct basis is after he has issued the tariff.

As regards the trained traffic man, it seems to me it is important that he keep before him a number of questions for frequent reference, such as: Am I familiar with the freight and express classifications, as they affect our shipments, to see if they are being put up so as to obtain the lowest possible classification? Are my freight tariffs, or lists, of rates up to date? When did I last check of rates up to date? When did I last check them with the railway records? Am I auditing my bills regularly, subsequent to payment? Am I acquainted with the local freight agent, the division freight agent, superintendent and other railway and express officials with whom I do

business? Am I familiar with the manner in which shipments are handled at the local terminals? Am I co-operating with the other departments of our organization so that we may obtain the best results? Have I made a survey of my department, to see if I have any dead wood, and that I am obtaining efficiency from every member of my staff?

In conclusion, let me ask: Do you endeavor to keep your shipping and traffic knowledge to yourself for your personal use, and remain self-centered and small, or do you pass on your knowledge to your assistants and those about you, and thus develop into a real broadminded traffic man?

Protection for Locomotive Crews From Gases in Tunnels.

The U.S. Mines Bureau has developed a pocket canister, illustrated herewith, to protect locomotive men and firemen from the effects of poisonous gases in railway tunnel is well known, while carbon dioxide by breathing sulphurous locomotive smoke while a train is passing through a tunnel is well known, while carbon dioxide, sulphur dioxide and carbon monoxide are constituents of flue gas that are dangerous to life. Carbon monoxide is formed by incomplete combustion, and is



the poisonous constituent that is probably responsible for such deaths as have occurred from breathing air, heavily contaminated with smoke from stalled locomotives, in poorly ventilated tunnels. This gas is insidious in its action on man, because it has no odor, taste or color, and does not irritate the eyes or throat, the irritation from smoke being due to other constituents that are not very poisonous. Carbon monoxide is poisonous, because it combines with the red coloring matter of the blood more readily than oxygen does, and blood that is saturated with carbon monoxide cannot take up oxygen as it should. A few breaths of air containing 2% carbon monoxide will produce unconsciousness and death, almost as quickly as drowning.

A few specific instances of railway men being overcome in tunnels are as follows: 1. In the Giovi tunnel in Italy, many cases of sickness from gas are reported. On one occasion 13 deaths resulted there from a train, of which the crew had been gassed, backing into another train outside the tunnel. 2. On Aug. 11, 1898, a heavy freight train, with three locomotives, stalled in a tunnel near Genoa, Italy. The locomotive crews were overcome by gas, the train got away from them and ran back down the grade, colliding with a passenger train and killing 12 people and injuring 40. 3. On Oct. 9, 1904, a heavy freight train broke in two

in the Grand Trunk Ry. tunnel under the St. Clair River. Six men died from carbon monoxide poisoning, and others were in a serious condition when removed. Several years before, a train stalled in the same tunnel, the locomotive man, conductor and a brakeman dying from gas poisoning. Electrification has removed the danger in this tunnel, however.

The canister developed by the U.S. Mines Bureau is patterned after the small canisters used by U.S. troops during the great war. The canister bottom is perforated with small holes, above which is a screen to retain the granular charcoal and soda lime absorbent, about 200 cubic centimeters (less than ½ pint) of absorbent being used in each. On top of the absorbent is a piece of towelling, to serve as a filter, then a stiff wire screen held rigidly upon the absorbent by springs. A flat metal collar is soldered to the walls inside, half way up and extending ¼ in. toward the center, to prevent gases channeling along the sides. When a canister is placed in the mouth, the thin rubber leaves fit between the lips and teeth, the lugs are gripped by the teeth, and the breath passes in and out through the canisters.

Tests were made in 23 tunnels on the Baltimore & Ohio Rd., between Grafton and Parkersburg, W. Va.; in the Gallitzin tunnels on the Pennsylvania Rd. at the crest of the 1.75% grade extending from Altoona, Pa., and in the Schenley tunnel on the Baltimore & Ohio, in Pittsburgh, Pa., and in all cases it was found that though black, heavy and hot smoke was allowed to pour into the locomotive cab, the canisters furnished the wearers comparatively cool air, free of gas. The effective life of the canisters is about three months.

Prior to developing this pocket canister, the Bureau experimented with the regulation army gas mask, but it was found that, while it afforded protection against the gases met with in warfare, it did not protect against carbon monoxide.

Introduction of Articulated Locomotives in Great Britain.—A development has recently taken place which is of interest to all concerned with the construction and operation of locomotives, viz., the ordering of an articulated locomotive by Vivian & Sons, Hafod Copper Works, Swansea, to handle heavy traffic at the works. The Railway Gazette (London) says: "This will be the first articulated locomotive to run in this country. There have been many good reports of the performances of this type of locomotives from the colonies, and foreign countries, in recent years, not only in the hauling of goods trains at slow speeds, but in passenger service at comparatively high speeds. The articulated locomotive hitherto has never been regarded seriously, where speed is concerned, and it is perhaps chiefly for this reason that its trial in this country in even goods service has not yet come about." The Gazette goes on to say that, now that the orthodox type locomotive is being thrust against the immovable barrier of limiting factors, the factor of speed in articulated locomotives is important, as, if such a locomotive proves economical, vast new fields are opened to the locomotive designer.

S. M. Vauclain, President, Baldwin Locomotive Works, is reported to have stated that the U.S. railways will have to spend \$1,500,000,000 annually to keep pace with the demand for transportation service.

Canadian Pacific Railway Construction, Betterments, Etc.

Musquash River Bridge.—The Board of Railway Commissioners has approved plans for the reconstruction of bridge 65.22, over Musquash River, Shore Line Subdivision, New Brunswick District, by replacing a 120 ft. through Howe truss span with a 100 ft. through pony truss span.

Fredericton Station.—We are officially advised that a contract has been given Rhodes, Curry & Co., Amherst, N.S., to build a new station building at Fredericton, N.B., at an estimated cost of \$45,000, and not at a cost of \$500,000, as stated in daily papers. The building is expected to be completed by Sept. 1. It will be 108 x 28 ft. over all, with a second story in the center to provide offices for the Fredericton & Grand Lake Coal & Ry. Co's Manager. The building will be on concrete foundations, with Wallace sandstone for the plinth course, and tapestry brick external finish above the plinth, with abestos shingle roof. The interior will have pressed brick wainscoting, and oak trim and millwork. The central portion of the building will have a frontage of 25 ft. and a depth of 54 ft. over all. At the front of this area will be the operator's table, separated from the office by a partition, and at the rear of this office will be a hall connecting the men's and women's sections of the waiting room, and giving access to the men's and women's lavatories. Each of the two waiting rooms will be 24 x 28 ft. and will be provided with a separate entrance from the platform. The baggage and express rooms will be alongside the women's waiting room. At each end of the building there will be a shelter 24 x 18 ft.

Douglas Stream Bridge.—The Board of Railway Commissioners has approved plans for alterations to bridge 25.25, over Douglas Stream, St. Johns Subdivision, Quebec District.

The C.P.R. Chateau Frontenac, Quebec, opened a further section of the new addition recently. The main entrance is from St. Louis St., directly opposite Place d'Armes Square, through a large courtyard, and gives access to the offices, reception rooms, etc.

Lachute Subdivision Bridges.—The Board of Railway Commissioners has approved plans for the reconstruction of the following bridges on the Lachute Subdivision, Quebec District: 79.17 and 80.1, over Papineau Creek; and 97.6, over Trepanier Creek.

Ottawa Northern & Western Ry.—The Dominion Parliament has granted extensions of time of two years for the commencement of construction, and of five years for the completion of the projected extension from the present terminus at Waltham, Que., across the Ottawa River, to a junction with the C.P.R. at Chalk River, Ont.

Interprovincial & James Bay Ry.—The bridge under construction at mile 62.5 on this line, which is being built from near Kipawa to the Quinze River, Que., consists of a 23 ft. span on concrete abutments. The concrete work is included in the general contract, and the span is being transferred from another part of the C.P.R. lines, from a bridge which has been reconstructed.

In connection with press reports as to a projected extension of this branch line under construction to the Quinze River

into the Rouyn gold field, we are officially advised that Mr. Hillman, one of the company's engineers made a trip into the country recently, with the Quebec Minister of Lands, to obtain information. Nothing is being done by the company, either in making surveys or in preparing to start construction beyond the Quinze River.

Carberry Subdivision Third Track.—The Board of Railway Commissioners has authorized the building of a third track across road allowance at mile 63.6, Carberry Subdivision, Manitoba District.

Manitoba & North Western Ry.—The Dominion Parliament has granted extensions of time for two years, for the commencement, and of five years for the completion of the following projected lines: From Tuffnell, in Tp. 30, Range 10 or 11 west of 2nd Meridian, northwesterly, northerly and westerly, to a crossing of the North Saskatchewan River in Tp. 49, 50 or 51, Range 14 or 15, west of the 2nd Meridian, and thence westerly to Prince Albert, Sask. From Theodore, Tp. 28, Range 6 or 7, west 2nd Meridian, westerly to a junction with the C.P.R. Pheasant Hills Branch, between Govan and Lanigan, Sask.

The location surveys show the Tuffnell-Prince Albert line have a total length of 210 miles. A contract for grading the first 50 miles from Tuffnell is reported to have been let to Grant Smith & Co. and McDonnell Ltd., Vancouver. The Board of Railway Commissioners has approved of location plans for the line from Tuffnell, mile 0 to 94.26.

Saskatchewan District Locomotive Houses.—Tenders were recently received for the alteration and renewal of heating systems at the locomotive houses at Regina, Moose Jaw, Swift Current and Sutherland, Sask., and for a new system for three stalls at the locomotive house at Hardisty, Sask.

Leader Southeasterly Branch.—The Board of Railway Commissioners has approved of revised route map of the projected branch from Leader, Sask., southeasterly, between miles 44.65 and 49.5.

Pashley Northeasterly Branch.—The Board of Railways Commissioners has approved general location of the branch from Pashley, Alta., 15 miles east of Medicine Hat, northeasterly, between miles 28.77 and 32.49. This line will apparently connect with the branch from Leader southeasterly referred to above.

Bears Paw and Glenboro Washouts.—A press dispatch of July 3 stated that owing to excessive rains, seven miles of the main line, about 15 miles west of Calgary, Alta., had been washed out on July 1 and 2. Calgary papers of July 4 gave illustrations of the damage, which, however, did not bear out the original story. About one mile west of Bears-paw, a small creek rose 27 ft. and carried away part of the bank and the trestle supporting the track, and there were a number of small washouts at Glenbow and eastwards. These caused the holding up of 10 trains, 4 in Calgary and 6 in Banff. Repairs were effected, enabling the delayed trains to get through by the night of July 4, and on the following day traffic was reported to be running smoothly.

Electrification in Western Mountains.—Canadian Railway and Marine World

for July mentioned a Winnipeg press report which credited D. C. Coleman, Vice President, Western Lines, with having stated that surveys were being made of the water power available on the Columbia River, in British Columbia, in the vicinity of the main transcontinental line, and that if the traffic demands and financial conditions warrant it, a start might be made next year in electrifying sections of the main line through the mountains. We are advised that the latter portion of the report was incorrect, and electrification is not likely to be entered upon until traffic necessities demand it, and financial conditions will permit.

Newfoundland Railway Taken Over by the Government.

An act amending the Newfoundland Railway Acts, and another act confirming the agreements for the Humber River development project, were assented to by the Governor in the Newfoundland Legislature, July 11. The passing of these two measures is the culmination of negotiations which have been going on for several years past, between the Newfoundland Government and the Reid Newfoundland Co. The first of the acts settles all outstanding differences between the two in respect to the operation of the Newfoundland Ry. by the abandonment by both parties of all claims, and the payment to the Reid Newfoundland Co. by the Government of \$2,000,000 in 5½% bonds. As a result of this the Government enters into full possession of the railway property and will control and manage it, possibly by a commission. This includes the transinsular railway and its branches, the telegraph, the express company, the steamships and the St. John's drydock. The Reid Co. retains its lands, except 200,000 acres granted in 1904.

The second act confirms an agreement for the development of a water power on the Humber River, the establishment of a paper mill and other industries in connection therewith, which was made with the Newfoundland Power & Paper Co. Ltd., behind which is Sir W. G. Armstrong, Whitworth & Co. Ltd., of England. The company is to issue \$4,000,000 of bonds, half of which is being guaranteed by the Imperial Government at 5¼%, and will be secured by mortgage. A sinking fund is to be provided to clear off the bonds in 25 years. Half of the money will be expended in Newfoundland on the erection of buildings, etc., and the rest in England for machinery and other plant.

In presenting the matter to the Legislative Assembly on June 14, the then Premier, Sir Richard Squires, who has since resigned, stated that the Armstrong, Whitworth Co. would not touch the Humber development project without having the railway situation cleared up, hence the necessity for the agreement with the railway. The bills were subsequently introduced and were put through their various steps, with some minor amendments, by July 5.

The Northern Construction Co., of Vancouver, B.C., has, we are officially advised, a contract for the excavation of a canal, as a part of the Humber River development.

Export Rates from Southern Ontario to Montreal and New York.

The Canadian Pacific and Canadian National Railways complained recently to the Board of Railway Commissioners against the Michigan Central Rd., Toronto, Hamilton & Buffalo Ry., Pere Marquette Ry. and Wabash Rd., tariffs naming export rates from Southern Ontario territory to New York and other Atlantic ports. For many years prior to 1905 the export rates from Chicago, Detroit, Port Huron and intermediate points to Montreal were 2c. per 100 lb. lower than to New York, but from Southern Ontario points the export rates were the same to Montreal as to New York. After a hearing in 1905, the Board of Railway Commissioners issued order 586 prescribing that from Southern Ontario points the export rates to Montreal were to be as much below the export rates to New York as the export rates from Chicago, Detroit, Port Huron and intermediate points to Montreal were below the export rates from such points to New York. The order also prescribed that the ordinary summer class and commodity rates to Montreal were not to be exceeded on export traffic. Shortly after the order was issued, the railways against which the recent complaint was launched issued special tariffs naming export rates to New York, Philadelphia, Baltimore and Boston to meet the reduced rates to Montreal, such lower rates to be in effect only during the portion of the year when export business is possible through Montreal harbor—i.e., the New York export rate was reduced to the Montreal export rate during the summer months, on traffic from Southern Ontario points. This was done until 1917, in which year, due to the exigencies of war, the roads complained against did not see fit to reduce their export rates in the summer to meet the Montreal rate. Reductions were not made again until 1921, and it was because of these reductions that the complaint was launched by the C.P.R. and C.N.R.

Answering the complaint, the T.H. & B. Ry. submitted that the Board's order naming a lower export rate to Montreal than to New York fixed maximum rates only, and not minimum rates, and claimed that it should not be debarred from making rates to meet any competition existing. It pointed out that to take away its right to meet competition would seriously affect its traffic. The other respondent roads argued along similar lines. The C.P.R. and C.N.R. claimed that the other roads had violated the Board's order, for the reason that they put in, during the summer, the same export rate to New York as to Montreal. They argued that if the C.P.R. and the C.N.R. obeyed the order, while the Board allowed the other roads to keep the same rates in effect to New York as to Montreal, the C.P.R. and C.N.R. would have to put in a still lower rate to Montreal, which would, presumably, be again met by the other lines, and so on until the rates got to practically nothing. High insurance rates on the St. Lawrence route, and the smaller number of sailings from Montreal than from New York, were also cited in the complaint. The Canadian Manufacturers' Association, as an interested party, while expressing the opinion that Canadian ports should be favored, as much as possible, for export trade, was in favor of the respondents being allowed to continue to meet the Montreal rate during the summer months.

In a report prepared by W. E. Campbell, the Board's Chief Traffic Officer, and adopted by the Board as its judgment in the matter, he called attention to a report made to the Board by the late Jas. Hardwell, formerly Chief Traffic Officer, in which it was pointed out that before order 586 was passed, the situation had been considered as a purely competitive one. Mr. Campbell considered that the order did not prescribe minimum rates; it was applicable only to normal rates, and not to special rates, which could be put in to meet competitive conditions. He stated that at the time the Board drafted the order cognizance was not given to the possibility of a competitive condition arising, but, it having arisen, he was satisfied that the export rates from Southern Ontario points may be properly be considered as competitive, and that, therefore, the roads complained against could continue to meet the Montreal export rates with those contained in the tariffs on which the complaint was based.

Rules for Pilots on Locomotives.

The Board of Railway Commissioners passed general order 379, April 4, as follows:—Re general order 289, March 24, 1920, prescribing rules relative to the inspection of locomotives and tenders attached thereto: Upon reading the Chief Operating Officer's report and recommendation, the Board orders that the rules be amended by striking out the last paragraph and inserting in lieu thereof the following: "Pilots.—All locomotives in road service, excepting engines operating in strictly international service, on the lines of the Boston & Maine, Maine Central, Rutland, New York Central, and Great Northern Railway companies, shall be equipped with pilots projecting not less than 24½ in. from the back of the upright which the pilot is built on, to the nose of the pilots; the minimum height from the rail to be 3 in.; and the maximum 6 in. Pilots shall be securely attached, adequately braced, and maintained in a safe and suitable condition for service. All such locomotives shall be fully equipped by Dec. 31, 1925."

The locomotive booster, which was described in Canadian Railway and Marine World at the time of its introduction on U.S. railways, and also in connection with tests of booster-equipped locomotives on the Timiskaming & Northern Ontario Ry., is to be tried in England. The first application will be on an Atlantic type locomotive built by the London & North Eastern Ry. some years ago, in connection with which the Railway Gazette (London) says: "These Atlantic type locomotives are still relied upon for working the bulk of the express passenger traffic on the Great Northern section, and they give extraordinarily good results, the boiler and grate being very amply proportioned, whilst the cylinder dimensions are moderate. At the same time the adhesion weight on the 4-coupled wheels is necessarily restricted, and in hauling the very heavy passenger trains up the bank from King's Cross to Finsbury Park, these locomotives are at times somewhat at a disadvantage in dealing with the loads. When weather conditions are adverse, this difficulty naturally increases, but it is to be anticipated that the addition of the booster will overcome the difficulty."

Transcontinental Air Mail Service.

Last year the United States aeroplane mail service flew over 2,000,000 miles without a fatal accident to the aviators. The U.S. Postmaster General has announced that in a few weeks an aerial mail service will make the direct flight between New York and San Francisco in 28 hours. The air mail will start at one end of this flight at noon of one day and by sundown of the next day will deliver the mail at the other side of the continent. The distance is roughly given as 3,000 miles.

The night flying on this trip will be done by an aviator who will leave Chicago in the evening and descend at Cheyenne, Wyoming, at dawn. The entire line of the journey will be marked by lights; at Chicago, Iowa City, Omaha, North Platte and Cheyenne will be great beacons with 600,000,000 candle power. At intervening points, 25 miles apart, will be landing places and search lights, and every three miles between these points lesser lights. From high in air, on clear nights, a path of light will mark the entire line of the night flight. The machine itself will have two powerful searchlights and a wireless service. It is believed that every precaution has been taken for safe and rapid night flying.

Not so long ago—many remember it—it took, not hours, but weeks, to carry mail across the continent. Then the railway came and made the trip within the week. Soon the aeroplane will be doing it in a day.

Canadian National Railways' Insurance.

Senator Dandurand gave the following information in the Senate recently, in answer to questions by Senator Casgrain:—The Canadian National Ry., excepting former government lines, and the Canadian Government Merchant Marine, were insured last year for \$327,046,561, the premiums paid being \$2,637,800. The fire insurance was placed with Western Assurance Co., Union Assurance Co., Lloyd's, London, Cornhill Insurance Co., London, Globe & Rutgers, Alliance Assurance Co., Motor Union Insurance Co., London Guarantee & Accident Co., London & Lancashire Fire, Union Society of Canton, United British Insurance Co. The marine insurance was placed with various English insurance companies, and a small percentage with United States companies. The business was placed through regular brokers, Willis, Faber & Co., of Canada; Hare & MacKenzie, Ltd.; Dale & Co., and Toronto Insurance & Vessel Agency. The Government has no information as to who are the directors of those companies. It is the intention of the Canadian National Ry. and the Canadian Government Merchant Marine to create their own cash insurance reserves, for the adequate protection of all insurable railway and marine property.

U.S. President Harding, speaking at Kansas City, Mo., recently, advocated consolidation of U.S. railways into a smaller number of systems, and declared that government ownership of them would be a "colossal blunder."

Terminal Grain Co. is reported to have been organized at Vancouver, B. C., with \$100,000 authorized capital and A. H. Gale as President, to build an elevator there. It is stated that construction of the first unit will be commenced shortly.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alma & Jonquiere Ry.—The Board of Railway Commissioners has authorized the connection of the C. N. Rys. with the Alma & Jonquiere Ry. near Hebertville, Que. (July, pg. 320.)

The Atlantic, Quebec & Western Ry. and the Quebec Oriental Ry. operated by one management, extend from Matapedia, on the Intercolonial Ry., to Gaspé, Que., 202 miles. New ties are being put in at various points, a press report stating that it is intended to put in 100,000 this year. Additional ballasting is being done between Matapedia and Escuminac, 27 miles.

Burrard Inlet Tunnel and Bridge Co.—The Board of Railway Commissioners was asked, at its sitting in Vancouver, B.C., June 29, to approve amended plans for the proposed bridge across the second narrows of Burrard Inlet, Vancouver, and for leave, in connection with the southern approach to erect an overhead crossing for a roadway, and to install a single track connection with the C.P.R. at station 658,300 on the railway between mile post 124 and 125.

In connection with the resubmission to the ratepayers of North Vancouver City, and North Vancouver District of bylaws to raise funds to buy \$100,000 of stock in the company, and to guarantee the payment of \$257,000 of the company's debentures, the Mayor of North Vancouver City stated that the changes made in the plans provided for the substitution of steel for a large section of the wooden piling originally proposed, and the substitution of a bascule span for the originally proposed old type of swing span. These changes would add approximately \$200,000 to the cost, which would be provided for by the grants of \$100,000 each from the Dominion and the British Columbia Governments. The necessary alterations had been made in the agreements with the contractors—the Northern Construction Co., and Major General J. W. Stewart. The reason for this second vote was to meet some technical demands of bond dealers, and did not involve the ratepayers in any way financially beyond the bylaws passed in Dec. 1922. It was stated that construction was expected to be started within 30 days after ratification of the bylaws, which were approved by the ratepayers on July 4.

A special meeting of shareholders, who in the main represent the municipalities to be served by the bridge, was called to be held July 16, to authorize the directors to issue \$630,000 of series A bonds for construction. (July, pg. 320.)

Calgary & Fernie Ry.—The Dominion Parliament has extended for two years the time within which the projected line from Calgary, Alta., to Fernie, B.C., may be commenced. When the matter was before the House of Commons it was stated that the construction of the railway is a necessary part of an agreement with an English syndicate which is taking over the coal mines, owned by those interested in the charter. (Jan. pg. 8.)

Canadian Niagara Bridge Co.—The Dominion Parliament has authorized the starting of work on the projected bridge across the Niagara River within two years after its building has been approved by the Executive of the United States, the bridge to be completed within five years. The C.P.R. is interested in this bridge through the Toronto, Hamilton

and Buffalo Ry. It is said that the construction will be done by the Michigan Central Rd. (March, pg. 118.)

Edmonton, Dunvegan and British Columbia Ry.—A press report states that it is expected that an early decision will be reached with regard to the starting of construction on the projected extension of the Grand Prairie branch for 15 miles westerly. (March, pg. 320.)

Esquimalt and Nanaimo Ry.—We are officially advised that it has been decided to build a temporary boiler house at Wellington, Vancouver Island, B.C., to replace the buildings burned some months ago, pending a definite decision as to permanent buildings to be built. (July, pg. 320.)

Essex Terminal Ry.—The Dominion Parliament has granted an extension of two years for the commencement of construction of the projected railway from near Ojibway to Pelton, Ont., the line to be completed within five years from the passing of the act. (March, pg. 119.)

Michigan Central Rd.—A press report states that work has been started by the Dominion Construction Co., Toronto, on the extension of the freight yards at St. Thomas, Ont. A construction track has been laid, and the steam shovel work is in progress. (July, pg. 320.)

Midland Ry. of Manitoba.—A press report states that a permit has been taken out for alterations at the company's buildings on Ross Ave., Winnipeg, at an estimated cost of \$20,000.

Montreal, Joliette and Transcontinental Ry.—The Dominion has granted an extension of five years for the construction of this projected railway from Maisonneuve, Que., northerly to Joliette, thence northerly and northwesterly to St. Michel des Saints, and thence to Parent, on the National Transcontinental Ry., 180 miles. (March, pg. 119. See also Montreal to National Transcontinental Ry., June, pg. 279.)

North Shore Ry.—We are officially advised that this railway, running from Adamsville Jct., N.B., on the Intercolonial Ry., via Beersville, to Coalville, 15 miles, has been taken over by the Beaver Coal & Ry. Co. The line has been repaired by putting in new ties throughout. The company is reopening the collieries at Beersville, and was expecting to begin making shipments during July (Jan., pg. 9.)

Quebec Central Ry.—The Dominion Parliament has authorized the company to continue the construction of its Chaudiere extension by diverting and rebuilding the portion of the present line from Beauce Jct. to Beauceville, and building a line from Beauceville to the Famine River and thence to Langeville, and along the St. John River watershed, to a junction with the Temiscouata Ry. at Cabano, about 140 miles; construction is to be started within two years and completed within five years. An extension of time has also been granted for two years for starting construction and of five years for the completion of a projected line from Leeds to a junction with the Scott's-Quebec Bridge line near St. Lambert, 35 miles. (March, pg. 119.)

Timiskaming & Northern Ontario Ry.—The Board of Railway Commissioners has approved of location plans for the first nine miles of the line, being built by the T. & N. O. Ry. Commission, under

the Nipissing Central Ry. charter, from Swastika to Larder Lake. This is the line for which Sinclair Construction Co. has a contract.

A contract has been let to Jeffrey & Stevens, North Bay, Ont., for the erection of an addition to the Commission's office buildings at North Bay, at an estimated cost of \$20,000. (July, pg. 321.)

Vancouver Harbor Railway.—We are officially advised that a contract has been let to Leith, Murry & Co., for rails, fastenings, switches, frogs, switch stands, etc., for the Ballantyne pier section of the terminal railway under construction by Vancouver Harbor Commission. (July, pg. 321.)

The World's Greatest Highway.

Sir George McLaren Brown, European General Manager, C.P.R., has an article in the Royal Colonial Institute's journal, United Empire, under the title mentioned above, in which he says: "Even more than being an expression, a personification, a materialisation of Canada, the Canadian Pacific Ry. is a typical development of the whole spirit of true Imperialism. . . . It has become the imperial highway, linking the old world with the new by land and sea, bridging two oceans and linking four continents." He goes on to show how valuable was this imperial highway to the empire during the war. It was principally through its ocean services that the C.P.R. came into direct touch with the war. On the outbreak of hostilities the Admiralty requisitioned the company's principal ships on both the Atlantic and the Pacific for service as armed cruisers and transports. C.P.R. ships carried over a million troops and passengers on war business between Aug., 1914, and Oct., 1919. They carried over four million tons of cargo and munitions of war and many thousands of horses and mules. Fifteen ships of a total tonnage exceeding 126,000 tons, were lost by enemy action. He tells some stirring stories of the adventures of some of the ships during war service; and concludes his survey of the company's work by a reference to its Colonization and Development Department.

Locomotive Men's Eye Tests.

The Board of Railway Commissioners passed general order 378, April 13, as follows:—Re general order 94, July 24, 1912, prescribing Uniform Rules Governing the Determination of Visual Acuity, Color Perception, and Hearing of Railway Employees: Upon hearing the matter at Ottawa, Nov. 21, 1922, the Canadian Pacific Ry. and the Brotherhood of Locomotive Engineers being represented, and what was alleged, the Board orders that the said rules be amended by striking out the re-examination statement, under the heading "Standards of Visual Acuity," "Class B," and substituting in lieu thereof the following, viz.:—"20-30 combined, not less than 20-50 in either eye without glasses. When combined vision without glasses is not less than 20-50, and either eye not less than 20-70, or nil, and by the aid of glasses combined vision can be brought to not less than 20-30, enginemen must wear glasses. See Rules 8, 9, 10, 13, 15, 17, and 18."

That all the railway companies subject to the Board's jurisdiction reprint their general instructions, quoting general order 94 as amended herein.

Automatic Cut-Off Control for Locomotives.

The Cleveland, Cincinnati, Chicago & St. Louis Ry. has in service an Atlantic type passenger locomotive, and a mikado type freight locomotive, equipped with a device to automatically adjust cut-off, which has been constructed and placed in operation on the strength of reasoning advanced by the company's mechanical engineer, E. S. Pearce, to the effect that there is a certain constant back pressure for each locomotive at which it will develop its maximum operating efficiency. The device operates, on the principle that as locomotive speed changes, and tends to change back pressure from the predetermined most desirable quantity, cut-off adjustment is automatically made and the predetermined back pressure retained. While the function of automatic cut-off control is the same in general principle as that of a governor applied to a steam engine, it is evident that, on account of the greatly varying speeds at which a locomotive is required to operate, there was no possibility of governing locomotive cut-off so as to maintain constant speed, as on a stationary steam engine, and despite the desirability, recognized for years, of some device which would automatically regulate valve travel on locomotives, so as to cause the greatest efficiency to be maintained at all speeds, no progress was made with such a device for the reason that nobody knew of anything of which to make the cut-off a function in operation; that is, because no suitable principle could be found upon which to base the cut-off control.

The reasoning that resulted in the conclusion that cut-off is properly a function of cylinder back pressure, led to some experiments which promise to have far reaching results. The freight locomotive on which the automatic device is applied was used in these experiments, and demonstrated, in what is claimed to be a conclusive manner, that automatic cut-off control will be the means of saving large sums in locomotive operation. On tests with tonnage trains, when cut-off was manually controlled by the reverse lever, with the best locomotive men available handling the locomotive, the trains could not be taken nearly as far up heavy grades, without stalling, as when cut-off was controlled automatically, so as to keep cylinder back pressure at a quantity which previous trials had determined as that at which the locomotive would give its greatest output. The test reports state that the tendency of the locomotive men in handling the reverse lever was to lengthen the cut-off much too soon; they wanted to get over the hill before they came to it, with consequent large wastes of steam.

On the C.C.C. & St.L. mikado locomotive equipped with the automatic cut-off control device, the controller mechanism is contained in a box suspended on the right side of the locomotive, with its top flush with the running board. The mechanism is connected with the exhaust passage at both ends of each cylinder, the pressure lines passing through a pressure retaining valve and unflow fitting, the latter providing a uniform indication of uniform back pressure, without pulsations. Connection is also made with the main reservoir. In starting a train, the reverse lever (a non-creeping power reverse gear responding to small adjustments is used) is put in extreme forward position and the throttle

opened wide. As soon as steam chest pressure exceeds main reservoir pressure, the automatic equipment begins to operate. With increasing speed, back pressure tends to increase until the predetermined most favorable back pressure is reached at about 10 m.p.h. As speed still further increases, back pressure tends to pass this predetermined mark, upon which the mechanism begins to shorten the cut-off, and as speed increases still more the cut-off is further decreased. If the throttle be closed to such a degree that steam chest pressure becomes less than main reservoir pressure, the automatic equipment becomes inoperative, and the locomotive is under manual control, but if the throttle be opened again, the automatic equipment cuts in again. When a grade is encountered, and speed reduces, back pressure begins to drop, and the automatic mechanism will then lengthen cut-off until the reverse lever is again in the corner if necessary.

It is stated that tests have shown a saving of 30% in steam consumption with this device, as against manual control of reverse lever positions, due to the fact that no locomotive man is a good enough guesser to know what combination of speed, throttle opening and reverse lever position will give him the most efficient operation of his locomotive, while the regulation of cut-off to conform to predetermined back pressure will give most efficient operation automatically. It is reported that the C.C.C. & St.L. will equip some 19 locomotives with the apparatus. The mikado now equipped is in regular service, and performing much more efficiently than when the reverse lever was moved in accordance with locomotive men's judgment. In view of the potentially large saving which may be made, it is more than possible that the experiments and results to date are paving the way for the universal application of the most important refinement in locomotive practice since the advent of the superheater.

The Railway Crafts' Organization.

The 2,000,000 men who are employed on United States railways may be divided roughly into three groups. Train service brotherhoods with a membership of about 500,000 locomotive men, firemen, trainmen, switchmen and conductors, constitute the first group. Four of these unions are outside of the American Federation of Labor. Only a small number of switchmen, numbering about 10,000, still remain in the Federation. These are the men that actually take the trains out. They have to do the moving of steam and electric transport.

The second group is the shopmen, known as the Federated Shop Crafts, but more correctly as the unions composing the Railway Employees' Department of the American Federation of Labor. Six international unions of that Federation compose these unions of mechanics. They construct and repair the locomotives, passenger and freight cars, man the locomotive houses and shops and couple up and inspect trains of cars before they are sent out of the terminals.

This is the group which has been on strike. These six international unions are working as an industrial unit, through

their department with headquarters in Chicago. The strike has been carried on by these unions, the six international presidents acting through B. M. Jewell as spokesman. The unions involved, in the order of their importance, are, the Brotherhood of Railway Carmen, International Association of Machinists, Brotherhood of Boilermakers, Brotherhood of Electrical Workers, Brotherhood of Blacksmiths, and Sheet Metal Workers' International Alliance.

The third group of the railway employees is the largest and the least compact. Its numerical strength is estimated variously from 750,000 to 1,000,000. It is composed of the two largest groups of semi-skilled and unskilled workers, the trackmen, trestle builders and shop laborers in the United Brotherhood of Maintenance of Way Employees, which claims over 300,000 workers, and the still larger union known as the Brotherhood of Railway Clerks, Freight Handlers and Station Employees. These compose the bulk of the miscellaneous groups. In addition, there is the Order of Railroad Telegraphers, the Brotherhood of Railroad Signalmen, two small but skilled crafts, the Brotherhood of Stationary Firemen and oilers, composed of men working in the shops and locomotive houses, and two very small groups, the Brotherhood of Railroad Patrolmen and the Order of Sleeping Car Conductors.

Fourteen of the 18 railway labor unions are in the American Federation of Labor. Six of these have solidified and simplified their organization by pooling their strength through the shop crafts organization. The remaining eight are in the closest of communication with the mechanical crafts through the railway employees' department, in which they are also represented.—Bloomfield's Labor Digest.

While the foregoing article presumes only to apply to the U.S., it also has its application to Canada, inasmuch as all the unions mentioned herein (with one exception, that of the Brotherhood of Railroad Patrolmen) have local branches in Canada. In Canada, however, there is also an organization, known as the Canadian Brotherhood of Railroad Employees, which embraces in its membership such railway employees as clerks of all departments, freight handlers, foremen, checkers and porters, car checkers, baggage masters, parlor, sleeping and dining car service employees, locomotive wipers, ash-pit men, crane men, laborers and express company employees.—Labor Gazette.

Hydro Electric Power Commission of Ontario.—Shortly after the recent Ontario general election, Col. D. Carmichael, who was a member of the Drury Government without portfolio, and was appointed by it as a member of the Commission, resigned voluntarily. J. G. Ramsden, of Toronto, who was appointed a member of the Commission by the Drury Government a few months ago, was asked to resign by Premier Ferguson a few days after the latter assumed office, but refused to do so, and was therefore dismissed. The Ferguson Government has appointed J. R. Cooke, M.L.A., for North Hastings, as a member of the Commission, and has asked the interested municipalities to submit names of persons from which the Government may select a member of the Commission to represent the municipalities. Sir Adam Beck, who is a member of the Ferguson Government without portfolio, remains as Chairman of the Commission.

Canadian National Railways Construction, Betterments, Etc.

Lunenburg Subdivision.—The Board of Railway Commissioners has authorized the rebuilding of the bridge carrying the highway over the railway at mile 6.2, Lunenburg Subdivision, N.S., on the old Halifax and Southwestern Ry. This covers the replacement of a timber trestle built about 20 years ago with a concrete substructure, on which will be placed a 108 ft. lattice girder span, removed from another position. The work is being done by the railways' forces.

Minto Coal Mines Spur.—Tenders will be received to Aug. 10, for the construction of a spur of about 5 miles at Hardwood Ridge, Sunbury County, N.B. Hardwood Ridge is on the portion of the old National Transcontinental Ry., main line, now included in Chipman Subdivision, Edmundston Division, Atlantic Region, and is 54.55 miles west of Pacific Jct.; 8.74 miles west of Chipman; and 1.14 miles east of Cantor. This spur is to give connection with the Minto coal mines, from which the C.N.R. expects to use about 75,000 tons this year, purchases having been made from Minto Coal Co., Welton and Henderson, Rothel Coal Co., Miramichi Lumber Co., and Harvey Welton.

Mimico-Port Credit Third Track.—The C. N. Rys. are building a third track south of the present double track main line and on the same right of way, from the end of stub track just west of Mimico, Ont., 7.98 miles west of Toronto union station, to connect with the siding just east of Port Credit, 11.74 miles west of Toronto union station, a distance of 3.76 miles, on the Oakville Subdivision, London Division, Southwestern Ontario District, Central Region. The work was commenced June 1, and is being done by railway forces, under the direction of the staff of Major F. L. C. Bond, Regional Chief Engineer, Toronto. Released 100 lb. steel is being used. The object is to relieve congestion by taking eastbound freight trains off the main line east of Port Credit. There is a 4-track line from Toronto to Mimico yard, but with only two tracks from Mimico west, the heavy traffic which has been handled throughout this year has caused congestion and delay west of Mimico. The amount of traffic passing over the Oakville Subdivision, which extends from Toronto to Hamilton, 38.71 miles, is indicated by the following figures, which show total train movements between those cities, and which are the daily average of a 2-week period during July; eastbound passenger trains, 29; westbound passenger trains, 37; eastbound freight trains, 32; westbound freight trains, 37; average no. of freight cars handled daily in both directions, 3,008; total daily train movement, 135. These figures include C.P.R. movements, the C.P.R. having running rights over the C.N.R. line from Toronto to Hamilton. We are officially advised that it is expected to have the third track in operation before the end of the present construction season.

Burlington Third Track.—Work was started, May 14, on building a second track between Burlington Jct. and Burlington canal, 2.8 miles, by the railways' forces. The new track is laid with 100 lb. rails and is about ready for operation.

Hamilton Station.—C. G. Bowker, General Manager, Central Region, and F. L. C. Bond, Chief Engineer, Central Region, met Hamilton, Ont., city repre-

sentatives there, July 17, and discussed matters in connection with the building of a new station, its location, etc., which is to be gone into further between C.N.R. and city engineers.

Midland Elevator.—Fegles Construction Co., Fort William, Ont., has been given a contract for building a 2,250,000 bush. reinforced concrete storage annex to Tiffin Elevator no. 2, at Midland, Ont.

Longlac-Nakina Cutoff.—Work is proceeding rapidly on the construction of the cutoff between Longlac, on the Canadian Northern Ry., and Nakina, Ont., on the National Transcontinental Ry., by the contractors, Foley Bros. & Hervey.

Kashabowie Subdivision Second Track.—The Board of Railway Commissioners has authorized the opening for traffic of the second track on the Kashabowie Subdivision, west of Port Arthur, mile 11.1 to 13.2.

A contract has been let to Dutton & Mannix, Winnipeg, for clearing, grading and culvert work for a second track on the main line, from mile 32 to 35.65, between Mokomon and Rowan, Kashabowie Subdivision.

Portage la Prairie Yard.—Portage la Prairie, Man., City Council is reported to have passed a bylaw transferring Trenton Ave. to the C.N.R. for right of way for additional yard tracks. In return a new road is to be opened, and a level crossing at Main St. will be eliminated.

Dauphin Freight Shed.—Tenders were received to July 23 for the erection of a freight shed at Dauphin, Man.

Hudson Bay Ry.—The Dominion Parliament, at its recent session, provided \$350,000 for construction work on this line. It was stated that the money will be expended on bringing part of the line up to standard.

Saskatchewan District Culverts.—Tenders were received recently for building a subway at Fairford St., Moose Jaw; for reinforced concrete culverts at mile 86.1, Avonlea Subdivision; and mile 15.1, Carlyle Subdivision; and a concrete culvert and fill at mile 214.3, Manitoba Subdivision.

Saskatchewan District Ballast Pits.—Tenders were received recently for stripping ballast pits on Wawanesa, Maryfield, Craik, Langham, Conquest and Rosetown Subdivisions.

Regina Water Supply.—Tenders were received recently for building an earth dam and supplementary works on Boggy Creek, near Regina, Sask., and for a pipe line from the dam to North Regina yards. Some details of this work were given in Canadian Railway and Marine World for July, pg. 344.

Kipling and Avonlea Water Supplies.—A contract has been let to Dutton & Wickstrand, Winnipeg, for building a dam, and to C. Glasser & Sons, Winnipeg, for laying of a pipe line therefrom for a water supply at Avonlea, Sask.; to Dutton & Mannix, Winnipeg, for a dam, and to Thomas Jackson & Sons for a pipe line therefrom for a water supply at Kipling, Sask.

Canadian Northern-G. T. P. R. Connections.—The Board of Railway Commissioners has authorized the opening for traffic of the south leg of Y at the junction of the G. T. P. Ry. with the C. N. Ry. on the Battle River, Sask., Subdivision; and of the connection between the two lines at Camrose, Alta.

Edmonton Subway, Etc.—The Board of Railway Commissioners has, according to an Edmonton, Alta., press report of July 12, decided to issue an order directing the C.N.R. to file, within six months, plans showing railway facilities and subways proposed to be built at Edmonton. The plans, it is said, will cover the proposed new station, subways at Namayo Ave., 101st and 124th Streets and other works, and will involve the closing of some streets.

Ansell to Bickerdike Revision.—The Board of Railway Commissioners has authorized the opening for traffic of the revised line from Ansell to Bickerdike, Alta. This work has been done on the 5 miles between the points named, west of Edson.

Peace River Line.—Sir Henry Thornton, President, is reported to have said, on arriving at Vancouver recently, from Prince Rupert, B.C., that the C.N.R. will build a line into the Peace River district. He could not say at what point the line would leave the main line, or what route would be followed, as these matters would have to be decided upon on the reports of the engineers who would be sent out during the summer. The supplementary estimates passed at the Dominion Parliament's recent session provide \$50,000 for surveys and investigations for a railway into the Peace River country.

The construction of a line in Northern Alberta to tap the coal areas there was suggested in the final report of the Senate Committee which has been investigating the fuel supply. C. N. Ry. maps show a projected line northerly from between Errington and Brule, and press reports for some time past have credited railway engineers with being active in this district.

Bulkley Subdivision Improvements.—A contract has been let to S. S. Magoffin & Co., Prince Rupert, B.C., for building a reinforced concrete culvert and a partial fill at mile 1576, Bulkley Subdivision. The work was described in Canadian Railway and Marine World for July, pg. 344.

Vancouver Station Grounds.—We are advised, in connection with the arrangement between the C.N.R. and Vancouver City Council, as to the laying out of the station grounds there, that in January, during Sir Henry Thornton's visit, the filling of an area in front of the station was authorized to enable the city council to lay out a park area. The material for the filling in has been delivered and the laying out of the area is being gone on with, and is expected to be completed this year. While there is some paving and sewer construction to be undertaken in front of the station, on the basis of equality in respect of cost between the C.N.R. and the city, it has not been decided whether this will be accomplished this year, negotiations not having been closed. In regard to the fill in connection with the continuation of Terminal Ave. through the railway's False Creek property, it is still unsettled as to when it will be undertaken. (July, pg. 343.)

The Canadian National Rys. in order to accommodate passenger traffic from Victoria Beach and Grand Beach to Winnipeg, on July 2, had to hurriedly fit up eight box cars with rough seats.

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TORONTO, CANADA. AUGUST, 1923.

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Locomotives Running Through Be- tween Montreal and Toronto.

It is the Canadian National Rys. man-
agement's intention to operate the six
new 6000 class mountain type passenger
locomotives, assigned to the Central Re-
gion, one of which was described in Cana-
dian Railway and Marine World for July,
in passenger service from Montreal
through to Toronto and from Toronto
through to Montreal, a run of 334.04
miles. Heretofore, in passenger service
between the two cities, locomotives have
been changed at Brockville, 125.64 miles
from Montreal, and Belleville, 208.40
miles from Montreal. When the moun-
tain type locomotives are placed in regu-
lar passenger service between Montreal
and Toronto, crews will probably be
changed at a central point between
Brockville and Belleville, such as King-
ston Jct.

This move by the C.N.R. management
will apply in Canada an operating method
adopted in the U.S. within the past
few years, as several lines in that coun-
try are operating passenger locomotives
over what was formerly two or three
locomotive divisions. This seems but a
natural consequence of the improvements
made in locomotive design, and of the
additional equipment now being applied
to locomotives, which makes for more
efficient performance and which lightens
the firemen's work, notably the automatic
stoker, power grate shakers, brick arches
and feed water heaters. U.S. roads
which are operating their passenger loco-
motive over two and three division runs
report that they are not experiencing
the delay from dirty fires and other
troubles which could have naturally been
anticipated with older type locomotives,
and there seems to be no reason why C.
N.R. should not be successful in operat-
ing the mountain type locomotives over
what has heretofore been a three division
run.

There is no doubt that large economies
are to be secured; in addition to having
an equal transportation service perform-
ed on a much smaller capital investment
for locomotives, the fuel saving involved
through not having to get so many loco-
motives ready for the road, plus numerous
incidental economies, should be consider-
able. Severe weather conditions might
impose obstacles to such operation, but
if three or four months of success with
the long runs can be experienced before
severe weather comes, such a handicap
can be faced with much more assurance
owing to the operating staff generally,
and the locomotive crews in particular,
having become familiar with the new
conditions.

C.P.R. Shopmen's Red Revolu- tionism.

The resolution passed by the Montreal
council of the shopmen's C.P.R. feder-
ation, calling upon the Government to
remove troops from the Sydney, N.S.,
strike area and threatening to strike un-
less the demand was complied with, as
mentioned elsewhere in this issue, was
entirely unwarranted and objectionable
from every viewpoint. Troops were
sent to Sydney, not to intimidate strik-
ers, as has been claimed, but to preserve
law and order, to prevent sabotage, in-
stances of which were not lacking, and
to afford protection to employees who
wished to continue work. The people

have a right to expect law and order to
be maintained, and they look to the Gov-
ernment to see that it is, in cases where
municipal authority is evidently unable
to do so; for that reason, the Govern-
ment would have shown itself incapable
and unworthy of office unless it had
taken steps to ensure that law and order
would be maintained and that destruc-
tion of property would be prevented. Any
man who wants to work at wages agreed
upon with his employer has the right to
do so, and if some of his fellows see fit
to strike it does not affect that right by
one iota, and it is a public duty to see
that it is not interfered with and that
the man who attempts to exercise it is
not subjected to interference of violence.
The miners' strike in the Sydney area
was an outlaw one, led by acknowledged
reds and in defiance of agreements leg-
ally entered into, it was not sanctioned
by the miners union's general officers,
but was opposed by them, and conse-
quently the action of the federation's
Montreal council in passing the resolu-
tion is absolutely indefensible, and tends
to make one believe that the council's
officers do not understand that agree-
ments confer obligations as well as
rights.

The Government's action in sending
militia to Sydney was eminently proper.
While the framers of the resolution re-
ferred to sought to make it appear that
the move was an autocratic attempt to
interfere with personal liberty, and make
men work against their wills, by the use
of military force, the fact of the matter
is that the Government's action was
taken to guarantee personal liberty and
to protect property, in a strike led by
radicals of dangerous tendency, in de-
fiance of agreements solemnly entered
into. If the resolution accurately ex-
presses the feelings of the railway em-
ployes in whose names it was issued, it
would naturally be expected that they
would lose no time in openly denouncing
the institutions of this free country in
affiliating with Moscow; if not, the coun-
cil which framed it should rescind it, pro-
claiming its recognition of the sanctity
of agreements, and the futility of outlaw
strikes in defiance of union officers, and
commend the Government for promptly
taking measures to protect the liberty of
Canadian citizens, and the property of
industrial enterprises which must face
world-wide competition to furnish em-
ployment.

Political Patronage in Newfoundland.

The following extraordinary advertise-
ment has been published in Newfound-
land papers: "Sir W. G. Armstrong,
Whitworth & Co., Ltd. notifies all men
seeking work at the Humber develop-
ment that they can only be engaged
through the representatives of their dis-
tricts, who will be allotted a proportion
of passes by the company's employment
agent, according to the total require-
ments for labor at the works. Men go-
ing forward without the regular employ-
ment passes will not be engaged, and are
certain to suffer unnecessary hardship
and expense." This, of course, means
that political supporters of the members
for the different districts and their pro-
teges will receive preference for employ-
ment. It is to be hoped that with the
passing of the Reid Newfoundland Rail-
way under the Colony's control, a similar
policy in regard to the employment of
men for its operation, etc., will not be
pursued.

Politicians' Shortsightedness.

Grant Hall, Vice President, C.P.R., can look back over the past 25 years with a good deal of satisfaction. The Railway and Shipping World, now Canadian Railway and Marine World, announced in its Aug. 1898 issue, that he had been "removed" from the mechanical foremanship of the Intercolonial Ry. at Moncton, N.B., and had gone to Montreal. The petty politicians who secured his removal little knew what a good turn they were doing him, in compelling him to seek employment on a privately owned road, where merit counts and on which his progress, always upward, has been uninterrupted.

Canadian National Railways Equipment Bonds Sold.

The Finance Minister issued a circular, July 14, respecting Canadian National Ry. Co's 15 year 5% guaranteed bonds, in connection with equipment, series G, 1923, as follows: The equipment is for the Canadian National Rys. owned by the Dominion Government. The bonds will be dated Aug. 1, 1923, and will be payable in equal semi-annual instalments of \$750,000, from Feb. 1, 1924, to Aug. 1, 1938. They will be issued in denominations of \$500 and \$1,000 with coupons attached. Provision will be made for registration of principal. Interest will be payable Feb. 1 and Aug. 1. Principal and interest will be payable at the office of the Finance Minister, in Ottawa, or at the offices of the assistant receivers general, Montreal or Toronto. The rolling stock to be acquired by the railway is to cost \$30,000,000. In accordance with the usual practice respecting equipment bonds, 25% of this cost (\$7,500,000) will be paid in cash out of the appropriations made by Parliament for railway purposes. The issue will be guaranteed as to principal and interest by the Dominion Government. The bonds will be additionally secured by a first charge upon the equipment, title to which will be vested in the railway company. There are no mortgages or charges of any kind which will rank ahead of such charge. The Finance Minister will act as trustee under the trust mortgage. Bonds in denominations of \$500 will be printed in French on request of one or more successful bidders for not less than \$1,000,000 of bonds. A bidder may be required, on notification, to deposit with the Finance Minister, a sum equal to not less than 5% of the principal of the bonds tendered for by him, which amount will be forfeited to the Crown in case of non-fulfilment of his tender. Such sum may be represented by Government bonds or by a certified bank cheque. Tenders may be made for the whole \$22,500,000 of the issue or for any part thereof not less than \$1,000,000. Tenders will be received by the Finance Minister at Ottawa up to noon, on July 25. The right is reserved to accept or reject all or any tenders for all or any part of the above issue. Interim receipts will be given by the Finance Minister on receipt of the amount called for, to be exchanged subsequently for definite bonds.

An Ottawa press dispatch of July 25, stated that the Finance Minister had announced that the tenders of three Toronto bond houses, A. E. Ames & Co., Wood, Gundy & Co., and Dominion Securities Corporation, at 97.887 and accrued interest, had been accepted, and that the following were also interested

in the transaction, Kerr, Fleming & Co., Aemilius Jarvis & Co., R. A. Daly & Co., Matthews & Co., Osler & Hammond, Gairdner, Clarke & Co., McLeod, Young, Weir & Co., and Rene Leclerc, Inc.; also the Canadian Bank of Commerce, Royal Bank of Canada, Imperial Bank and Dominion Bank. Two other tenders were submitted, one at 97.57 and the other at 97.275. The bonds were offered to the public on July 27, at from 99 to 99.50, according to date of maturity, and are reported to have been over subscribed.

Grand Trunk Railway Co's Annual Report.

The G.T.R. Co. of Canada's directors report for the calendar year 1922 has been issued over the signature of Sir Henry Thornton, President. Following are extracts:—

	Income Account.	
	Year 1922	Year 1921
Operating revenues.....	\$77,700,019.23	\$76,858,032.27
Operating expenses.....	70,317,813.45	71,179,292.80
Net operating revenue	7,382,205.78	5,678,739.47
Railway taxes.....	1,200,287.20	1,325,577.28
	6,181,918.58	4,353,162.19
Equipment and joint facility rents, etc. (net)	3,083,932.71	2,475,151.74
Net operating income	9,265,851.29	6,828,313.93
Non-operating income..	5,347,824.66	5,691,456.86
Gross income.....	14,613,675.95	12,519,770.79
Deductions from gross income.....	23,025,409.98	26,584,213.15
Net income transferred to profit and loss....	\$3,411,734.03	\$14,064,442.36

Operating Revenues were \$77,700,019, an increase over 1921 of 1.10%. Revenue from freight traffic was \$56,561,067, an increase of 4.28%. Number of revenue tons carried, 23,675,475, an increase of 9.16%. Revenue tons carried one mile 4,561,145,848, an increase of 12.55%. Average haul per revenue ton was 192.65 miles, an increase of 3.10%. Freight revenue per train mile was \$5.59, a decrease of 0.53%. Average revenue per ton was \$2.38902, a decrease of 4.47%. Average revenue per ton mile was \$0.01240, a decrease of 7.32%. Revenue from passenger traffic was \$14,342,003, a decrease of 7.53%. Number of passengers carried was 10,998,246, a decrease of 5.27%. Average revenue per passenger was \$1.30403, a decrease of 2.39%. Average revenue per passenger mile was \$0.02864, a decrease of 5.94%. Average distance per passenger was 45.53 miles, an increase of 3.78%. Revenue from mails was \$1,212,433, an increase of 6.94%. Revenue from express was \$2,883,700, a decrease of 12.22%. Revenue from milk was \$228,541, a decrease of 5.85%. Revenue switching was \$679,860, an increase of 21%. Revenue from dining and buffet was \$325,003, a decrease of 0.93%. Revenue from demurrage was \$264,162, a decrease of 16.35%.

Operating Expenses were \$70,317,813, a decrease of 1.21%, compared with an increase of 1.10% in operating revenues. Maintenance of way and structures decreased \$2,122,092, or 16.50%. Maintenance of equipment increased \$2,982,817, or 16.75%. Traffic expenses increased \$232,023, or 14.65%. Transportation expenses decreased \$1,554,149, or 4.37%. Average loaded cars per freight train mile were 22.49, an increase of 14.51%. Average empty cars per freight train mile were 10.38, a decrease of 8.22%. Average total cars per freight train mile were 32.87, an increase of 6.20%. Average load per loaded freight car mile

was 20.88 tons, a decrease of 6.20%. Average load per freight train mile was 450.83 tons, an increase of 7.46%. Miscellaneous operations decreased \$48,186, or 10.42%. General expenses decreased \$343,433, or 11.83%.

	Pay Rolls.	
	Employees	Pay Roll
1918.....	25,342	\$30,152,476.86
1919.....	30,617	42,617,415.93
1920.....	31,686	53,375,736.60
1921.....	29,128	45,865,171.10
1922.....	28,869	42,915,246.42

Taxes were \$1,200,287, a decrease of 9.45%. Taxes per mile of road operated were \$332.32, compared with \$367.00 in 1921.

The capital expenditure account at Dec. 31, 1922, amounted to \$394,737,012, an increase of \$3,167,549.46, excluding credit of \$73,893,491.74 covering adjustment of prior years.

League of Nations' Reports on the World's Transportation Situation.

A detailed analysis of the world transportation situation, as conducted by the League of Nations Communications and Transit Commission, has been received by Canadian Railway and Marine World, dealing with the railway, highway, inland water and ocean, and air transportation situation in many countries and in great detail. The analysis is based on reports from a great many countries, in reply to a questionnaire sent out by the League shortly after the General Conference on Communications and Transit met at Barcelona in March and April, 1921. The following countries supplied reports: Austria, Belgium, Bolivia, Brazil, Bulgaria, Canada, Chile, China, Czechoslovakia, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Guatemala, Haiti, Hungary, India, Italy, Japan, Latvia, Lithuania, Luxemburg, Netherlands and Dutch Indies, Norway, Panama, Paraguay, Persia, Poland, Portugal and colonies, Roumania, Serb-Croat-Slovene State, Spain, Sweden, Switzerland.

In the reports, the transportation situation in each country is covered under the following heads: state of railway communication before the war; general effects of the war on transportation facilities and conduct; the work of rehabilitation after the war; rolling stock, railway traffic, transportation rates, and railway finances; inland and ocean navigation developments and position; sea-ports and ocean shipping; motor and air transport. In practically all cases, the analysis into the transportation situation, past and present, and into future plans and prospects, is most thorough, and for that reason a wealth of information is presented. The reports are published in two volumes, with introduction by Prof. Tajani, Engineer, Professor of the Royal Polytechnic College, Milan. Canadian Railway and Marine World is indebted to Lt. Col. T. A. Hiam, Railway Expert to the Permanent Commission on Communications and Transport, League of Nations, Geneva, Switzerland, and formerly private secretary to Sir Donald Mann, then Vice President, Canadian of the reports.

Canadian National Telegraphs have opened offices at Cap aux Os, Que., and MacDiarmid, Ont., and closed offices at Becquets station, Que., Kemptville, Lowbush, Willett and Woodford, Ont.

Freight and Passenger Traffic Notes.

The Canadian National Rys. is stated, in a press report, to have run a freight train out of Brockville, Ont., for Montreal, July 12, consisting of 100 cars.

The C.P.R. ticket and telegraph offices in Moncton, N.B., have been moved from the corner of Main and Alma Streets, to Victoria Block, a more central location.

For the third consecutive week, and for the fourth time in 1923, the number of cars loaded with revenue freight on U.S. railways exceeded the million mark in the week ended June 23, the total loading for that week being 1,002,740 cars.

The Minister of Colonization, Mines and Fisheries of Quebec, returned to Quebec, July 12, from a trip through the Gaspé peninsula, and is reported to have said, in an interview, that it costs more to carry fish to Boston, Mass., from Gaspé, than it does from Prince Rupert, B.C., and that an attempt will be made to secure a reduction of rates.

The Board of Railway Commissioners passed an order, July 4, directing Canadian National Rys. to stop trains 87 and 88 at Wendover, Ont., on Saturdays, during June, July, August and September, when necessary, to enable passengers from Montreal and Ottawa to detrain, and on Mondays to enable passengers for Montreal and Ottawa to entrain.

The Canadian National Rys. have been operating a gasoline motor car service between Victoria and Milnes Landing, Vancouver Island, 27 miles, carrying passengers and hand baggage only, and making two trips a day each way. A press report states that it is proposed to extend the service to mile 69, and that the car will make one trip a day in each direction.

Canadian National and Canadian Pacific Railways traffic officials and Dominion Government immigration officials met at Winnipeg, July 20, to discuss arrangements for the supply of harvest labor. It was estimated that approximately 60,000 men would have to be taken from British Columbia, Ontario, Quebec and the Maritime provinces, an increase of about 20% over the 1922 requirement.

The C.P.R. ran a special train from Winnipeg to Quebec, recently, 1,579 miles, in 36 hours, 12 min., the regular running time being 53 hours. This was to enable passengers and mails from China and Japan, for Europe, to make connection with the s.s. Empress of Scotland at Quebec, the regular train having been held up by a landslide west of Lake Louise, Alta. The special, consisting of one baggage, one tourist, one standard sleeping car, one dining and three compartment cars, left Winnipeg on July 7, at 8.15 a.m., and reached Quebec on July 8, at 9.27 p.m.

The Canadian National Rys. standard passenger tariff C.R.C., no. E542W-457, approved by the Board of Railway Commissioners, became effective July 1. It provides the following rates per mile: Caraquet and Gulf Shore section, Bathurst to Tracadie and Shippegan, N.B., 4c; International Ry. of New Brunswick section, Campbellton to St. Leonards, N. B., 4c; York and Carleton section, Cross Creek to Stanley, N.B., 5c; Hudson Bay Jct. to Pas, Man., 3½c; Tannis to Brazeau, Alta., 4c; Wolfe Creek, Alta., to Vancouver and Prince Rupert, B.C., in-

cluding branch lines, 4c; standard fares on all other sections, 3.45c.

A press report states that the C.P.R. has decided, with the White Star and Cunard steamship lines' approval, to provide reduced fares from British ports for farm laborers desiring to go to western Canada. The fare, from British ports to Winnipeg, had, it is said, been fixed at £12, with a rail rate of ½c a mile to points beyond, and the laborer, upon securing a certificate from the farmer with whom he engaged, that he had worked 30 days, will be entitled to a return rate of \$20 to the seaport and a 25% reduction in ocean fare. The plan is to be effective only for sailings from British ports to Quebec between Aug 1 and 15.

The C.P.R. has introduced a new three to six weeks conducted holiday tour from Great Britain to Canada, at an inclusive cost, the itineraries being arranged according to the time to be occupied. The three week itinerary covers a trip from Quebec to Niagara Falls and return to Montreal; the four weeks one cover a trip to Winnipeg, going by the lake route to Fort William, and returning to Montreal by rail; and the six weeks one covers a trip across the continent and back. The first of these tourist parties arrived in Quebec from Southampton, June 29, in charge of E. C. F. R. Mackenzie of the C.P.R. London offices, and travelled to the Pacific coast, the return trip to England being scheduled for July 27 from Montreal.

The Board of Railway Commissioners, sitting at Winnipeg, July 16, heard the Transcona Ratepayers' Association's complaint against the passenger accommodation, train service, and fare charged between Transcona and Winnipeg. After hearing the association's representatives, Assistant Chief Commissioner McLean is reported to have pointed out that the Board had no power to order commutation rates unless it is proved there is discrimination, and this was not alleged. The railway was within its rights in giving its employes and their families cheaper rates. The application re fares would be dismissed, but an order would be issued as requested in regard to adequate baggage service, and general accommodation.

Ottawa Cross Town Railway Tracks.

We are officially advised that Sir Henry Thornton, President, Canadian National Rys., has written the Mayor of Ottawa that the railways' proposals with respect to the projected removal of the cross-town tracks will be submitted to the city shortly. This matter has been under consideration for some time, and conferences have been held with A. C. Mackenzie, Engineer in charge of Maintenance of Way, C.P.R., was appointed to investigate it. Full data are now collected.

A letter from E. W. Beatty, President, C.P.R., received by the Mayor, July 13, referred to having received a report on the matter on his return to Montreal from Europe, and said that the removal of the cross town tracks would be premature until the question of the establishment of a Federal District has been settled. The Mayor is reported to have

stated that the removal of the cross town tracks would aid the Federal District proposal, and also to have said at a meeting of the council's committee on the matter, on July 18, that the C.P.R. is only slightly interested, as all it has is a right of way from the Canadian National Rys. The committee authorized Ald. Lowe, its chairman, and the Mayor, to draft a letter to be sent to both railway presidents, urging the quickest action possible.

Block Signal Installation, Between Toronto and Hamilton.

The Canadian National Rys. on account of increased traffic, are equipping the Oakville Subdivision, London Division, Southwestern Ontario District, Central Region, which extends from Toronto to Hamilton, 38.71 miles, with automatic block signals. They will govern main line movements from Bathurst St. Jct., 1.3 miles of Toronto union station, to Stuart St. station, Hamilton. From Bathurst St. Jct. to Canpa, 7 miles, they will govern movements over all 4 tracks; from Canpa to Port Credit, 4.57 miles, they will govern movements on 3 tracks, as a third track is being built to Port Credit from Mimico. From Port Credit to Hamilton, 25.84 miles, where the line is double track, the signals will govern movements on both tracks.

The signal system will be of the color light type. No semaphore arms or discs will be used, colored lights being relied upon for both day and night indications. The signals will be mounted on steel cantilever brackets, each bracket serving 2 tracks. On the 4-track portion of the line, the brackets will be staggered. On the 3-track portion, they will support the signals governing movements on two tracks, and the signal for the third track will be supported by a pole at the side in the ordinary manner. Each signal will have 3 lamps, arranged vertically one above the other, equipped with red, yellow and green lenses, respectively, to give the usual indications, viz., red, the stop indication; yellow, the caution; and green, the proceed, and the whole system will be operated in accordance with the standard rules applying to the usual type of block signal system. A special feature of the signal lights will be that each will be equipped with 2 filaments, furnishing resistance to currents of differing voltage. In case of one filament failing, the diminished intensity of illumination will warn the signal maintainer that a new filament is necessary. The signal light lenses will be about 8 in. diam. A similar installation, although on a much smaller scale, was made by the G.T.R. about a year ago, between Lachine and St. Henri, Que. Only 12 signals were used, but these were sufficient to demonstrate the desirability and reliability of the color light system.

The Board of Railway Commissioners' approval for the Toronto-Hamilton installation was given by order 33,817, June 27, and construction is proceeding from the Toronto end. The signal and line material is being supplied by Union Switch & Signal Co., Swissvale, Pa., and the cantilever supporting brackets by Bates Expanded Steel Truss Co., Chicago. The installation is being done by V.N.R. forces, under the direction of C. H. Tillet, Signal Engineer, Central Region, Toronto, and it is expected that it will be completed in the autumn.

President E. W. Beatty's Speech in England.

E. W. Beatty, K.C., President, C.P.R., was entertained at dinner, by the Canada Club, at the Savoy Hotel, London, Eng., on June 21, E. R. Peacock, a director of the Bank of England, presiding over a very large company of distinguished statesmen, financiers, professional and business men, including, among others, Lord Shaw of Dunfermline, Right Hon. L. S. Amery, First Lord of the Admiralty, Right Hon. Austen Chamberlain, and Brig. Gen. Sir Gordon Guggisberg, Governor of the Gold Coast Colony, all of whom spoke, in addition to Mr. Peacock, who proposed Mr. Beatty's health.

Mr. Beatty, in responding to the toast, said: "I feel that I can, without impropriety, discuss the question of Canadian development, having been associated for many years in an enterprise largely Canadian and English in ownership, 65% of its stock being held in Great Britain and Canada, and 87% of its ranking securities owned by citizens of the Empire. It was constructed as a term of Confederation, and without it Confederation would not have been possible. It has been in existence for about 42 years, and under operation for about 37 years. There is invested in its railway lines, exclusive of all subsidiary enterprises, cash to the extent of \$900,000,000 or nearly £200,000,000. Its credit has been taken as the yard stick of Canadian credit by foreign investors, and its prosperity has contributed to the encouragement and support of Canadian industries by foreign and British capital.

"Canada has two problems which are of great importance to it, viz., the necessity for greater population and the equally vital necessity of the introduction of new capital to support its development. I will not pretend to bore you with an elaboration of the now accepted basic fact that, with its wealth of natural resources, Canada needs to a marked degree these two stimulating influences. In recent years, we have proceeded in framing our policies with a tortoise-like slowness which has been irritating, particularly when contrasted with the forward and progressive policies of other parts of the Empire. To me the question has long since ceased to be a debatable one. We either believe in that great Dominion and its future or we do not. If we do believe in it we must know that it can support more than 9,000,000 people, and that it will require more than 9,000,000 to support it. We suffered, as every other country suffered, from certain economic changes which followed the conclusion of the war. We felt, as others did, the dislocation of market conditions and the high costs of production. The combination of the two represented a temporary handicap in the marketing of some of our greatest products. Faith in ourselves is, however, returning, and some of us now fear that the greatest mistake of all was that of delay, and the loss of opportunity to secure the highest type of immigrant which has been the penalty for that delay. Fortunately, however, some agencies were able to counteract the propaganda of despondency to a limited extent, and immigrants are now coming forward, and many more will come forward in consequence of the optimism and confidence which prevail, and also the removing of certain government restrictions which have denied up to now the entry of some of the finest type of immigrants Canada could secure.

"This fact, coupled with the gradual return of improved industrial conditions, convinces me that the present year will not be an unprosperous one for Canada and for Canadian institutions. Our industrial expansion is equally as important as our agricultural expansion, because Canada, through its vast natural resources of raw material and great water powers in process of being developed, is in sight of becoming an industrial as well as an agricultural country, and it is economically unsound to count on recruiting that labor from an agricultural population or agricultural immigrants. That fatal mistake was made by the United States when it diverted the peasant immigrants from Poland, Hungary and Ukrania into the stock yards, the packing plants, the steel works, and the coal mines, and thus diverted hundreds of thousands of prospective farmers from their natural calling. In a lesser degree the same mistake has been made in Canada, and many immigrants who have come to that country, with the genuine intention of working the land, are now to be found in the mines and industries to which they were induced by employers eager to get labor at any price.

"What we seem to need is what I might call a 'balanced immigration,' which would supply our industries as well as our farmers with the best available help. In that way we could anticipate a normal and rational development, increasing the home market, while at the same time increasing the production both in the industries and on the land. For the farmer buys the product of the manufacturer just as the city worker feed on eggs, butter, milk, bread, and meat. As a rule it is not easy to induce the skilled mechanics and craftsmen of any country to migrate to another. It is the unskilled labor that is shiftless. The skilled laborer is able to buy a home and has his savings in the bank. But there are times when mankind seems to be let loose in a flood of unrest. It was such a flood that drove the Huguenots to England and thus gave England some of her now basic industries. A similar flood seems to be raging through Europe and Great Britain today, and if only the doors of immigration are kept open we may find in Canada a home for workers who for generations have been identified with highly skilled trades and crafts. Progress in industry so often depends on the inventive genius of the actual workers. The more of such inventive skill we can obtain for Canadian industries, the better. We would be wise to keep our gates open for brains as well as brawn.

"You have perhaps heard that during the last year there has been a considerable exodus of Canadians to the United States; you have also been informed that agriculturists did not prosper to the extent they expected. Both statements involve nothing but a natural consequence of the economic dislocation which was the inevitable result of a world wide war, and why it should give any grounds of apprehension to the people of a country of such infinite resources is beyond my comprehension. It is incidental to Canada's geographical location that a nation of 120,000,000 to the south of it there should, particularly in the disturbed conditions which followed the war and the inevitable restlessness which was part of the after war psychology, be a greater movement of Canadians to the

United States, a country which then and now is in a period of great commercial activity. The movement does not mean that there is a lack of opportunity in Canada, but that an inflated commercial condition in the States has lured those whose position enables them to take advantage of an immediate and temporary greater opportunity. We have been disappointingly slow in advertising our country's undoubted possibilities. We have not made steps sufficiently forward to warrant those in England believing in our confidence in ourselves, and the result has been until very recently a very slow movement of settlers and a limited inter-Empire trade expansion.

"I have said that the need of men and money is paramount. From Great Britain we have formerly secured a support and a strength in both that have been largely responsible for the development of Canadian enterprise. That support was of necessity withdrawn during the period of the conflict, and in the aftermath, owing to Great Britain's enormous obligations, but that it will and should return in full volume is clear beyond peradventure. In discussing the problem with those in London most familiar with the financial situation, I found only two suggestions made which might be considered as reasons why this support, particularly financial support, should be sparingly given, and these were the failure of some enterprises, due to their being over ambitious in conception, or to over confidence in administration, and the feeling that quite recently a great Canadian enterprise had been taken over by the Government on terms which were considered to be unfair in some respects to British investors. As to the first, I have little to say by way of comment. No country is immune from instances of faulty business judgment, and no country is so wealthy that enterprises instituted without proper consideration, or administered without regard to economic considerations, can succeed. I venture to suggest to you, however, that the number of successes in Canada and the integrity of investments properly made there are as great as in England itself.

"As to the Grand Trunk and the unfortunate feeling of resentment which has in some cases developed in consequence of its acquisition by the Government, I can only speak very generally and very guardedly. It would be unseemly for me, connected with a road for many years its principal competitor, to make any reflections or observations upon the former administration of the Grand Trunk. I can say to you, however, that if its executive administration had been in former years more Canadian in character, and more in touch with Canadian methods and Canadian sentiment, some of the difficulties which confronted them in the later stages of their history might conceivably have been avoided. The Grand Trunk was in a very peculiar position. It was a corporation financed and controlled in London, operating a company with head offices in Canada, deriving a large part of its business from the United States. To a marked degree it was similar to a bridge with one pier in the western states, the span in Ontario and Quebec, and the other pier in New England. Therefore, essentially, it was an international road and peculiarly subject to fluctuations in the railway situation both in Canada and the United

States. It required a very keen and accurate appreciation on the part of its executive of those conditions which were local to that part of North America.

"Neither would it be proper for me to say more than I have said in respect to the attitude of the Government. I was always opposed to the acquisition of the Grand Trunk, and my reasons were very simple. I did not believe then, and I do not believe now, that the property has the same possibility of development as part of the government system as it would have under capable efficient private administration. I do not think it was a wise thing for the Dominion of Canada to embark upon such an extensive public ownership programme. It may well be that my views will prove to be wrong, and that the development of the country, and the tremendous increase in traffic which will result if the expansion which we anticipate takes place and is not too long delayed, will make a success of what our judgment at the time considered to be an extremely hazardous adventure into public ownership.

"But if I do not discuss or criticize the former administration of the Grand Trunk, or the policies of the Government which led to its acquisition, I am naturally deeply concerned if the combination of the two results in any lack of support to Canadian enterprises generally by the financial interests of England. Canada has secured, and will continue to secure, much capital from the United States, but Canada has secured in the past a support from Great Britain which has been a strength to it, as well as constituting a bond of Empire, the importance of which cannot be over estimated. It would be a great pity if a difference of opinion as to the policy of any government in respect to one enterprise should affect detrimentally the policy of England towards Canadian enterprises generally, and there should be little justification for such result, if, as I conceive to be the case, the importance of Canada to the Empire is equal to the importance of Great Britain to Canada.

"Much attention has been given by the public men of both Great Britain and Canada to the subject of inter Empire trade. If it is true that the world is looking to the Anglo-Saxon races to take a large share in implementing and assisting the economic rehabilitation of Europe, it must follow that such steps as may be properly taken to strengthen from within the Empire itself should be taken by Great Britain and the overseas Dominions. The Dominions are a source of great wealth because they are large in area and rich in natural resources. What they possess in the way of native wealth must be taken from the earth by the combined efforts of men and money. With every added strength of the dominions overseas comes an added assurance that the peace of the world will not be disturbed, because the strength of the British Empire and the good will of the United States will prevent it. I presume it will not be suggested that the catastrophe of 1914 would have arisen or, if it arose, would have been continued over five years of waste of human life, human energy, and national resources, had, for example, the population and wealth of Canada and Australia combined been at that time equal to that of the United States. The advantages of the extension of inter Empire trade and the development of Canadian industries are almost too clear to require elucidation. You have your surplus population

which can be absorbed with profit to Canada and yourselves. We have our tremendous agricultural territory, our new and growing industrial development, which can profit by settlers and new capital. We have the production of those commodities which we think we can produce in quality and in price equal to those of other countries, and the market for them rests in part in the older portions of the Empire. It should not be an academic question, but one in which the governments and business men of Great Britain and Canada should take a keen, immediate and aggressive interest. If the unity of the Empire in war was of paramount importance, its development in peace is just as vital if the older parts are to receive additional strength from the development of the new, and the great future of the new is to be realized through the support of the old."

Alberta Coal Rates to Ontario.

The transportation aspects of the fuel situation in Canada were dealt with fully in preceding issues of Canadian Railway and Marine World up to the point where the railways offered a \$9 rate for transporting Alberta domestic coal to Ontario. The parliamentary committee on mines and minerals said in its report, "The Canadian National Rys. quoted a rate of \$9 a ton in trains of 50 car loads, for May, June and July. The C.P.R. state that the actual cost of carrying coal from Lethbridge to Ontario points in 46 ton car loads is \$9.90 a ton. Western Canada coal operators maintain that the rates quoted make any large movement of coal from western Canada to Ontario impracticable. Your committee is forced to the conclusion that the rates quoted will in no way assist in solving Canada's fuel problem. . . . We believe that our National railway should carry fuel at cost in this crisis, and the committee suggests that the rates quoted are not cost rates, but much higher."

A meeting was held at Edmonton on July 16, presided over by C. A. Magrath, Chairman of Dominion Advisory Fuel Commission, and attended by Sir Henry Thornton, President, Canadian National Rys.; D. C. Coleman, Vice President, Western Lines, C.P.R.; J. E. Dalrymple, Vice President, Traffic, Canadian National Rys.; W. G. Manders, Freight Traffic Manager, Western Region, Canadian National Rys.; Geo. Stephen, Assistant Freight Traffic Manager, Western Lines, C.P.R.; and other railway officials; Premier Greenfield of Alberta, and numerous mine operators. The operators said they could put good domestic coal on cars in Alberta at \$4.50 a ton, and that they wanted a \$6.50 rate so that, after adding the dealers' charge of \$2.50 a ton for handling and profits, the coal could be sold in Ontario for \$13.50 a ton in competition with U.S. anthracite at \$15.50. Press reports state that the railway representatives stated they could not give the rate asked, but that they agreed to transport 4,000 tons at a reduced rate, which was not specified, as a trial shipment.

An Edmonton press dispatch of July 23, stated that a rate of \$7 a ton had been agreed on between the Canadian National Rys. management and Premier Greenfield, for experimental coal shipments to Ontario, that it was expected that from 4,000 to 6,000 tons would be shipped from the Drumheller, Brazeau and other collieries, and that the operators would charge \$4.50 a ton f.o.b. mine,

which would enable the coal to be sold in Ontario at about \$12. A dispatch on July 25 stated that 50 cars were being shipped that day from Drumheller.

If the \$12 price mentioned in the dispatch is meant to indicate the retail price to consumers, it seems too low. With the coal costing \$4.50 f.o.b. mine, \$7 for freight, and at least \$2.50 for handling and distribution costs at destination, it would appear that the best price at which the coal could be offered the Ontario consumer would be about \$14 a ton.

Use of French Language on Quebec Railways.

Mr. Justice Surveyer gave judgment in the Quebec Superior Court, at Montreal, recently, in the action heard some time ago, brought by M. Demers, advocate, Montreal, against the C.P.R., with J. Fegg, mis-en-cause, to recover \$500 damages for suffering, nervousness and affront, which he alleged to have suffered through Fegg threatening to put him off a C.P.R. train on Oct. 12, 1919. The plaintiff boarded the train at Choisy and failing to find his ticket when asked for it, he told the conductor in English he would find it and give it to him afterwards. A little later the conductor asked him again for the ticket, when he demanded that the conductor speak in French. Following this an altercation resulted, and some scuffling took place which lasted about a minute, according to other passengers, during which the conductor told Demers that if he did not give up his ticket he would be put off the train.

Mr. Justice Surveyer held that, in refusing to give up his ticket under the circumstances, the plaintiff was hampering the conductor in the discharge of his duties. The Railway Act, in providing for the printing of tickets, notices, etc., in French in the province, intended to prevent travellers and shippers from being led into error because of their ignorance of English. A provincial statute had been passed with the same object, and there were sanctions for the enforcement of both these laws. But penal provisions should be interpreted restrictively, and therefore it was sufficient for a railway conductor in the province to be able to understand the French language, but he is not obliged to ask for a ticket in French from a passenger who has shown that he understands English. The conductor apparently lost his temper, and in threatening to put the plaintiff off the train before it had stopped, had overstepped his legal rights. The action was therefore dismissed, but without costs.

Canadian National Rys. Terminal Elevators.—Tenders were received to July 21, for the leasing for three years from Sept. 1, of the Canadian National Rys. terminal elevators at Port Arthur, Ont., capacity 8,750,000 bush., and at Transcona, Man., capacity 1,000,000 bush. We are officially advised that the Port Arthur elevators are at present leased to F. H. Peavey & Co., Minneapolis, Minn., and the Transcona elevator to Rosenbaum Bros. of Canada, their terms expiring Sept. 1.

The C.P.R. Recreation Club, Toronto, held its annual picnic to Galt, Ont., on July 14, for the second year in succession. It was attended by over 2,000 members and friends, who travelled in three special trains, and had a most enjoyable time, despite some rain.

Railway Wages and Working Conditions in Canada and the United States.

Train Service Men's Wages.—A Winnipeg press dispatch of July 16 credits H. E. Barker, General Chairman of the Order of Railway Conductors on the Canadian National Rys. Western Lines, who returned recently from a meeting of conductors' and trainmen's officers in Chicago, with the statement that the conductors and trainmen would within the next few weeks, demand from Canadian railways, restoration of the wage schedule in effect prior to Aug. 1921.

Shopmen.—A Montreal press report of July 25 stated that railway shopmen's representatives were to meet the Railway Association of Canada's operating committee, wage sub-committee, on July 30, to discuss wages and working conditions. Details of the application made by the shopmen for a re-opening of negotiations were given in a preceding issue of Canadian Railway and Marine World. It is stated that they are not asking for restoration of the 1920 rates of pay, but that they want an increase of 10c an hour, and the time and one half rate for Sundays and holidays to be restored. Another request is for the abolition of paint spraying machines now used in the shops, it being claimed that they ruin clothes and are detrimental to health because of the impossibility of avoiding inhalation of vapor and paint particles. The shopmen's committee will consist of R. P. Tallon and Chas. Dickie, President and Secretary, respectively, of the American Federation of Labor's Railway Employees' Department, Division 4, and representatives of the individual shop crafts.

Canadian National Rys. Shopmen.—Representatives of about 9,000 C.N.R. shopmen, including machinists, boiler-makers, blacksmiths, sheet metal workers, electricians, and carmen, employed on the Central Region, met in Montreal on July 18 and subsequent dates to wind up the business of the Grand Trunk System Federation and to form a new regional body to replace it, this being necessary on account of the C.N.R. amalgamation. Shopmen's officers attending the meeting included R. J. Tallon, President; Frank McKenna, Vice President; and Chas. Dickie, Secretary, of the American Federation of Labor's Railway Employees' Department, Division 4; J. A. McClelland, Canadian Vice President of the International Association of Machinists; W. G. Powlesland, Vice President of the blacksmiths' organization; J. Merri-gan, International Vice President, boiler-makers' union; L. Beuloin, Vice President, Brotherhood of Railway Carmen; Z. Tardiff, business agent for the carmen, and J. A. Spence, business agent for the machinists. In addition to representatives from the original Canadian Northern and G.T.R. lines now included in the Central Region, there were present delegates from the Central Vermont Ry., who asked for co-operation from shopmen on other Central Region lines in their effort to have the agreement entered into at the conclusion of the strike last year lived up to. Practically all of the 125 delegates present brought resolutions from their locals declaring against the "farming out" of repair work by the railways, and the general officers were instructed to take up the matter with the C.N.R. management. Strong resentment was expressed against the management letting this work to private companies, it being claimed that the rail-

way employees needed it and that the railways had shops in which to do it, and the general opinion was that the railways should work three 8-hour shifts, if necessary, to ensure that all repair work be done on railway premises. The meeting went on record against the piece work and bonus systems in railway shops, and officers were instructed to take every possible measure to get them eliminated. The officers were directed to take steps to have pass and pension privileges restored to men who went on strike in 1900 and 1905 in Montreal and Stratford. It was pointed out that conductors and trainmen had had their seniority and pension rights restored, and it was argued that shopmen should receive equal treatment. The officers of the shopmen's Grand Trunk Federations are:—Chairman, F. Harrison, Montreal; Vice Chairman, W. A. McGuire; Secretary, J. Corbett.

Canadian National Railways Telegraph Department Employees.—The Department has concluded an agreement with its employees by which operators, telegraph supervisors, telephone operators and supervisors, clerks, cashiers, delivery supervisors, billing machine operators, collectors and maintainers, will be given increases averaging from \$10 to \$20 monthly and totalling about \$125,000 monthly.

Canadian National Rys. Sleeping and Dining Car Employees.—Details were given in a preceding number of Canadian Railway and Marine World of the dispute between the C.N.R. and some of the dining room and sleeping car employees on western lines, members of the Canadian Brotherhood of Railway Employees, and it was stated that a conciliation board had been granted, consisting of Chas. Dafoe, Winnipeg, representing the railways, David Campbell, Regina, representing the employees, and W. J. Donovan, Winnipeg, chairman, the latter appointed by the Labor Department. At the hearings, the railways were represented by J. M. Grieve, General Superintendent, S.D. & P. Cars and Railway Restaurants; Jas. Gorman, Superintendent of S.D. & P. Cars and Railway Restaurants, Western Region, and A. C. Egan, Comptroller, Western Region, and the employees by R. Dykes, C. H. Minchin and J. A. Robertson, all C.B.R.E. officers. The first matter heard concerned the claim of porters on G.T.P. sleeping cars for unpaid wages from May 1 to Oct. 1, 1920, as per schedule agreement. The railways had made certain deductions for meals. The board upheld the employees' contention, and recommended that the sums deducted be paid back. The second matter was the claims advanced by C.N.R. tourist car porters for additional wages from Aug. 1, 1918 to May 26, 1919. Messrs. Campbell and Donovan found in favor of the employees, but Mr. Dafoe in a minority report stated that he did not consider that the claim was justified. The third matter, that of a difference in wages due to seniority standing, was decided against the employees by Messrs. Donovan and Dafoe, and Mr. Campbell presented a minority report in favor of the employees. The fourth claim concerned the wages of a porter on a buffet parlor car; the employee claimed he was entitled to a \$115 monthly rate, while the railways claimed he belonged to a classification calling for a \$97.50 rate. Messrs. Donovan and

Dafoe, in a majority report, recommended that he be paid at the rate of \$106.25, and Mr. Campbell recommended that he be paid the \$115 rate. The fifth matter had to do with the alleged wrongful dismissal of a sleeping car porter, but the board refused to deal with it.

Maintenance Employees.—A Montreal press dispatch of July 16 stated that members of the committee selected to represent the maintenance of way employees in negotiations with the Railway Association of Canada operating committee's sub-committee on wages and working conditions, would meet there on July 17 to prepare their case. Canadian Railway and Marine World for June and July gave details of the application for a conference on wages and working conditions made by the employees' organization. The agreement heretofore in effect required 60 days notice of a desire to have it amended.

Ex-service Men Want More Seniority.—A Vancouver press dispatch of July 5 stated that the Great War Veterans, in session there, had passed the following resolution:—"Whereas under the working agreement between the Canadian National Rys. and the employees' representatives in the event of a reduction of staff, seniority of service governs, and as this would affect the majority of the ex-service men now employed, all members of His Majesty's forces should take their seniority before that of any unnaturalized alien; their seniority should be dated from the date on which they joined the forces, such seniority rights to be applied in all instances, except for reduction in the service, and ex-members of His Majesty's forces should be given preference for employment and promotion." The dispatch stated that many delegates contended that in numerous instances ex-service men employed in railway service had been laid off, while enemy aliens and unnaturalized foreigners were kept at work.

C.P.R. Shopmen Demand Removal of Troops from Sydney.—The Montreal council of the C.P.R. shopmen's federation, representing a large number of shop and locomotive terminal employees, passed the following resolution on July 16: "That this meeting of representatives of the men employed in the various crafts in the C.P.R. shops and round-houses in Montreal and vicinity strongly protests against the employment of the Canadian militia in the present labor dispute in Sydney, N.S., and calls upon the Government to issue the necessary instructions for their immediate withdrawal; further, that we go on record as favoring a strike of the 7,000 men directly affiliated with this council, whose representatives we are, as a means of forcing the withdrawal of the militia from the strike area in Sydney, in the event that no immediate action is taken in this direction by the Government." Copies of the resolution were forwarded to the Minister of Labor; the President of the Canadian Trades and Labor Congress; the Premier of Nova Scotia, and the Secretary, American Federation of Labor's Railway Employees' Department, Division 4.

United States Situation.—The dispute between maintenance of way employees on various U.S. roads and the managements, which came before the U.S. Railroad Labor Board on an application for a gen-

eral increase in maintenance employees' wages on 29 roads, as stated in Canadian Railway and Marine World for July, was remanded by the Board to the parties concerned.

Many disputes between U. S. railways and their clerical employees, the majority of whom are members of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, were scheduled for hearing before the Labor Board on July 23.

In addition to the wage increases to shop, maintenance men and clerical employees on individual U.S. roads, as detailed in Canadian Railway and Marine World for July, other roads have recently granted small increases to different classes of employees.

The Brotherhood of Railroad Trainmen and the Order of Railroad Conductors' western general chairmen met in Chicago on July 9 and 10 to discuss plans for a campaign for increased wages in the autumn, when agreements with the majority of the U.S. roads expire. The delegates voted to urge the members of their organizations to request the restoration of the peak wages of 1920. The general chairmen of these organizations in the eastern and southern U.S. territory will probably meet in August to consider wage questions. The fact of the enginemen's and firemen's brotherhoods declining to take part in these proceedings, is significant, and the statement of W. S. Stone, President of the Brotherhood of Locomotive Engineers, that it would not require much preparation to get ready for a wage movement "when the financial conditions of the country warrant it," lend strength to the belief that the differences of opinion as between Mr. Stone and W. G. Lee, President of the Brotherhood of Railroad Trainmen, as to the train service organizations' wages policies, are large.

The Joint New England Railroad Committee, appointed by the governors of the six New England states to report on the general railway situation there, has submitted its report to an assembly of the governors. The committee recommended rehabilitation of the Boston & Maine and the New York, New Haven & Hartford Rd. as a preliminary step to the formation of a consolidated system, and reported that if financial considerations permit, New England interests can be better served if the railways in the territory consolidate, leaving out the Boston & Albany, Central Vermont, the Canadian National Rys. line to Portland, and the C.P.R. mileage in Maine and Northern Vermont. H. G. Kelley, former President, G.T.R., is chief of the technical staff.

Montreal Level Crossings Protection.—A contract has been signed between the Montreal City Council executive committee and the Highway Lighthouse Co. for placing signal lights at railway crossings for the protection of pedestrians, etc. The lights will be of an automatic flashing type, using acetylene gas, the model of which has been approved by the committee and the chief of police. The contract is for five years, the company providing and maintaining the signals in return for permission to sell advertising on the panels which enclose the mechanism. Signal lights at 19 crossings of the Canadian National Rys. G.T.R. lines, at 28 crossings of the Canadian National Rys. Canadian Northern Ry.; at 23 crossings of the C.P.R.; and at 5 crossings of the Montreal Harbor Commissioners' lines.

Transportations Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Board of Railway Commissioners.—W. RUSSELL FOLLIS, heretofore passenger locomotive man, C.P.R., running between Toronto and Hamilton, has been appointed acting Inspector of Locomotives and Boilers, with headquarters at Toronto, vice L. D. Gillett, deceased.

Canadian National Rys.—G. E. BELLEROSE, heretofore General Assistant, Express Department, Montreal, has been appointed General Superintendent of Transportation, Express Department, Office, Montreal.

J. C. BOOTH has been appointed Grain Door Inspector and Supervisor, Lakehead Division, Manitoba District, Western Region. Office, Fort William, Ont.

J. CLOTWORTHY has been appointed Assistant to Superintendent, Pensions and Relief. Office, Montreal.

D. M. JOHNSON, heretofore in charge of Live Stock Department, Dominion Agriculture Department, has been appointed Agricultural Agent, C.N.R., reporting to E. A. Field, Land Commissioner. Office, Winnipeg.

GEO. C. JONES, heretofore Assistant General Manager, Central Region, C. N. Rys., Montreal, has been appointed General Manager, C. N. Rys. Telegraph and Telephone Service, Geo. D. Perry, heretofore Vice President and General Manager, Canadian National Telegraphs, Toronto, having resigned. Office, Toronto.

J. D. LIFE has been confirmed in his position as Assistant Staff Recorder, Winnipeg.

C. J. MILLIGAN, heretofore Master of Titles and Inspector of Legal Offices, Regina, Sask., has been appointed Regional Counsel, Atlantic Region, C.N.R., vice H. F. Alward, granted leave of absence on account of ill health, and who will, later on, should his health permit, be transferred to the Railways and Canals Department at Ottawa, as Counsel, a position he filled formerly. Office, Moncton, N.B.

E. W. OLIVER, B.A.Sc., C.E., heretofore General Superintendent, Electric Lines, C.N.R., Toronto, who has had charge of the Niagara, St. Catharines & Toronto Ry., and the Niagara, St. Catharines & Toronto Navigation Co., and also has devoted considerable time recently to Toronto Eastern Ry. matters, has been appointed Manager, Niagara, St. Catharines & Toronto Ry., Niagara, St. Catharines & Toronto Navigation Co., Toronto Suburban Ry., and Toronto Eastern Ry., with office at Toronto, reporting to S. J. Hungerford, Vice President, Operation and Construction Departments, C.N.R., Montreal.

W. L. PINKNEY, heretofore Staff Recorder, Toronto, has been appointed Staff Recorder, Montreal.

C. B. TRITES, heretofore Staff Recorder and Secretary, Relief Department, Moncton, N.B., has been appointed Assistant Superintendent, Pensions and Relief. Office, Moncton.

Canadian Pacific Ry.—P. J. BELL, heretofore fitter, North Bay, Ont., has been appointed assistant foreman, there, vice F. Brooks, appointed Locomotive Foreman, Schreiber, Ont.

E. G. BOWIE, heretofore Division Master Mechanic, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Division Master Mechanic,

London Division, Ontario District, vice C. Gribbins, appointed Locomotive Foreman, Chalk River, Ont. Office, London, Ont.

F. BROOKS, heretofore Assistant Foreman, North Bay, Ont., has been appointed Locomotive Foreman, Schreiber, Ont., vice F. G. Perkins, appointed Locomotive Foreman, London, Ont.

W. CHANDLER, heretofore Locomotive Foreman, Chalk River, Ont., has been appointed Locomotive Foreman, Brownville, Me., vice F. H. Jenkins, appointed Division Master Mechanic, Schreiber Division, Algoma District, Schreiber, Ont.

R. S. DICKSON, heretofore Locomotive Foreman, Havelock, Ont., has been appointed Night Locomotive Foreman, London, Ont., vice J. S. Hall, appointed Locomotive Foreman, Havelock, Ont.

E. E. FREEMAN, heretofore Locomotive Foreman, North Bay, Ont., has been appointed Locomotive Foreman, Sault Ste. Marie, Ont., vice A. Parker, superannuated.

J. S. HALL, formerly Night Locomotive Foreman, London, Ont., was appointed Locomotive Foreman, Havelock, Ont., June 1, vice R. S. Dickson, appointed Night Locomotive Foreman, London, Ont., and on July 1, he was appointed Locomotive Foreman, North Bay, Ont., vice E. E. Freeman, appointed Locomotive Foreman, Sault Ste. Marie, Ont.

C. GRIBBINS, heretofore Division Master Mechanic, London Division, Ontario District, London, Ont., has been appointed Locomotive Foreman, Chalk River, Ont., vice W. Chandler, appointed Locomotive Foreman, Brownville, Me.

F. H. JENKINS, heretofore Locomotive Foreman, Brownville, Me., has been appointed Division Master Mechanic, Schreiber Division, Algoma District, vice E. G. Bowie, appointed Division Master Mechanic, London, Ont. Office, Schreiber, Ont.

M. J. KELLY, heretofore chief clerk, Division Freight Office, North Bay, Ont., has been appointed Travelling Freight Agent, there, vice J. J. McGarry, appointed Travelling Freight Agent, Windsor, Ont.

J. J. MCGARRY, heretofore Travelling Freight Agent, Algoma District, North Bay, Ont., has been appointed Travelling Freight Agent to cover border cities, at Windsor, Ont.

H. H. MOYNES, heretofore Travelling Tariff Inspector, Toronto, has been appointed Travelling Freight Agent, London, Ont., vice W. J. Anderson, appointed District Freight Agent there, as announced in our last issue.

F. G. PERKINS, heretofore Locomotive Foreman, Schreiber, Ont., has been appointed Locomotive Foreman, London, Ont., vice A. A. Sheppard, appointed Locomotive Foreman, Cartier, Ont.

P. PINCOMBE, heretofore Locomotive Foreman, Cartier, Ont., has been appointed Locomotive Foreman, Havelock, Ont., vice J. S. Halls, appointed Locomotive Foreman, North Bay, Ont.

T. E. ROBERTS, heretofore chief assistant, Colonization and Development Department, London, Eng., has been appointed Assistant Manager of that department. Office, London.

A. A. SHEPPARD, heretofore Locomotive Foreman, London, Ont., has been appointed Locomotive Foreman, Cartier, Ont., vice P. Pincombe, appointed Locomotive Foreman, Havelock, Ont.

Mainly About Railway People Throughout Canada.

E. W. Beatty, K.C., President, C.P.R., returned to Canada, July 9, on the company's s.s. *Montlaurier*, after a trip through Europe, visiting the company's various offices. On leaving Paris, he was entertained at luncheon by the Cercle Interallie, and later, in London, was the chief guest of the Canada Club at dinner.

Frederick Austin Bourne, whose appointment as Superintendent of Pensions and Relief, Canadian National Rys., Montreal, was announced in a recent issue, was born at Dublin, Ireland, June 20, 1869, and entered railway service, April 1, 1883, since when he has been, to March 1, 1887, apprentice, Mechanical Accounts; March 1, 1887, to Oct. 1, 1890, clerk, same department; Oct. 1, 1890, to May 1, 1899, clerk, Treasurer's Department; May 1, 1899, to March 1, 1913, Assistant Secretary-Treasurer, Insurance and Provident Society, G.T.R.; June 15, 1913, to April 1, 1914, Honorary Secretary, St. John's Ambulance Association; April 1, 1914, to March 1, 1916, Secretary-Treasurer, Insurance and Provident Society, Secretary, Pension Department, G.T.R., and Secretary, Pension Department, Canadian Express Co.; March 1, 1916, to April 1, 1923, Secretary, Pension Department and Staff Records, G.T.R., all at Montreal.

Stuart B. Brown, who has been ap- July 15, 1912, in private business; July ment, Canadian Manufacturers' Association, Toronto, was born at Ottawa, Ont., Jan. 14, 1891, and entered transportation service July 1, 1906, since when he has been, to Sept. 1, 1907, clerk, local freight department, Ottawa & New York Ry., Ottawa; Sept. 1, 1907, to May 1, 1908, clerk, General Freight Department, same road, Ottawa; May 1, 1908, to Nov. 10, 1911, clerk, Tariff Bureau, New York Central & Hudson River Rd. and West Shore Rd., New York; Nov. 10, 1911, to July 15, 1912, in private business; July 15, 1912, to Jan. 17, 1919, Assistant to Manager, Transportation Department, Canadian Manufacturers' Association, Toronto; Jan. 17, 1919, to June 28, 1923, Assistant Manager, same department, C.M.A., Toronto.

Allan Cameron, Oriental Manager, C. P.R. and Canadian Pacific Steamships Ltd., Hong Kong, China, arrived at Victoria, B.C., July 2, by the company's s.s. *Empress of Russia*, en route to Montreal, to consult with the President, who has just returned from Europe, on matters concerning the company's Oriental business.

Miss Edith Cochrane, daughter of the late Hon. Frank Cochrane, at one time Minister of Railways and Canals, was married in Toronto, June 26, to R. L. Blackburn, of Ottawa.

Britton B. Cooke, who died at Parfit Sanitarium, Muskoka, Ont., July 11, was appointed Publicity Manager, Canadian Railway War Board, at its inception, Nov. 1, 1917, and continued in that capacity when its name was changed to Railway Association of Canada, Dec. 1, 1919.

Hugh Doheny, President, Hugh Doheny & Co., railway and general contractors, Montreal, died there, June 28. He was born at Montreal in 1864. His first railway contract was for the construction of a section of the C.P.R. on the north shore of Lake Superior in 1884, after which he carried out several contracts for railway construction, including portions of the Minnieapolis, St. Paul & Sault Ste. Marie Ry. in Michigan, C.P.R. Crowsnest

Pass line from Alberta into British Columbia, a section in Cape Breton for Mackenzie, Mann & Co., about 200 miles of the Timiskaming & Northern Ontario Ry., and, in association with Macdonnell & O'Brien, a 300 miles section of the National Transcontinental Ry. west of Quebec. He also built the Canada & Gulf Terminal Ry., between Mont Joli and Matane, Que., and was Vice President of that company at the time of his death. He was a partner in O'Brien & Doheny and Quinlan & Robertson, who were awarded a contract for the construction of sec. 3 of the Welland Ship Canal, which was eventually continued by Doheny, Quinlan & Robertson, but which has now been merged with sec. 4, and is being completed by the P. Lyall Construction Co. He was also engaged, between 1889 and 1890 on the construction of the Sault Ste. Marie Canal.

Lieut. Col. Sir John Strathearn Hendrie, K.C.M.G., C.V.O., who died at Johns Hopkins Hospital, Baltimore, Md., July 17, after an operation for an intestinal growth, was born at Hamilton, Ont., Aug. 15, 1857, and educated there and at Upper Canada College. He was a son of the late Wm. Hendrie, founder of the Hendrie Cartage Co., and for several years was in business as a contractor and built several railway lines in Canada and the U.S. He entered the Ontario Legislature, as member for Hamilton, in 1902, and was a minister, without portfolio, from the formation of the Whitney administration until 1914, when he was appointed Lieutenant Governor of Ontario. During his term in the Legislature, he was chairman of the railway committee, and introduced the railway bill which was passed in 1906. He promoted the Hamilton Bridge Works Co., and was General Manager, for several years, and subsequently President, and was associated with a number of financial, industrial and transportation companies, including the Hendrie Cartage Co., Niagara Navigation Co., Hydro Electric Power Commission (1906), Bank of Hamilton, Hamilton Jockey Club, Ontario Jockey Club, National Battlefields Committee, etc. He joined the 4th Field Battery of Canadian Artillery in 1883 and became major in 1894, commanded the battery in 1899, lieutenant colonel in 1902, retired in 1909, and held the long service decoration. He commanded the artillery which visited England in connection with the Queen Victoria diamond jubilee celebrations in 1897, and was created a Companion of the Royal Victorian Order in 1907, and a Knight Commander of the Order of St. Michael and St. George on his appointment as Lieutenant Governor of Ontario in 1914. He was devoted to horses, and in conjunction with his brother, Col. Wm. Hendrie, maintained a racing stable at Hamilton.

Capt. C. S. L. Hertzberg, M.C., formerly in C.P.R. service, and a son of the late A. L. Hertzberg, Engineer, Ontario Diseriet, C.P.R., Toronto, has been awarded the Czecho-Slovakia Croix de Guerre, for war service.

Lady Hickson, of Montreal, widow of Sir Joseph Hickson, at one time General Manager, G.T.R., and the Misses Hickson, have been spending some time at York Harbor, Me.

C. R. Hosmer, director, C.P.R., and Mrs. Hosmer are spending the summer at their country house at St. Andrews, N.B.

Herbert George Lash who has been

appointed Publicity Representative, Canadian National Rys., Toronto, was born at St. John's, Nfld., Jan. 16, 1894, and from June 1912 to Sept. 1915, was a reporter on the Toronto Mail and Empire; from Sept. 1915 to June 1919, he served with the Canadian Expeditionary Force overseas, originally as a private in the 4th Universities Company, P.P.C.L.I., and later as Lieutenant in the 47th Battalion, Canadian Infantry. He was awarded the Military Cross for work on the Droucourt-Queant line, Sept. 2, 1918, and a bar to the Military Cross at Valenciennes Nov. 1, 1918, and was wounded at Courcellette, Sept. 16, 1916. On his return from military service, he resumed his position as reporter on the Mail and Empire, and was, from Dec. 1919 to Apr. 1921, assistant sporting editor, and from Apr. 1921 to June 1923, editor, Toronto Sunday World.

Joseph Gaston Legrand, Bridge Engineer, Western Region, Canadian National Rys., Winnipeg, died there, July 2, after a long illness. He was born at Sompuis, Marne, France, Dec. 24, 1861, and from 1881 to 1882, underwent officers' training in the French Army. From 1882 to 1887, he was chairman and instrument man, French Government Railways, Ardennes; 1887 to 1889, engineer in charge for the contractors for fortification works at Verdun; 1889 to 1891, engineer, Hafna Mining & Smelting Co., Llanrwst, Wales; 1891 to 1893, in private practice as civil engineer in Montreal; 1893 to 1903, structural draftsman, Dominion Bridge Co., Montreal; 1903 to 1906, Assistant Chief Engineer, Structural Department, Locomotive & Machine Co., now Montreal Locomotive Works, Montreal; 1906 to 1908, Bridge Engineer, Grand Trunk Pacific Ry., Montreal; 1908 to Sept. 1, 1920, Bridge Engineer, G.T.P. R., Winnipeg; Sept. 1, 1920 to April 1923, Bridge Engineer, Western Lines, Canadian National Rys., Winnipeg; and since April 1923, Bridge Engineer, Western Region, Canadian National Rys., Winnipeg. In 1907 he was a member of the board which decided on the design for the Quebec Bridge, and from 1912 to 1914 was Consulting Bridge Engineer for the Edmonton, Dunvegan & British Columbia Ry. and the Pacific Great Eastern Ry., and acted as designing engineer for the Provencher bridge over the Red River between Winnipeg and St. Boniface. He was a member of the Engineering Institute of Canada, and the American Railway Engineering Association.

Joseph James McGarry, who has been appointed Travelling Freight Agent, C. P.R., Windsor, Ont., was born at Dublin, Ireland, Sept. 16, 1888, and entered railway service in 1905, since when he has been to 1912, clerk in railway clearing house, Dublin; 1912, clerk to Auditor of Freight and Telegraph Receipts, G.T.R., Montreal; 1913 to 1914, assistant agent, C.P.R., Nipigon, Ont.; 1914 to 1916, chief clerk Division Freight office, C.P.R., North Bay, Ont.; 1916 to 1921, Travelling Freight Agent, C.P.R., North Bay, Ont.; Feb. 1, 1921 to Nov. 1, 1922, Travelling Freight and Passenger Agent, C.P.R., North Bay, Ont.; Nov. 1, 1922 to June 15, 1923, Travelling Freight Agent, C.P.R., North Bay, Ont.

Sir William Mackenzie, President, Toronto Ry., and formerly President Canadian Northern Ry., returned to Canada from Great Britain, July 9, by the C.P.R. s.s. *Montlaurier*.

Sir Donald Mann, ex Vice President, Canadian Northern Ry., who left Toronto in the middle of May, has been spending some time on the European Continent, including Russia and is expected to return within a few weeks.

Lady Mount Stephen, widow of the first President of the C.P.R., arrived in Canada, July 17, on the C.P.R. s.s. Empress of Canada, for a visit.

Charles James Mulligan, who has been appointed Regional Counsel, Atlantic Region, Canadian National Ry., Moncton, N.B., was born at St. John, N.B., Jan. 15, 1870, and is a B.A. and M.A. of the University of New Brunswick. He became a barrister in Sept. 1892, and practised at St. John, N.B., until April 1908, when he was appointed Master of Titles and Inspector of Legal Offices, for Saskatchewan, at Regina, with the rank of a deputy minister, which position he held to July 1, when given his present appointment.

T. E. Roberts, who has been appointed Assistant Manager, Colonization and Development Department, C.P.R., London, Eng., entered the company's service in June 1949, as accountant in the Land Department, and acted as conductor for several land seeking parties arranged by the C.P.R. During a portion of the war he acted as Manager of the Department, and later was on active service for three and a half years, toward the end acting as Assistant Transport Officer, Canadian Forestry Corps, with the rank of lieutenant.

Alfred Rumsby, formerly chief traffic officer of the Associated Boards of Trade of British Columbia, Vancouver, aged 30, was found dying at his wife's grave at Victoria, B.C., June 29, from a self inflicted wound, and died later in a hospital. His wife died suddenly about a month previous, and he had resigned his position as he felt unfitted for his work.

John Gunion Rutherford, C.M.G., member of the Board of Railway Commissioners for Canada, died at Ottawa, Ont., July 24. He was taken seriously ill, with a heart affection at Penticton, B.C., July 9, during the board's western tour, and was removed to Ottawa a few days later, accompanied by Dr. Boyce, of Kelowna, B.C. He was born in Peeblesshire, Scotland, Dec. 25, 1857, was educated in Glasgow, later came to Canada and graduated from the Ontario Agricultural College, Guelph, and the Ontario Veterinary College, where he won the gold medal in 1879, after which he practised as a veterinary surgeon in Canada, the U.S. and Mexico. He went to Portage la Prairie, Man., in 1884 and engaged in veterinary work and horse breeding. From 1884 to 1892 he was Veterinary Inspector for the Manitoba Government, from 1892 to 1896 was member of the Legislature for Lakeside, and in 1897 was elected to represent Macdonald, Man., in the House of Commons. He was appointed Dominion Veterinary Director General in 1902, and held that position to 1912, being also, from 1906, Dominion Live Stock Commissioner. From 1912 to 1918 he was Superintendent of Agriculture and Animal Husbandry, Department of Natural Resources, C.P.R., and in Sept. 1918, was appointed a member of the Board of Railway Commissioners. He was an Honorary Associate of the Royal College of Veterinary Surgeons, and in 1908 was Canadian delegate to the International Institute of Agriculture at Rome; and the International Congress on Tuberculosis at Washington, D.C., from 1909 to 1911 was President, American Vet-

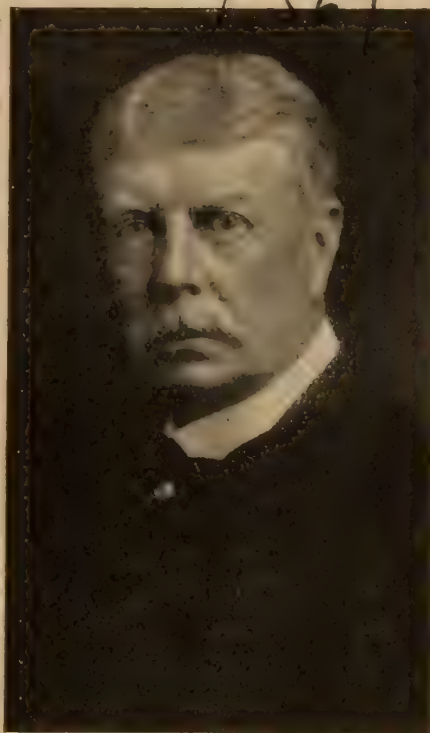
erinary Medical Association, and was also at various times Chairman of the International Commission on Control of Bovine Tuberculosis; President, Western Canada Live Stock Union; President, Horse Breeders Association of Manitoba and Northwest Territories, etc. He was Veterinary Officer of the Northwest Field Force during the Riel rebellion in 1885.

Lord and Lady Shaughnessy, and the Hon. Marguerite Shaughnessy, are spending the summer at their country home at St. Andrews, N.B.

Guy Tombs, of Guy Tombs, Ltd., transportation service, etc., Montreal, Mrs. Tombs, and son, are visiting Great Britain and the European continent, expecting to return early in September.

The United States Railways' Financial Results.

The articles appearing each month in Canadian Railway and Marine World dealing with the financial results secured



John Gunion Rutherford, C.M.G., V.S., H.A.R.C.V.S., Member, Board of Railway Commissioners for Canada, who died at Ottawa, July 24.

by U.S. railways have shown that so far this year they have been better than at any time since 1917. The July article pointed out that in April the U.S. roads earned at the equivalent annual rate of 6.5% on their tentative valuation. In May this rate was 6.33%, net operating income for that month being \$89,999,600. Gross earnings in May were \$547,282,500, an increase of 21.8% over May 1922. Operating expenses, \$420,656,000 were an increase of 18.4%.

For the first 5 months of 1923, the net operating income was \$356,966,900, equivalent to an annual rate of return on tentative valuation of 5.69% compared with net operating income of \$273,215,000 for the first 5 months of 1922, which was representative of an annual rate of 4.45%. Gross earnings for the first 5 months of 1923 were \$2,553,856,600, an increase of 19.4%, and operating expenses, \$2,026,163,600, were 18.2% greater, than in the first 5 months of 1922.

Railway Earnings.

Canadian National Railways.

Canadian Railway and Marine World is unable to publish its usual comparative monthly table of C.N.R. earnings, owing to changes which have been made in the form in which they are furnished. The following figures have been supplied for the "Amalgamated System" for May, and for the 5 months ended May 31, it being stated that they include the total revenue and expenses of some of the subsidiary companies which were not included theretofore.

	Earnings	Expenses	Net	Increase
May	\$20,992,772	\$19,092,414	\$1,900,358	\$ 925,126
For 5 months ended May 31,				
1923	\$96,303,524	\$95,911,764	\$ 391,760	\$3,193,946
Inc'e	\$12,041,605	\$ 8,847,659	\$3,193,946	*****
Operating ratios—	1923	1922		
January	102.57	110.46		
February	116.55	107.71		
March	102.10	98.92		
April	89.93	107.09		
May	90.95	94.72		
For 5 months ended May 31..	99.59	103.32		

The gross operating revenues for the whole Canadian National Railways system, including Central Vermont Ry., for May, were \$21,830,532.64, and operating expenses \$19,746,308.82, making net revenue \$2,084,223.82, against \$1,078,496.23 for May 1922.

Approximate gross earnings for June, \$22,989,634, and for two weeks ended July 14, \$9,419,068, against \$21,670,275 and \$8,885,927 for the same periods in 1922.

Canadian Railway and Marine World has, heretofore published separate figures for Grand Trunk Ry. earnings. We are officially advised that it is not the management's intention to make such figures public in future.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross.	Expenses.	Net.	Increase or Decrease
Jan.	\$13,148,914	\$12,428,888	\$ 720,026	* 236,549
Feb.	11,159,865	10,664,371	495,494	*158,994
Mar.	13,585,763	11,606,049	1,979,714	*440,793
Apr.	13,651,494	11,700,615	1,950,879	402,107
May	14,355,539	12,357,292	1,998,247	*346,266
	\$65,901,575	\$58,757,215	\$7,144,360	*\$307,398
Incr.	\$ 3,416,664	\$ 3,724,062		*****
Decr.	*****	*****	\$ 307,398	*****

*Decrease.

Approximate gross earnings for June, \$14,217,000, and for two weeks ended July 14, \$6,860,000, against \$23,198,000 and \$6,353,000 for same periods in 1922.

Freight Car Location on Canadian Railways.—The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on July 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, as follows: Number of cars owned, 209,924; home cars on Canadian foreign lines, 10,449; home cars on U.S. lines, 39,473; home cars on home lines, 160,102; Canadian owned foreign cars on home lines, 7,865; U.S. owned foreign cars on home lines, 33,774; total cars on lines, 201,741; percent on lines to total owned, 96.1; deficiency on lines to total owned, 8,183; home cars in bad order, 14,933; foreign cars in bad order, 518; total cars in bad order, 15,451; percent in bad order, 7.6; privately owned U.S. cars on lines, 2,559; privately owned Canadian cars on lines, 1,469.

Railway Operating Revenues, Expenses and Other Statistics for April.

The following comparative table for April, 1923 and 1922, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are not in all cases the same as reported in 1922.

The column headed "Canadian National" gives the figures for the combined steam railways in Canada, under the

Canadian National Ry. Co's directors' management, including the former Canadian Northern System, the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Province Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, nor lines west of the Detroit and St. Clair Rivers.

The column headed "Canadian Pacific"

includes also the Montreal & Atlantic and Esquimalt & Nanaimo Rys.

The items under side headings 1 to 6, inclusive, include rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, baggage, parlor cars, etc.

Operating Revenues	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
Freight	\$26,484,287.81	\$20,344,611.15	\$13,006,270.92	\$9,089,726.09	\$9,423,072.14	\$8,274,114.97
Passenger	5,905,502.60	5,843,949.54	2,536,891.30	2,413,094.73	2,501,426.51	2,628,729.22
Mail	564,695.28	628,227.49	224,853.89	272,022.20	297,774.09	314,597.17
Express	977,892.71	1,026,764.25	426,590.12	473,560.88	446,215.89	445,978.88
Other freight train	4,199.52	2,052.89	500.00		1,260.29	2,009.85
Other passenger train	465,052.47	450,709.09	179,379.62	149,930.29	265,409.63	265,970.59
Water line	51,119.28	77,804.36			51,097.04	53,891.21
All other	1,120,543.69	942,430.23	419,177.63	307,254.58	550,894.30	515,752.80
Total railway operating revenues	\$35,573,293.36	\$29,316,549.00	\$16,793,663.48	\$12,705,588.77	\$13,537,149.39	\$12,501,044.69
Operating Expenses						
Maintenance of way and structures	\$5,512,285.65	\$5,038,037.81	\$2,605,154.09	\$2,468,858.12	\$2,086,336.64	\$1,960,115.13
Maintenance of equipment	7,782,594.04	7,455,315.87	4,083,375.35	3,931,896.38	2,854,540.22	2,631,934.46
Traffic	1,117,818.79	1,026,787.57	400,304.26	378,926.85	642,924.01	570,179.00
Transportation	15,725,392.14	13,224,656.19	8,105,584.41	6,375,116.47	5,781,634.63	5,280,477.61
Miscellaneous operations	389,514.32	389,291.19	158,550.21	148,680.35	190,525.86	202,616.48
General	1,028,619.43	951,778.76	582,596.18	532,080.87	301,436.95	277,465.77
Transportation for investment	Cr. 17,617.07	Cr. 85,194.73	Cr. 13,485.53	Cr. 85,154.92		
Total railway operating expenses	\$31,538,607.30	\$28,000,672.66	\$15,922,078.97	\$13,750,404.12	\$11,857,398.36	\$10,922,788.45
Operating Income						
Net operating revenue	\$4,034,686.06	\$1,315,876.34	\$871,584.51	Dr. \$1,044,815.35	\$1,679,751.03	\$1,578,256.24
Railway tax accruals	561,442.12	471,504.80	216,916.72	152,868.49	250,971.12	243,401.75
Uncollectible revenues	3,054.21	2,845.18	2,941.30	2,799.34		
Hire of equipment	Cr. 608,682.03	Cr. 293,443.07	Cr. 390,578.62	Cr. 381,988.66	Cr. 564,873.81	Cr. 249,430.34
Joint facilities rents	Dr. 135,454.67	Dr. 40,932.25	Dr. 6,738.47	Dr. 56,901.13	Cr. 19,452.74	Cr. 35,920.22
Operating income	3,943,417.09	1,094,037.18	1,035,566.64	Dr. 821,593.39	2,013,106.46	1,620,205.05
Operating Statistics						
Average miles of road operated	38,822.78	38,805.02	20,799.3	20,765.2	13,919.9	13,877.2
Tons carried (revenue freight)	9,330,702	6,170,227	4,044,602	2,419,103	2,345,589	1,902,884
Tons carried one mile (revenue freight)	2,488,869,280	1,728,754,393	1,326,180,737	807,847,478	844,835,753	700,040,053
Tons carried (all freight)	10,960,966	7,062,030	4,986,151	2,890,159	2,921,165	2,254,341
Tons carried one mile (all freight)	2,862,549,002	1,909,685,455	1,549,026,483	911,110,533	981,061,679	771,952,556
Revenue passengers carried	3,480,317	3,469,498	1,848,571	1,834,705	1,176,637	1,179,366
Revenue passengers carried one mile	200,564,813	194,981,750	89,158,034	84,283,258	85,333,422	86,333,888
*Freight train miles	4,990,364	3,811,503	2,621,602	1,968,603	1,776,855	1,348,706
*Passenger train miles	3,560,523	3,412,221	1,646,255	1,539,041	1,489,216	1,474,205
Total train miles (revenue and non-revenue)	8,772,926	7,347,741	4,364,905	3,578,481	3,865,642	2,866,137
Freight car miles—loaded	115,856,592	84,426,273	59,330,740	40,806,460	40,517,892	31,757,116
Freight car miles—empty	47,319,323	36,528,143	25,450,244	18,122,560	15,494,021	11,414,315
Passenger train car miles	24,299,626	22,954,367	11,034,367	10,099,282	10,272,913	9,985,417
Total amount of payroll	\$18,512,753.20	\$16,858,020.54	\$10,060,199.98	\$9,074,542.42	\$6,807,972.28	\$6,302,271.61
Number of employees	153,167	139,739	82,820	76,242	57,817	52,847
Daily averages per mile of road operated						
Operating revenues	\$30.54	\$25.18	\$26.91	\$20.40	\$32.42	\$30.03
Operating expenses	\$27.08	\$24.05	\$25.52	\$22.07	\$28.39	\$26.24
Tons moved one mile (revenue freight)	2.137	1.485	2.125	1.297	2.023	1.682
Tons moved one mile (all freight)	2.458	1.640	2.482	1.463	2.349	1.854
Revenue passengers carried one mile	172	167	143	135	104	207
*Averages per freight train mile						
Freight revenues	\$5.31	\$5.34	\$4.96	\$4.62	\$5.30	\$6.14
Tons of freight (revenue freight)	498.7	453.6	505.9	410.4	475.5	519.0
Tons of freight (all freight)	573.6	501.0	590.9	462.8	552.1	572.3
Loaded freight cars	23.2	22.2	22.6	20.7	22.8	28.5
Empty freight cars	9.5	9.6	9.7	9.2	8.7	8.5
*Averages per passenger train mile						
Passenger train revenues	\$2.22	\$2.33	\$2.05	\$2.15	\$2.36	\$2.48
Passengers carried	56.3	57.1	54.2	54.8	57.3	58.6
Passenger cars	6.8	6.7	6.7	6.6	6.9	6.8
Average operating expenses per train mile	\$3.59	\$3.81	\$3.65	\$3.84	\$3.52	\$3.81
Average length of haul (revenue freight), miles	266.7	280.2	327.9	333.9	360.2	367.9
Average passenger journey, miles	57.6	56.2	48.4	45.9	72.5	73.2
Average tons per loaded freight car	24.7	22.6	26.1	22.3	24.2	24.3
Average freight receipt per revenue ton mile	1.064c	1.177c	.981c	1.125c	1.115c	1.182c
Average passenger receipt per passenger per mile	2.944c	2.997c	2.845c	2.863c	2.931c	3.045c
Ratio of payroll to operating revenues	52.0%	57.5%	59.9%	71.4%	50.3%	50.4%
Ratio of payroll to operating expenses	58.7%	60.2%	63.2%	66.0%	57.4%	57.7%
Ratio of operating expenses to revenues	88.66%	95.51%	94.81%	108.22%	87.59%	87.38%

*Contains a proportion of mixed train miles.

In the table for March, in Canadian Railway and Marine World for July, pg. 315, "Daily averages per mile of road operated," were incorrectly stated as "Averages per mile of road operated."

Railway Operating Revenues, Expenses and Other Statistics.

A table on page 388 gives the gross earnings, operating expenses, net earnings or deficits, and other operating statistics for Canadian railways as a whole for April, and separately for the Canadian National and Canadian Pacific Railways. Tables on another page give the results secured by the Canadian National and Canadian Pacific Railways in May. As pointed out in our July issue, the railways had a much better month in April than in March, and the later figures show that April 1923 was also a much better month than April 1922. Freight revenue for the roads as a whole was \$6,139,676 more than in April 1922, and passenger revenue was slightly more, resulting in total operating revenues being \$6,256,744, or 21% more. The April 1923 revenue was also \$1,618,175 more than that for March.

In view of the fact that the lower rates prevailing required the transportation of more freight and passengers than in April 1922, to secure increased gross earnings, it is not surprising that operating expenses increased substantially. Total operating expenses were \$3,537,935, or 12.6%, more than in April 1922, but were \$479,492 less than in March. Compared with April 1922, the expense for maintenance of way, maintenance of equipment, traffic and transportation was more, but in view of the greatly increased traffic handled, the increase in operating expenses, particularly as regards transportation expense, was not unduly large, but, on the contrary, was such as to reflect a high degree of operating efficiency.

The gratifying increase in gross revenue over March and April 1922, with a reduction in operating expenses, compared with March, and an increase in operating expenses not nearly so large as the increase in gross earnings compared with April 1922, is reflected in a substantial improvement in the operating income statement. The net earnings of \$4,034,686 in April, compared with \$1,315,876 in April 1922, resulted in an operating income for the month representing a proportionate improvement over April 1922. A comparison of the month's operating ratio, 88.66, with 95.51 for April 1922, and 94.30 for March 1923, shows the improvement effected.

The large increase in freight traffic in April this year, compared with April 1922, is shown by the freight tonnage and ton mileage. Grain movement during April 1922 was light, on account of embargoes against both Vancouver and Port William and Port Arthur, which explains in part the large increase in April 1923, although the April traffic this year was 4.3% more than that of March, or 7% greater on a per diem basis, and was well above the traffic of any month last year prior to September. The larger traffic of April 1923 was handled more efficiently than that of April 1922; a little calculation shows that the freight train miles did not increase proportionately to the ton miles. The train mileage figure shows the increase in the average carload of from 22.6 to 24.7 tons, and in the average revenue trainload of from 453.6 tons to 498.7. The average trainload increase did not result entirely from the increase in average carloading, but was due in part to there being an additional loaded car in each average train. The increase in freight traffic is shown strikingly under the heading "Daily average per mile of road operated." There

were 2,137 ton miles of freight handled per mile of road per day in April 1923, compared with but 1,485 in April 1922.

The number of revenue passenger miles in April also showed a good increase over April 1922, while the number of passenger train miles operated, although larger than in April 1922, did not increase disproportionately. Although the average passenger rate declined slightly, it was not enough to prevent the gross earnings from passenger traffic showing an increase. The improvement in passenger traffic density is shown in the table, under the "Daily average per mile of road operated" heading. The number of revenue passenger miles per mile of road operated per day was 172 in April 1923, compared with 167 in April 1922.

An analysis of the table giving the April results for the railways as a whole shows that the railway industry was in a much better position in April 1923 than in April 1922, not only as concerns the railways themselves, but also as concerns the public which they serve. For example, while the public paid the railways only 1.064c per revenue ton mile of freight handled, compared with 1.177c in April 1922, and while the railways earned only \$5.31 per freight train mile, compared with \$5.34 in April 1922, while the average revenue trainload was heavier in April 1923 than in April 1922, yet the total freight earnings, due to the heavier traffic provided, were very much better than in April 1922, and the operating expenses incurred did not increase nearly proportionately to the increased earnings. In the same way, although the public paid smaller passenger fares in April 1923 than in April 1922, and while the railways earned slightly less per passenger train mile, yet the total passenger earnings were larger, and although the expenses as between freight and passenger services cannot be segregated with any degree of accuracy, it is a reasonable proposition that the railways gained from the heavier passenger traffic, despite the decreased average rate. This is but an object lesson of the principle that has been continually emphasized in these columns, viz., that increased traffic is what the railways need, and that increased traffic will benefit, not only the railways, but also the public, through making possible lower transportation charges.

Regarding the April results for the individual large roads, the great improvement accomplished by the Canadian National amalgamated system is at once evident. The 64% increase in freight traffic was doubtless due in large part to the embargo mentioned above, and the advantages which came to the National system because of the increased traffic in April are evident throughout the figures covering the month's operations. The increase in freight earnings particularly, but the increase in passenger earnings also, accompanied by an increase in operating expenses which was not nearly so large, proportionately, as that in total gross earnings, shows that additional traffic can be handled by the National lines at decreased unit costs. The increases in average freight car loading, from 22.3 tons in April 1922, to 26.1 tons in April 1923; and in average revenue freight train loading, from 410.4 tons in April 1922 to 505.9 tons in April 1923, reflects the improved position and shows in a striking way the effect which an

increase in volume of traffic has.

The C.P.R. had an increase of \$1,036,104, or 8.3%, in gross earnings, but operating expenses increased \$934,609, or 8.6%, slightly increasing the operating ratio from 87.38 in April 1922 to 87.59. Freight traffic increased 20.7% and freight revenues increased \$1,148,957, or 13.9%, but passenger traffic fell off slightly. The average receipts per ton mile decreased from 1.182c to 1.115c and with a reduction of 43.5 net tons of revenue freight per train the average revenue per train mile decreased from \$6.14 to \$5.30.

The table of May earnings for the C.P.R. and the C.N.R., and of the earnings from Jan. 1 to May 31, shows that while the C.P.R. enjoyed a larger gross than in May 1922 by \$691,293, the operating expenses were \$1,037,559 more than in May 1922, resulting in a decrease in net earnings of \$346,266. For the first five months of 1923, the C.P.R. gross earnings, \$65,901,575, were \$3,416,664 more than in the first five months of 1922, but as operating expenses, \$58,757,215, were \$3,724,062 more, this resulted in the net for the period being \$307,398 smaller. As pointed out in our July issue, the favorable results secured by the C.P.R. in April 1923 were responsible for placing the net earnings in the first four months of 1923 ahead of those for the same period of 1922, but the May results have caused the net earnings to fall behind the 1922 record again.

The Canadian National Railways, exclusive of the Central Vermont Ry., had gross earnings in May of \$20,992,772, an increase of \$2,499,462 over May 1922; operating expenses, \$19,092,414, were \$1,574,337 more than in May 1922, resulting in net earnings, \$1,900,358, being \$925,126 more than in May 1922. For the first five months of 1923, C.N.R. gross earnings, \$96,303,524, were \$12,041,605 more than in the first five months of 1922; and operating expenses, \$95,911,764, were \$8,847,660 more, resulting in net earnings, \$391,761, being \$3,193,946 more, the first five months of 1922 having been marked by an operating deficit of \$2,802,185.

From the May figures of both large systems, it is evident that the railways are having all they can do to make ends meet properly on the present rates and traffic. In our review of the April results, it was shown that, although a great improvement over April 1922 was secured, the operating ratio for the roads as a whole was 88.66; it is likewise evident that the roads are still far from securing the relationship between income and outgo that they should have, viz., one expressed by an operating ratio of between 70 and 75. The only reason that they are able to get the results they have been getting is because traffic has been good; the present rates applied to traffic approximating the 1921 condition would find Canadian railways in bad shape. It is not likely that higher rates can be looked for in the near future; agriculture and industry would certainly not be disposed to see them granted. The railways' only salvation, therefore, seems to be in keeping down expenses and in obtaining increased traffic. The applications for increased pay, and more favorable working conditions, which amount to practically the same thing as increased pay, made by the maintenance men and shopmen, would, if granted even in part,

be a move in the wrong direction so far as expenses are concerned; but, on the other hand, the movement of the immense western crop which is predicted, even though it will be moved at comparatively low rates, promises the railways a large volume of traffic which will be reasonably profitable, mainly on account of its large volume.

Traffic Orders by Board of Railway Commissioners.

Canadian National Railways Standard Passenger Tariff.

33,841. June 29. Re application of Canadian National Ry. Co., under sec. 334 of the Railway Act, of 1919, for approval of its standard passenger tariff C.R.C. no. E.542-W-457, issued June 26, 1923 and effective July 1, 1923. Upon the report and recommendation of its Assistant Chief Traffic Officer, the board orders that the said tariff, cancelling Canadian Northern Ry. C.R.C. no. E.2699, Grand Trunk Pacific Railway C.R.C. no. 660 and Halifax and Southwestern C.R.C. no. P-77, be approved.

Prince Edward Island Railway Transshipping Charges Suspended.

33,915. July 19. Re complaint of J. J. Hughes, M.P., with regard to freight rates between points on Prince Edward Island and mainland stations on Canadian National Rys.; the board orders that, with respect to Canadian National Rys. tariff schedules as follows, viz., supplement 2 to C.R.C. no. E-603; supplement 1 to C.R.C. no. E-609; and supplement no. 1 to C.R.C. no. E-607, the provisions therein reading as shown below, be suspended until further order, viz.—“Shipments to or from stations on Prince Edward Island east of Charlottetown and Royalty Jct., or west of Summerside, will be subject to an additional charge of 2c per 100 lb., to cover cost of transshipping from standard to narrow gauge cars, or vice versa.”

The board further orders that the following provision in Canadian National Rys. tariff C.R.C. no. E-618, be suspended as from May 14, 1923, until further order, viz.—“Shipments destined to stations on Prince Edward Island east of Charlottetown and Royalty Jct., or west of Summerside, will be subject to an additional charge of 20c per net ton to cover cost of transshipment from standard to narrow gauge cars.”

Automatic Train Control in the U.S.—

Details of the hearing on automatic train control in the U.S., and the Interstate Commerce Commission's order requiring class 1 roads to equip specified divisions on their lines with automatic train control, were given in a preceding issue of Canadian Railway and Marine World. The order required that the installations be completed by Jan. 1, 1925, and the Commission has since authorized a few of the roads to equip divisions other than those originally specified. Up to July 1, practically all the roads included in the order had made some progress in installing a train control system, although some of them have not definitely decided which system will be put in. The majority have chosen one of the following systems: Union Switch and Signal Co's continuous induction; General Railway Signal Co's tapered control; American Train Control Co's device; National Safety Appliance Co's system; Miller Train control; Federal Signal Co. induction system; Regan Safety Devices Co's system.

The Pacific Route for Western Grain.

The progress made in developing an export route for western Canadian grain by way of Vancouver and the Panama Canal to British and other European markets, and by way of Vancouver and the Pacific to South American and Oriental markets, has been discussed in preceding issues of Canadian Railway and Marine World, particularly in February, on pg. 61, and in June, on pg. 274, in both of which articles different peoples' opinions were quoted as to the feasibility and permanency of the Pacific route, and numerous influencing considerations were detailed.

The commission appointed by the Dominion Government to enquire into the grain trade, composed of Mr. Justice Turgeon, of the Saskatchewan Supreme Court; Dean Rutherford, of Saskatchewan University's faculty of agriculture; Dr. McGibbon, Professor of Economics at Alberta University; and J. F. Scott, of Quebec, which has been holding hearings in the west throughout June and July, has developed further information as to the western route's possibilities. Press reports from various western cities state that testimony was presented to the commission as follows:

William Pearce, Statistician, Colonization and Development Department, C.P.R., stated that in 1881 he had gone to the Pacific coast to look over the possibilities there for an outlet for Alberta grain, and had concluded that Vancouver was the logical export port for all rain raised west of Swift Current, Sask. Speaking for himself, and not for the C.P.R., he still believed that all wheat raised as far east as Moose Jaw, and possibly Regina, should go via the Pacific. He claimed that the Panama Canal zone's heat would have no harmful effect. To the objection that there was but little return freight for Vancouver, he pointed to the fact that 85% of the ocean freight tonnage is carried by tramp steamers. He said that if the proper facilities were available at Vancouver, that port would get 50% of the wheat from the prairie provinces, and that if it could get the volume of traffic the rates would be adjusted.

A. J. McMillan, Manager, Robin Hood Milling Co., stated that the shipments his company had made through Vancouver had been handled satisfactorily, but that the service had not been established to the extent that it could compete with the Atlantic route. While at times the rates might be lower via Vancouver, the fact that the ship supply on the Pacific coast was uncertain, and that a ship could be secured on the Atlantic seaboard at almost any time, influenced many buyers to specify that shipments should be routed east. If more ships were available at Vancouver the Pacific route would be very satisfactory.

J. H. Hanna, Secretary, Calgary Board of Trade, read a statement in which it went on record as favoring the Pacific route and urging greater facilities at Vancouver.

J. M. Cameron, General Superintendent, Alberta District, C.P.R., stated that in his opinion grain handling facilities at Vancouver should be increased and the port made more than a mere exporting station for ocean tonnage. If the volume of grain to Vancouver increases, as it probably will, increased storage facilities should be provided at Vancouver and

interior points in Alberta supplemented. It is for the grain trade to decide finally and the railway company is ready to follow their suggestions.

S. C. Brown, Superintendent, Canadian Government elevator at Calgary, stated that in the grain year 1922-23 the elevator handled about 7,000,000 bush. of grain all of which went west except about 10 cars.

Geo. Lane, a veteran Alberta farmer and rancher, stated that ever since the U.S. started to build the Panama Canal he had hoped that it would provide a better source of transportation for western Canadian wheat, and that he is now more convinced than ever that the Pacific route is the best for Alberta. It was his wheat that went through the Panama Canal in one of the first trial shipments, and he was very emphatic in his statement that the grain was in no way harmed by the heat. He thought that screening should be done at interior elevators if possible, and if not, at Vancouver.

J. I. McFarland, President Alberta Pacific Grain Co., said that shippers were getting lower prices at Vancouver at the end of June than at Port Arthur, and had been for two months, because of high freight rates and lack of ships at Vancouver. Under present conditions Vancouver could offer more favorable prices to prairie shippers during winter only.

From Mr. McFarland's statement it would seem that with rail rates and the shipping situation on the Pacific as at present, wheat from all of Saskatchewan and part of Alberta would go east during lake navigation, but the Vancouver World, in dealing with his testimony, states that steps are being taken to provide better steamship service out of Vancouver and that high hopes are entertained of having the rail rates equalized, in which case the supremacy of the Vancouver route for all Alberta's grain and a large part of Saskatchewan's would be firmly established. Other opinion is to the effect that any change in the shipping and rate situation on the Pacific will be unfavorable to further development of the Vancouver-Panama route to Europe.

As has been pointed out by British Columbia interests in connection with the rate appeal now pending, grain hauled east from Edmonton for 1,225 miles is only to the head of Lake Superior, while if hauled west for 770 miles it is to Vancouver, at tidewater, but it is hauled the 1,225 miles eastward for 15½c a bush., while the charge for hauling it 770 miles westward is 15c a bush., only ½c less. The railways point to higher operating costs and lower traffic density as justification for this. From these facts, and from the evidence quoted above it is evident that the development of the Pacific grain route is going to experience in the near future will depend largely on what the Dominion Government does with British Columbia's and Alberta's appeal from the Board of Railway Commissioners' decision on rate equalization, to be heard in the near future.

The average mileage per freight car per day on U.S. railways has been much better in the first part of 1923 than in preceding years. For the first 4 months of 1923 it was 26.4, compared with 22.3 in the first 4 months of 1922, 21.2 in the first 4 months of 1921, and 22.1 in the first 4 months of 1920.

Birthdays of Transportation Men in August.

Many happy returns of the day to:—

A. C. Barker, Superintendent of Transportation, Atlantic Region, Canadian National Rys., Moncton, N.B., born at Lacadie, Que., Aug. 5, 1878.

V. T. Bartram, ex-Purchasing Agent, Timiskaming & Northern Ontario Ry., now general contractor, etc., Toronto, born at Ottawa, Aug. 2, 1880.

H. H. Beasley, Purchasing Agent, Toronto Transportation Commission, Toronto, born at St. Thomas, Ont., Aug. 1, 1867.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, Ottawa, Ont., born at Perth, Ont., Aug. 13, 1874.

C. B. Brown, Chief Engineer, Operation Department, Canadian National Rys., Montreal, born at Ithaca, N.Y., Aug. 27, 1879.

A. B. Calder, Assistant to Chief Commissioner of Colonization and Development, C.P.R., Montreal, born at London, Ont., Aug. 24, 1867.

D. B. Carswell, Superintendent Engineer, Canadian Government Merchant Marine Ltd., Montreal, born at Paisley, Scotland, Aug. 3, 1884.

J. S. Carter, District Passenger Agent, C.P.R., Nelson, B.C., born at Aurora, Ill., Aug. 14, 1864.

Hon. F. B. Carvell, K.C., Chief Commissioner, Board of Railway Commissioners, Ottawa, Ont., born at Bloomfield, N.B., Aug. 14, 1862.

A. E. H. Chesley, General Accountant, Dominion Atlantic Ry., Kentville, N.S., born near Annapolis Royal, N.S., Aug. 27, 1877.

A. B. Chown, General Passenger and Baggage Agent, G.T.R. lines west of Detroit and St. Clair Rivers, Canadian National Rys., Chicago, Ill., born at Belleville, Ont., Aug. 4, 1887.

Col. F. F. Clarke, D.S.O., Chief Land Surveyor, Operation Department, Canadian National Rys., Montreal, born at Hamilton, Ont., Aug. 22, 1878.

C. H. N. Connell, District Engineer, Ontario District, Canadian National Rys., Toronto, born at Woodstock, N.B., Aug. 26, 1876.

S. W. Crabbe, Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., born at Teeswater, Ont., Aug. 9, 1885.

H. W. Crawford, ex-General Agent, Canada Steamship Lines, now of Toronto, born at Bowmanville, Ont., Aug. 24, 1887.

Capt. L. A. Demers, F.R.A.S., J.P., N.P., Dominion Wreck Commissioner, Ottawa, Ont., born at Montreal, Aug. 18, 1862.

E. L. Desjardins, Superintendent, Levis Division, Quebec District, Canadian National Rys., Levis, Que., born at St. Jean Port Joli, Que., Aug. 1, 1859.

J. V. Foy, General Passenger Agent, Canada Steamship Lines, Ltd., Toronto, born there, Aug. 27, 1882.

G. H. Griffin, General Agent, Passenger Department, Rail and Steamship Lines, C.P.R., Cleveland, Ohio, born at Boston, Mass., Aug. 2, 1877.

Geo. H. Ham, Head Office Department, C.P.R., Montreal, born at Trenton, Ont., Aug. 23, 1847.

W. B. Harper, Resident Engineer, Laurentian Division, Quebec District, C.P.R., Montreal, born at Baie Verte, N.B., Aug. 15, 1882.

C. A. deLotbiniere Harwood, K.C., Solicitor, Quebec Province, Central Reg-

ion, Canadian National Rys., Montreal, born at Vaudreuil, Que., Aug. 2, 1869.

F. S. Isard, Manager, Canada Steamship Lines, Ltd., Montreal, born at Hamilton, Ont., Aug. 14, 1888.

H. L. Johnston, District Engineer, Vancouver Island Lines, Canadian National Rys., Victoria, B.C., born at Fredericton, N.B., Aug. 29, 1862.

W. A. Kirkpatrick, Superintendent of Transportation, Saskatchewan District, Canadian National Rys., Saskatoon, Sask., born at West Lorne, Ont., Aug. 28, 1883.

F. L. Lamplough, Superintendent, Ottawa Division, Northern Ontario District, Central Region, Canadian National Rys., Ottawa, Ont., born at Cambridge, Vt., Aug. 15, 1867.

J. D. McDonald, ex-General Passenger Agent, Western Lines, G.T.R., and General Western Passenger Agent, Canadian National Rys., Chicago, Ill., born at Toronto, Aug. 27, 1855.

M. K. McQuarrie, Engineer, Dominion Atlantic Ry., Kentville, N.S., born at Sault Ste. Marie, Ont., Aug. 17, 1884.

A. H. Mahon, Master Mechanic, Canadian National Rys., Edson, Alta., born near Ottawa, Ont., Aug. 27, 1874.

H. J. Main, Superintendent, Trenton Division, Ontario District, C.P.R., Toronto, born at Kemptville, Ont., Aug. 16, 1885.

C. Montgomery, Master Mechanic, Pere Marquette Rd., St. Thomas, Ont., born near London, Ont., Aug. 29, 1860.

C. S. Morse, District Freight Agent, C.P.R., Ottawa, Ont., born there, Aug. 31, 1889.

W. G. Murrin, Vice President, British Columbia Electric Ry., Vancouver, B.C., born at Greenwich, Eng., Aug. 27, 1875.

L. Palk, Assistant to Vice President and General Manager and Assistant Secretary, Winnipeg Electric Ry., and Secretary, Winnipeg, Selkirk & Lake Winnipeg Ry., Winnipeg, born there, Aug. 14, 1885.

Capt. K. G. Polyblank, District Engineer in charge of construction, Longlac-Nakina cutoff, Canadian National Rys., Longlac, Ont., born at Bristol, Eng., Aug. 17, 1884.

Lieut.-Col. Blair Ripley, C.B.E., D.S.O., District Engineer, Ontario District, C.P.R., Toronto, born at Oxford, N.S., Aug. 29, 1880.

J. M. Rosevear, General Comptroller, Canadian National Rys., Montreal, born at St. Lambert, Que., Aug. 9, 1869.

W. LeB. Ross, Treasurer, Western Region, Canadian National Rys., Winnipeg, born at Ottawa, Ont., Aug. 9, 1868.

F. C. Salter, Manager, Foreign Department, Express Department, Canadian National Rys., Montreal, born at Sarnia, Ont., Aug. 31, 1863.

A. O. Seymour, General Tourist Agent, C.P.R., Montreal, born at Ogdensburg, N.Y., Aug. 14, 1887.

S. A. Simpson, Superintendent, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Winnipeg, born at Toronto, Aug. 22, 1880.

J. F. Sweeting, Industrial Agent, Natural Resources Department, C.P.R., Winnipeg, born at Worthing, Eng., Aug. 20, 1872.

W. J. Sturges, Fuel Agent, Western Region, Canadian National Rys., Winnipeg, born at Fairfield, Vt., Aug. 20, 1877.

L. Tait, Secretary-Treasurer, London St. Ry., London, Ont., born at Hamilton, Ont., Aug. 9, 1882.

W. D. Waddell, General Accountant, Canadian National Rys., Montreal, born at Waterford, Ireland, Aug. 7, 1877.

F. E. Warren, General Car Foreman, C.P.R., Winnipeg, born at Chelsea, Que., Aug. 29, 1872.

W. B. Way, Superintendent, Cochrane Division, Quebec District, Canadian National Rys., Cochrane, Ont., born at Bowmanville, Ont., Aug. 22, 1867.

H. E. Weyman, Manager, Levis County Ry., Levis, Que., born at Guildford, Eng., Aug. 27, 1883.

F. E. Whelpley, acting Treasurer, Atlantic Region, Canadian National Rys., Moncton, N.B., born at St. John, N.B., Aug. 20, 1861.

Transportation Events of Twenty-five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for July, 1898.

C.P.R.'s Montreal-Ottawa line completed.

C.P.R. opened Place Viger station and hotel at Montreal.

G.T.R. completes superstructure of Victoria Jubilee Bridge, Montreal.

Ottawa & New York Ry. completed between Cornwall, Ont., and Ottawa.

G.T.R. accepts R. A. Waite's plans for head office building on McGill St., Montreal.

Erie & Huron Ry., from Rondeau, Ont., to Sarnia, 76 miles, sold to Lake Erie & Detroit River Ry. Co.

Ottawa & New York Ry., and New York & Ottawa Ry., head offices removed to Ottawa, Ont., from Moira, N.Y.

Grant Hall, who had been removed from the mechanical foremanship of the Intercolonial Ry., at Moncton, N.B., took up his residence in Montreal.

Port Arthur, Duluth & Western Ry., which was built from Port Arthur, Ont., to the Minnesota boundary, at Gunflint Lake, 85½ miles, with a 6 miles extension beyond the boundary to Gunflint mines, was sold to Mackenzie, Mann & Co., for about \$250,000. They let a contract for clearing and grading the first 20 miles from Stanley, 19 miles from Port Arthur, to E. Fauquier. T. H. White was Chief Engineer.

The Interstate Commerce Commission sat in Chicago, to investigate the passenger rate war, between the C.P.R., on the one hand, and certain United States western lines, and their connections, including the Grand Trunk Ry., which charged that the C.P.R., in violation of the Act to Regulate Commerce, was making unreasonably low rates between various points in the U.S., not as a measure of legitimate competition, but as a means of retaliation for the purpose of exacting unreasonable demands upon its part, all of which was either denied or justified by the C.P.R.

Railway Lands Patented.— Letters patent were issued during June, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres
Calgary & Edmonton Ry.....	321.00
Canadian Northern Ry.....	2.11
Canadian Northern Western Ry.....	6.06
Canadian Pacific Ry.....	9.89
Qu'Appelle, Long Lake & Saskatchewan, Rd. & Steamboat Co.....	70.00
Total.....	409.06

Partial Suspension of Crowsnest Pass Freight Rates Agreement Continued.

The Dominion Government has suspended for another year the Crowsnest Pass agreement, with the exception of the portion of it relating to freight rates on grain and flour. The order in council, no. 1,279, passed on June 30, is as follows: "Whereas chapter 41 of the Statutes of Canada, entitled An Act to amend The Railway Act, 1919, provides as follows: '1. Subsection 5, of section 325, of The Railway Act, 1919, shall, notwithstanding the proviso thereof, remain in effect until the sixth day of July, 1923, and may be continued in force for a further period of one year by order of the Governor in Council published in The Canada Gazette; provided, that notwithstanding anything herein or in said subsection 5 contained, rates on grain and flour shall, on and from the 6th day of July, 1922, be governed by the provisions of the agreement made pursuant to chapter 5 of the Statutes of Canada, 1897.'

"Now therefore, His Excellency the Governor General in council, on the recommendation of the Minister of Railways and Canals, and in virtue of the authority vested in him by the said chapter 41 of the Statutes of Canada, 1922, is hereby pleased to order that the said subsection 5, of section 325, of The Railway Act, 1919, shall be and the same is hereby continued in force for a further period of one year, that is, until the 6th day of July, 1924, subject to the proviso contained in the said Act with respect to rates on grain and flour."

Section 325, subsection 5, of the Railway Act referred to in the order, is as follows: "Notwithstanding the provisions of section 3, the powers given to the Board under this act to fix, determine and enforce just and reasonable rates, and to change and alter rates as changing conditions or cost of transportation may from time to time require, shall not be limited or in any manner affected by the provisions of any act of the Parliament of Canada, whether general in application or special and relating only to any specific railway or railways, and the Board shall not excuse any charge of unjust discrimination, whether practised against shippers, consignees, or localities, or of undue or unreasonable preference, on the ground that such discrimination or preference is justified or required by any agreement made or entered into by the company; provided that this subsection shall remain in force only during the period of 3 years from and after the date of the passing of this act."

Section 325, subsection 3, referred to in section 5, is as follows: "Except as otherwise provided, any tariff in force, except standard tariffs hereinafter mentioned, may, subject to disallowance or change by the Board, be amended or supplemented by the company by new tariffs, in accordance with the provisions of this Act."

The Crowsnest Pass agreement, which was entered into in 1897, between the Dominion Government and the C.P.R. Co., under authority of an act passed by Parliament in that year, provided that, in consideration of a government subsidy of \$11,000 a mile for the construction of the C.P.R. line through the Crowsnest Pass, the railway would place in effect lower rates on certain specified commodities westbound, and on grain and flour eastbound. The exact rate reductions provided for were given in

Canadian Railway and Marine World for Feb. 1922, pg. 63. The Crowsnest Pass rates on grain and flour remained in effect in entirety from Sept. 1, 1899, until Oct. 7, 1903, when they were modified by lower rates resulting from an agreement made between the Province of Manitoba and the Canadian Northern Ry. Lower rates continued until March 15, 1918, when the 15% rate increase was allowed by the Board of Railway Commissioners. This was granted subject to the Crowsnest Pass agreement, and brought western grain rates up to the Crowsnest Pass maximum from most points in Saskatchewan and Alberta, though not in Manitoba. On July 16, 1918, further rate increases, occasioned by rising railway operating costs, were granted, and as the western grain and flour rates could not be further increased without violating the Crowsnest Pass agreement, order in council 1,863, of July 27, 1918, was passed, authorizing the Board of Railway Commissioners to disregard the agreement as a rate controlling instrument, and subsequently sub-sec. 5 was added to sec. 325 of the Railway Act, enabling the Board to disregard all rate controlling agreements, including the Crowsnest Pass agreement, for three years from July 6, 1919. The Crowsnest Pass agreement would therefore have become effective again on July 6, 1922, in the absence of further legislation. Prior to that date, however, after numerous hearings before a House of Commons special committee on transportation costs, dealt with fully in Canadian Railway and Marine World for June and July, 1922, and after the committee's report, given in full in our July 1922 number, had been presented, Parliament enacted that the Crowsnest Pass agreement should, except in respect of grain and flour, be suspended for one year from July 6, 1922, and gave the government power to suspend it further for one year, if, in its judgment, the then existing circumstances should justify such further suspension.

The order in council passed recently continues the suspension of the agreement, except in respect of grain and flour, until July 6, 1924, and the Crowsnest Pass rates on grain and flour will remain in effect until that date, unless, as is most unlikely in view of the railway operating ratios now prevailing, they are reduced further, and, unless further legislation is passed, the Crowsnest Pass schedule of rates in its entirety will again become operative on July 6, 1924.

Figures submitted to the special parliamentary committee in 1922, showed that the substitution of the Crowsnest Pass rates on grain and flour for those in effect immediately prior to the substitution, caused a loss to the C.P.R. of \$7,159,543 and to the C.N.R. of \$8,606,453 during the first year of operation under the re-applied Crowsnest Pass rates.

Canadian Railway Board of Adjustment No. 1.—A. E. Crilly, Chief of Wage Bureau, Canadian National Rys., and H. T. Malcolmson, Superintendent, Toronto, Hamilton & Buffalo Ry., have been appointed members of the Board, succeeding A. J. Hills, Assistant to Vice President, Operation and Construction, Canadian National Rys., and the late F. P. Brady, Assistant to Executive, Canadian National Rys.

Freight Rate Reductions, Quebec, Montreal & Southern Railway.

A recent Montreal press report said "For the first time on record, at any rate within recent years, a Canadian railway has voluntarily made a reduction in its freight rates. This unusual course has been taken by the Quebec, Montreal and Southern Ry., which has issued circulars announcing a straight reduction of 25% on all freight."

We are officially advised that the above report is incorrect, and that the Q.M. & S. Ry. has not issued circulars announcing a reduction of 25% on all freight. The management did, however, announce reductions in rates on flour, grain, lumber and building material, including brick, cement and sand. The Q.M. & S. rates on these commodities previously in effect were about 20% higher, on the average, than Canadian Pacific and Canadian National rates, and the effect of the reduction has been to bring the Q.M. & S. rates into line with those on the other lines.

The press report quoted erred badly in referring to the reductions as the first voluntary ones on record, or at any rate within recent years, as since the Board of Railway Commissioners last authorized an increase in freight rates Canadian railways have made individual rate concessions, and concessions of a more general nature, such as to live stock and milling industries. It is a good thing that Canadian railways are operated with more care and accuracy than are employed by daily newspaper writers who undertake to record railway activities.

The C.P.R. St. John River Bridge Case.

Mr. Justice Grimmer delivered judgment recently, in the New Brunswick Chancery Court, dismissing the Province of New Brunswick's action against the C.P.R. Co. and its subsidiary, the St. John Bridge & Ry. Extension Co., in respect of the construction of the bridge across the St. John River at the reversing falls at St. John. The main point at issue was the Government's contention that the control of the river was given to New Brunswick under the Ashburton Treaty. The bridge was built with the approval of the Dominion Department of Public Works, which has control of navigable waters, and of the Board of Railway Commissioners, and the matter was first brought up by some persons interested in shipping, who contended that the bridge was built at such a height above high water mark as to impede the passage in and out of the river of certain ocean going schooners. It is expected that the decision will be appealed, and that the case will be taken to the Imperial Privy Council.

St. James Hotel Property, Montreal.—A recent press report stated that the St. James Hotel, corner of St. James St. and Chaboillez Square, Montreal, would be taken over by the Canadian National Rys. and converted into an office building. We are officially advised that the building is owned by the C.N.R., having been taken over from the G.T.R., and is rented, but that possession can be obtained by giving three months notice. The management is considering whether the use that could be made of the space would be sufficient to offset the rent which is now being received.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 383. June 12.—Amending general order 124, April 30, 1914, prescribing regulations governing operation of draw, swing or bascule bridges over navigable waters, by striking out par. 3 and substituting, 3. The signal to be given by a steamer to have a swing bridge opened shall be three long whistles.

33,738. June 7.—Authorizing Canadian National Rys. to rebuild overhead highway bridge at mile 6.2 Lunenburg, Subdivision, N.S.

33,739. June 6.—Approving supplements 1 to 5, to connecting agreement between Bell Telephone Co. and Adelaide Telephone Co.

33,740. June 11.—Authorizing Canadian National Rys. to rebuild bridge at Main St., Harrisburg, Ont.

33,741. June 6.—Authorizing Esquimalt & Nanaimo Ry. to use portion of Johnson St. bridge, Victoria, B.C.

33,742. June 11.—Authorizing Canadian National Rys. to rebuild public highway bridge known as Given Road, Beverley Tp., Ont.

33,743. June 11.—Extending to July 1, 1924, time within which C.P.R. may erect freight shed at Kingston, Ont., under order 28,542, July 14, 1919.

33,744. June 11.—Rescinding order of Railway Committee of Privy Council, March 4, 1903, authorizing C.P.R. to build siding for Ontario Portland Cement Co., South Dumfries Tp., Ont.

33,745. June 6.—Authorizing Town of Ford City, Ont., to extend Huron St. across Pere Marquette Rd. in Ford City and Walkerville, Ont.

33,746. June 11.—Authorizing Canadian National Rys. to rebuild public highway bridge at Cons. 5 and 6, Innisfail Tp., Ont.

33,747. June 11.—Approving crossing of C.P.R. Calgary & Edmonton Branch, in s.w. ¼ Sec. 30, Tp. 48, Range 24, West 4th Meridian, Alta.

33,748. June 12.—Authorizing Canadian National Rys. to build siding for Sargeant Co., Orillia, Ont.

33,749. June 12.—Approving agreement between Bell Telephone Co. and Glengarry Telephone Co., Glengarry and Prescott Counties, Ont.

33,750. June 12.—Ordering Canadian National Rys. to put in new piping on south derail at crossing of Moose Jaw Electric Ry. by Canadian National Rys., at 10th Ave., Moose Jaw, Sask.

33,751. June 11.—Authorizing Hamilton Cataract Power, Light & Traction Co. to place 110-volt lines under Canadian National Rys., between Lots 1 and 2, Con. 1, Saltfleet Tp., Ont.

33,752. June 12.—Ordering Pere Marquette Rd. to repair fencing on its line on 8 lots, between Leamington and Wheatley, Mersea Tp., Ont.

33,753. June 14.—Authorizing Canadian Pacific Ry. to build second switching lead at grade across Port Arthur, Nelson and Clavet Sts., Port Arthur, Ont.

33,754. June 12.—Relieving Canadian National Rys. from fencing portion of its line from mile 0 to 31, both sides, Mountain District, Edson Division, B.C.

33,755. June 12.—Authorizing Canadian National Rys. to rebuild bridge carrying highway across its tracks, between Lots 24 and 25, Wilmet Tp., Ont.

33,756. June 13.—Authorizing Canadian National Rys. to build third track between Mimico and Port Credit, across town line between Toronto and Etobicoke Tps., Ont.

33,757. June 13.—Approving supplement to connecting agreement between Bell Telephone Co. and Gold Springs Rural Telephone Co., Northumberland County, Ont.

33,758. June 13.—Authorizing Canadian National Rys. to build spur for Ford Motor Co. of Canada, Danforth, Ont.

33,759. June 13.—Authorizing Canadian National Rys. to build third track across roads between Lots 10 and 11, Con. 2, south of Dundas St., Toronto Tp., Ont.

33,760. June 13.—Ordering Niagara, St. Catharines & Toronto Ry. to rebuild bridge on Victoria St., Stamford, Ont.

33,761. June 12.—Amending order 33,503, April 7, 1923, authorizing Canadian National Rys. to build spur for Quaker Oats Co., Peterborough, Ont.

33,762. June 12.—Authorizing North Cypress rural municipality, Man., to make highway across C.P.R., east of Wellwood station, Man.

33,763. June 12.—Authorizing Canadian National Rys. to rebuild bridge at Queen St., Newmarket, Ont.

33,764. June 14.—Authorizing C.P.R. to build spur across Coldstream Road, Vernon, B.C.

33,765. June 13.—Dismissing application of City of Windsor, Ont., for authority to extend Moy Ave. across Essex Terminal Ry.

33,766, 33,767. June 14, 15.—Authorizing C.P.R. to build spurs for Oliver Rogers Stone Co., Owen Sound, Ont.; and Union Oil Co. of Canada, Ver-

non, B.C.

33,768. June 15.—Approving Bell Telephone Co. agreement with Hawley Telephone Co., Lennox and Addington County, Ont.

33,769. June 14.—Authorizing Canadian National Rys. to build spur for Imperial Oil, Ltd., Morris, Man.

33,770. June 15.—Authorizing Canadian National Rys. to build third track, Mimico to Port Credit, across Dixie Road, or Golf Links crossing, Toronto Tp., Ont.

33,771. June 15.—Authorizing Waterloo Tp., Ont., to build highway across Grand River, opposite 2nd Ave., two miles south of Kitchener, Ont.

33,772. June 18.—Ordering Brantford & Hamilton Ry. to pay J. S. Coker, Gainsville, Ont., compensation for removal of hedge at crossing of Stone Road.

33,773. June 15.—Authorizing Canadian National Rys. to make highway crossing at mile 57.75, near St. Adelphie, Que.

33,774. June 18.—Authorizing Essex Terminal Ry. to build second track across Drouillard Road, Ford City, Ont.

33,775. June 11.—Authorizing Canadian National Rys. to divert road allowance between Secs. 16 and 17, Tp. 14, Range 8, West 2nd Meridian, through west half of Sec. 16 and across railway tracks, by a subway.

33,776. June 19.—Authorizing Canadian National Rys. to use bridge over Trent River, at Glen Ross, Ont.

33,777. June 18.—Relieving C.P.R. from further protection at crossing one mile west of Hungerford, Ont.

33,778. June 19.—Authorizing Canadian National Rys. to connect with Alma & Jonquiere Ry., near Hebertville, Que.

33,779. June 19.—Approving location of Canadian National Rys. 4th class station at Runnymede, Sask.

33,780, 33,781. June 19.—Authorizing British Columbia Public Works Department to make highway crossings over Canadian National Rys. near Barriere; and over C.P.R. at mile 45.66, west of Field, B.C.

33,782. June 19.—Authorizing Interprovincial & James Bay Ry. (C.P.R.) to build bridge 49.8 over Little River.

33,783. June 18.—Authorizing Canadian National Rys. to open for traffic its revised line from Ansell to Bickerdike, Alta.

33,784. June 18.—Authorizing Canadian National Rys. to rebuild bridge carrying highway over tracks in Con. 1, north of Governors Road, Beverley Tp., Ont.

33,785. June 20.—Authorizing C.P.R. to build spur for A. E. Woodward Elevator Co., Vancouver, B.C.

33,786 to 33,788. June 20.—Approving supplements to Bell Telephone Co. agreements with St. Jude Telephone Co., St. Hyacinthe County, Que.; Burnt River Telephone Co., Victoria and Peterborough Counties, Ont.; and Little Nation Telephone Co., Papineau County, Que.

33,789. June 20.—Ordering C.P.R. to afford cattle pass facilities for J. J. Crozier, Adamston Tp., Ont.

33,790. June 20.—Authorizing C.P.R. to build spur for Beatty Bros., Fergus, Ont.

33,791. June 18.—Approving location of Nipissing Central Ry. from Swastika, Ont., mile 0, easterly to mile 9.

33,792. June 20.—Approving supplements to Bell Telephone Co. agreement with Gore G Telephone Co., Prince Edward County, Ont.

33,793. June 21.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Genoa Lumber Co., in Lot 104, Chemainus District, Vancouver Island, B.C.

33,794. June 15.—Approving location of Interprovincial & James Bay Ry. (C.P.R.) standard no. 5 station at Latulippe, Que.

33,795. June 20.—Authorizing British Columbia Public Works Department to make highway crossing over C.P.R. at mile 44.39 west of Field, B.C.

33,796 to 33,799. June 15.—Approving location of Interprovincial & James Bay Ry. (C.P.R.) stations at Fabre, Lorrainville, Ville Marie and Laverlochere, Que.

33,800. June 25.—Approving location of C.P.R. Tuffnel to Prince Albert Branch, mile 0 to 68.15 and authorizing crossing of a number of highways.

33,801 to 33,805. June 16.—Approving Bell Telephone Co. agreements with Fingal Telephone Co., Elgin County; Bethesda & Stouffville Telephone Co., York & Ontario Counties; Springbank Telephone Co., and Howick Municipal Telephone System, Huron & Wellington Counties; and Fordwich Rural Telephone Co., Huron & Perth Counties, Ont.

33,806. June 18.—Ordering Canadian National Rys. to build station facilities at Clair, Sask., by Sept. 30.

33,807. June 24.—Authorizing Town of Melville, Sask., to carry Atlantic Ave. across Canadian National Rys.

33,808. June 26.—Authorizing Canadian National Rys. to build third track across a highway south of Dundas St., Toronto Tp., Ont.

33,809. June 23.—Authorizing Ontario Public

Highways Department to straighten highway crossing over C.P.R. west of Stittsville, Ont.

33,810. June 22.—Authorizing Canadian National Rys. to cross Neehing Ave., and connect with C.P.R. industrial track at Fort William, Ont.

33,811. June 21.—Dismissing application of Commercial Travellers' Association for order directing Canadian National Rys. to make connections by its G.T.R. train 41 with C.P.R. Sudbury train at North Bay, Ont.

33,812. June 24.—Authorizing Canadian National Rys. to build third track across highway in Lot 7, Con. 2, south of Dundas St., Toronto Tp., Ont.

33,813. June 24.—Recommending to Governor in council for sanction, an agreement between Michigan Central Rd. and Toronto, Hamilton & Buffalo Ry.

33,814. June 26.—Authorizing Canadian National Rys. to build third track across highway in Lot 8, Con. 2, south of Dundas St., Toronto Tp., Ont.

33,815. June 23.—Rescinding order 15,792, Jan. 13, 1912, authorizing construction of highway over Columbia & Western Ry. (C.P.R.), at 7th St., Eholt, B.C.

33,816. June 23.—Approving clearances at C. P.R. coaling plants at Outremont and Megantic, Que.

33,817. June 27.—Approving Canadian National Rys. revised plan of automatic signals between Toronto and Hamilton, Ont.

33,818. June 29.—Approving location of C.P.R. Tuffnel to Prince Albert Branch, mile 68.15 to 94.26.

33,819. June 28.—Authorizing Canadian National Rys. to open for traffic the diversion of its Welland Division from south of Thorold station, to a connection with old main line, in Lot 71, Thorold Tp., Ont., 2.2 miles.

33,820. June 29.—Authorizing Canadian National Rys. to divert highway across its tracks at mile 443.63, Battleford Subdivision, Sask.

33,821. June 29.—Authorizing Canadian National Rys. to open for traffic, portion of second track of main line, mile 11.1 to 13.2, Kashabowie Subdivision, Ont.

33,822 to 33,824. June 29.—Approving C.P.R. plans of replacement of 120 ft. through Howe truss span by 100 ft. through pony truss span at bridge 65.22, Shore Line Subdivision, over Musquash River, Ont.; alteration in bridge 97.6, Lachute Subdivision, over Trepannier Creek, Que.; and replacement of deck plate girder span by 33 ft. deck girder beam span in bridge 80.1, over Papineauville Creek, Lachute Subdivision, Que.

33,825. June 29.—Authorizing Canadian National Rys. to cross northerly end of Avondale Ave., Hamilton, Ont.

33,826. June 29.—Authorizing Canadian National Rys. to enter upon lands of Mrs. M. Burns, A. E. Hancock and F. E. Walker, Woodstock, Ont., to remove obstructions to view at crossing of Ingersoll Road.

33,827. June 29.—Dismissing application of Toronto Tp., Ont., for authority to carry highway across Canadian National Rys. on Lot 12, Con. 2, south of Dundas St.

33,828. June 29.—Relieving Canadian National Rys. from maintaining watchmen at crossings of Charlotte and Simcoe Sts., Peterborough, Ont., between 10.30 p.m. and 6.30 a.m. during January, February, March and April, movements over crossings to be flagged.

33,829, 33,830. June 20.—Approving C.P.R. plan showing alteration to bridge 79.17, over Papineauville Creek, Lachute Subdivision, Que.; and in bridge 25.25, over Douglas Stream, St. John's Subdivision, Que.

33,831. June 29.—Ordering Canadian National Rys. to install automatic bell and wigwag signal at crossing immediately east of Charlesbourg West station, Que.

33,832. July 3.—Declaring that for the present, the Canadian National Rys. crossing near Collins Bay station, Ont., is protected to Board's satisfaction.

33,833 to 33,840. July 3.—Approving Bell Telephone Co.'s agreements with St. Paul de Chester Telephone Co.; Brown Corporation; Cecile Swale Telephone System; Stoke Rural Telephone Syndicate; Muskoka and Parry Sound Telephone System; East Middlesex Telephone Co.; Richelieu Telephone Co., and Kirkton Telephone Co.

33,841. June 29.—Approving Canadian National Rys. standard passenger tariff C.R.C. no. E.542-W457, effective July 1.

33,842. July 3.—Declaring that for the present, the Canadian National Rys. crossing at Featherstone, near Thamesville, Ont., is protected to Board's satisfaction.

33,843. July 3.—Approving agreement between Bell Telephone Co. and Roman Catholic Episcopal Corporation, Kingston Diocese, Ont., for service station.

33,844. July 5.—Authorizing Lamerton Municipality 398, Alta., to make highway across Canadian National Rys. in Sec. 3, Tp. 39, Range 23, West 4th Meridian, Alta.

33,845. July 4.—Authorizing Laval Electric Co. to erect 25,000 volt power transmission line

over Canadian National Rys. tracks and telegraph line, near L'Assomption station, Que.

33,846. July 5.—Authorizing Lower St. Lawrence Power Co., Rimouski, Que., to erect 33,000 volt transmission line from Rimouski to Riviere Metis, paralleling Canadian National Rys. track and telegraph lines for about 22 miles.

33,847. July 5.—Authorizing opening for traffic of connection, at Camrose, Alta., between Canadian Northern Battle River Subdivision, mile 53.29, and Grand Trunk Pacific Ry. Bashaw Subdivision at mile 33.40, also south leg of Y.

33,848, 33,849. July 3, 4.—Approving Bell Telephone Co.'s agreements with Fort Coulogne Rural Telephone Co.; and Molesworth Independent Telephone Co.

33,850. July 5.—Authorizing C.P.R. to build third track across road allowance between Secs. 35 and 36, Tp. 11, Range 8, West 1st Meridian, Man., mile 63.6, Carberry Subdivision.

33,851. July 4.—Authorizing Canadian National Rys. to cross Brant Ave., Burlington, Ont., with second track.

33,852. July 4.—Authorizing Quebec, Montreal & Southern Ry. to remove shelter station at Lake St. Paul, to Ste. Gertrude siding, Que.

33,853. July 4.—Ordering Canadian National Rys. to stop trains 87 and 88 at Wendover, Ont., on Saturdays, during June, July, August and September, when necessary, to enable passengers from Montreal and Ottawa to detain, and on Mondays, to enable passengers for Montreal and Ottawa to entrain.

33,854. July 3.—Ordering that obstructions to view at crossing of Canadian National Rys. at William St., Cobourg, Ont., be cut down; and that C.N.R. install electric bells and wigwag signals at each side of crossing.

33,855. July 3.—Declaring that for the present, the third highway crossing east of Delhi, Ont., over G.T.R., is protected to Board's satisfaction.

33,856. July 3.—Declaring that for the present, C.P.R. crossing near Lonsdale station, Ont., is protected to Board's satisfaction.

33,857. July 5.—Authorizing Canadian National Rys. to build diversion of east and west road allowance between Secs. 12 and 13, Roe, Sask.

33,858. July 5.—Authorizing Hydro Electric Power Commission of Ontario to build permanent structure to carry Niagara, St. Catharines & Toronto Ry. over its tracks in Lots 77 and 90, Stamford Tp., Ont.

33,859. July 5.—Authorizing Canadian National Rys. to build tracks across Dargenson St., Montreal.

33,860. July 5.—Approving general location of C.P.R. Pashley Northeasterly Branch, mile 28.77 to 32.49.

33,861. July 5.—Authorizing Canadian National Rys. to build spur through Blocks H and A2, Vancouver, B.C.

33,862. July 5.—Approving revised route map of C.P.R. Leader Southeasterly Branch, mile 44.65 to 49.5.

33,863, 33,864. July 9.—Approving location of C.P.R. Archive to Wymark Branch, mile 31.67 to 53.16, and mile 77.11 to 77.36, Sask., and authorizing crossing of a number of highways.

33,865. July 9.—Approving C.P.R. plan of proposed changes in interlocking plant at crossing of Pere Marquette Ry., Chatham, Ont.

33,866. July 9.—Ordering that cost of drainage works built for the subway where Canadian National Rys. cross highway between Lots 15 R I N and 15 R I S, Ekfrid Tp., Ont., viz.: \$871.33, be paid two-thirds by C.N.R. and balance by Ontario Highways Department.

33,867. July 10.—Authorizing C.P.R. to replace 100-ft. through truss span by 100-ft. deck plate girder span in bridge 72.8, Lachute Subdivision, Que.

33,868. July 9.—Approving connecting agreement between Bell Telephone Co. and Wroxeter Telephone Co.

33,869. July 9.—Authorizing Canadian National Rys. to build third track across Kingsbury Ave., Etobicoke Tp., Ont.

33,870. July 9.—Authorizing C.P.R. to rebuild bridge 26.7, Timiskaming Subdivision, Devil's Garden, Ont.

33,871. July 9.—Approving supplements to connecting agreement between Bell Telephone Co. and Beckwith & Montague Rural Telephone Co.

33,872. July 6.—Authorizing C.P.R. to build spur for Hull & Ottawa Power & Manufacturing Co., Campbells Bay, Que.

33,873. July 9.—Ordering Pere Marquette Ry. to place in operation by Sept. 1, standard 30 ft. mail cars, between London and Walkerville, and Blenheim and Sarnia, Ont.

33,874. July 6.—Approving supplement to connecting agreement between Bell Telephone Co. and Brompton Pulp & Paper Co.

33,875. July 6.—Authorizing Canadian National Rys. to rebuild bridge across its tracks, near Georgetown, Ont.

33,876. July 9.—Approving agreement between Bell Telephone Co. and West Garafraxa Telephone Co-operative Association.

33,877. July 9.—Relieving C.P.R. from fencing certain portions of right of way within Toronto terminals, and in Oshawa and Galt, also in North Toronto and Queen's Wharf Branches.

33,878, 33,879. July 9.—Approving supplements to Bell Telephone Co.'s agreements with Russell Rural Telephone Co., and South Bruce Rural Tele-

phone Co.

33,880. July 9.—Authorizing York Tp., Ont., to build bridge across Canadian National Rys. between Astley Ave. and Douglas Drive, Toronto.

33,881. July 9.—Authorizing Canadian National Rys. to build second track across Ontario St., Burlington, Ont.

33,882. July 7.—Extending to Aug. 1 and Sept. 1, the time within which Canadian National Rys. may rebuild bridge on Victoria St. Stamford, Ont.

33,883. July 10.—Authorizing C.P.R. to replace 100-ft. through span by 100-ft. deck plate girder span in bridge 92.7, Lachute Subdivision, Que.

33,884. July 10.—Authorizing C.P.R. to build spur for Satin Finish Hardwood Flooring, Ltd., Weston, Ont.

33,885. July 11.—Authorizing Canadian National Rys. to rebuild bridge 59.2, Brazeau Subdivision, Alta.

33,886. July 12.—Declaring that for the present, Canadian National Rys. crossing at mile 121, Minaki Subdivision, east of Transcona, Man., is protected to Board's satisfaction.

33,887. July 9.—Approving agreement between Bell Telephone Co., and Wallingford Bros. Ltd.

33,888. July 13.—Amending order 32,134, Feb. 18, 1922, authorizing C.P.R. to build crossing between Lots 10 and 11, Con. 6, Aubrey Tp., Kenora District Ont., by providing that cost be paid by Ontario Lands and Forests Department.

33,889 to 33,891. July 12.—Declaring that for the present Canadian National Rys. crossings 7 miles east of Eckville, Alta.; at mile 60, Alderdale Division, Martin's crossing, Old Government Road, Ont., and at Palmerston, Ont., are protected to Board's satisfaction.

33,892. July 12.—Declaring that C.P.R. crossing near St. Vincent de Paul, Que., is protected to Board's satisfaction, provided company keep cars back one car length on each side of highway.

33,893. July 12.—Declaring that for the present, Canadian National Rys. crossing east of St. Casimir station, Que., is protected to Board's satisfaction.

33,894. July 12.—Declaring that for the present, C.P.R. crossing about 2 miles east of Port Hope, Ont., is protected to Board's satisfaction.

33,895. July 13.—Ordering that on portions of Canadian National Rys. Western Lines in prairie provinces, operated through non-forested territory, the provisions of general order 362, clause 8, be suspended after Aug. 1, in case of locomotives equipped with barrel type spark arrester.

33,896. July 12.—Declaring that for the present, Michigan Central Rd. crossing, 1½ miles east of Leamington, Ont., is protected to Board's satisfaction.

33,897. July 12.—Approving agreement between Bell Telephone Co. and Metcalfe Rural Telephone Co.

Freight Car Conditions and Supply.

The Railway Association of Canada reports that on July 1 there were 201,741 freight cars on Canadian lines, of which 15,451 were in bad order. The A.R.A. allowance, on a 7% basis, works out to 14,122 allowable bad order cars, so that the excess number over the A.R.A. figure was 1,329. The actual bad order percentage was 7.6, compared with 7.7% at June 1. A shortage of 750 cars was reported, compared with a shortage of 350 at June 1 and 1,360 at May 1. The American Railway Association Car Service Division reports that in the U.S., on June 15, there were 200,784 freight cars of all kinds in need of repair, this being 8.9% of the total number of cars on U.S. roads, and 10,982 less than on June 1, when 9.4% were in bad order. Despite the fact that U.S. railways are experiencing the heaviest car loading in their history, the car surplus on June 22 more than balanced car shortage, the total surplus on that date being 58,671 cars, and the total shortage 11,896. In the week ended June 23, there were 1,002,740 cars loaded with revenue freight on U.S. lines, 136,419 more than in the corresponding week of 1922, and 227,293 more than in the corresponding week of 1921.

Telephone Train Dispatching on Canadian National Rys.—With the completion of the telephone circuit between Campbellton, N.B., and Mont Joli, Que., trains are now being dispatched by telephone on the main line from Halifax and St. John in the east, to Vancouver and Prince Rupert in the west.

Railway Rolling Stock Orders and Deliveries.

The C.P.R. has ordered 30 vans, to be built in its Angus shops, Montreal.

Canadian National Rys. received, during June, 100 automobile cars and 20 baggage cars, from Canadian Car & Foundry Co.

The C.P.R. has received 12 Pacific type (4-6-2) locomotives, with cylinders 25 x 30 in., from Montreal Locomotive Works.

Timiskaming & Northern Ontario Ry. has ordered 2 all-steel snow ploughs from Canadian Car & Foundry Co., for delivery by Nov. 1.

Quebec Development Co. has received 4 four-wheel (0-4-0T) locomotives, with cylinders 14 x 22 in., from Montreal Locomotive Works.

The C.P.R. has received 7 baggage cars, out of an order for 15, from National Steel Car Corporation. The balance was expected to be delivered by the end of July.

The Canadian National Rys. order for 15 milk cars, to be built at its Port Huron, Mich., shops, for the Central Vermont Ry., as mentioned in our last issue, has been increased to 20.

Canadian National Rys. have ordered 750 single sheathed steel frame 60-ton box cars, from Canadian Car & Foundry Co., and 250 from National Steel Car Corporation.

Canadian National Rys. have received 6 additional Mountain type locomotives, which were fully described and illustrated in Canadian Railway and Marine World for July, from Canadian Locomotive Co.

The C.P.R., between June 13 and July 14, received 14 Pacific type G-3 locomotives from Montreal Locomotive Works; 4 steel baggage and express cars, from National Steel Car Corporation; and bought 1 Jordan all-steel ballast spreader.

Canadian National Rys. have received 10 express refrigerator cars, 898 repaired steel underframe 49-ton box cars, and 200 repaired refrigerator cars, from National Steel Car Corporation. It was expected that 40 additional express refrigerator cars, the balance of an order for 50, would be delivered by the end of July.

United States locomotive builders continue to operate their plants to capacity, as shown by the following figures, supplied by the U.S. Department of Commerce: Locomotives shipped during June, 232, compared with 238 in May 1923, and 114 in June 1922; total shipments for first 6 months of 1923, 1,405, compared with 362 in first 6 months of 1922; unfilled orders at end of June 1923, 1,958, compared with 2,150 at end of May 1923, and 596 at end of June 1922.

Railway Accidents Throughout Canada.

—The number of railway accidents during June, reported to the Board of Railway Commissioners, was 249, in which, 3 employees and 13 others were killed, and 36 passengers, 199 employees and 35 others were injured. Included in "others" were 6 persons killed and 19 injured in 19 highway crossing accidents, the crossings being unprotected in 17 cases, and protected in 2 cases by gates and bell respectively. Automobiles and motorcycles were concerned in 8 of these accidents, other vehicles in 8, a bicycle in 1 and pedestrians in 2.

Reduction in Rates on Western Live Stock.

The Western Stock Growers' Association, with headquarters in Calgary, Alta., asked D. C. Coleman, Vice President, Western Lines, C.P.R., for a conference with that company's freight traffic officers for the purpose of discussing freight rates on certain live stock movements, and, as a result, Geo. Stephen, Assistant Freight Traffic Manager, Western Lines, C.P.R., suggested to Canadian National Rys. freight traffic officers that they should join the C.P.R. freight traffic officers and the live stock men in a conference. It was held at Calgary on May 29, C.P.R. and C.N.R. traffic men and Western Stock Growers' Association representatives being present, and after examination of representations made by the Association representatives, the railways, to extend some needed assistance to the live stock industry in Western Canada, agreed on the following rate revisions:

Effective June 15, 1923, the carload rate on horses from points in the three prairie provinces to eastern Canada was reduced to the basis of 10c per 100 lb. over the carload rate on cattle. This was a restoration of the spread formerly in effect as between the carload rates on horses and cattle from the three prairie provinces to eastern Canada.

The arrangement covering the return transportation of men who go east with carload shipments of cattle was extended to apply to attendants in charge of carload shipments of horses, effective June 15, 1923. Prior to that date no reduced return transportation was issued to attendants in charge of horse shipments.

Effective June 15, carload shipments of cattle, pigs and sheep shipped from central marketing points, such as Winnipeg, Calgary, Edmonton and Moose Jaw, to farmers, for breeding, feeding and finishing purposes, are carried on the basis of 50% of the regular tariff rate, instead of 75% as prior to that date. This reduction was made in view of the long rail hauls involved from the central marketing points mentioned above, back to the points to which the stock will be returned for breeding, feeding and finishing.

In addition, the C.P.R. published a temporary tariff, effective June 15, and expiring Sept. 15, on stocker cattle from points in Manitoba to points in southern Alberta, on the basis of 50% of the regular tariff applicable on cattle in carload lots. This is a temporary action by the C.P.R., to assist the southern Alberta ranchers in replenishing their herds.

Ex-Soldiers in Railway Service.—The Great War Veterans' Association, at its convention in Vancouver, B.C., recently, passed a resolution stating that under the working agreement between the Canadian National Rys. and the men's representative, in the event of a reduction of staff, seniority of service governs, and this would affect a majority of ex-service men now employed. All members of His Majesty's forces should take their seniority before that of any unnaturalized alien; their seniority should be dated as from the date on which they joined the forces, such seniority rights to be applied in all instances, except for promotion in the service, and ex-members of His Majesty's forces should be given preference for employment and promotion.

Among the Express Companies.

H. H. Carr, heretofore agent, Dominion Ex. Co., Truro, N.S., has been appointed agent, North Bay, Ont.

W. E. Norton, heretofore agent, Dominion Ex. Co., Sydney, N.S., has been appointed agent, Cobourg, Ont.

R. P. Dunphy, heretofore agent, Dominion Ex. Co., New Glasgow, N.S., has been appointed agent, Chappleau, Ont.

T. R. Mackenzie, heretofore route agent, Dominion Ex. Co., Truro, N.S., has been appointed route agent, Sherbrooke, Que.

N. R. Weir, heretofore route agent, Dominion Ex. Co., Campbellton, N.B., has been appointed route agent, North Bay, Ont.

The Canadian National Rys. Express Department has opened offices at Elmira, P.E.I.; Norway Bay, Que.; Lake Joseph and Bala Park, Ont., and Alberta Beach, Alta.

J. E. Coulter, heretofore chief clerk, Vice President and General Manager's office, Dominion Ex. Co., Toronto, has been appointed Assistant to Vice President and General Manager there.

M. Calder, heretofore agent, Dominion Ex. Co., Charlottetown, P.E.I., has been appointed General Agent, in charge of Prince Edward Island business, Express Department, Canadian National Rys. Office, Charlottetown.

Express companies reduced rates on business eastbound from Canada to Europe, effective July 9, on similar lines to those put into effect on westbound business from Europe to Canada, April 20. These reductions, ranging between 15 and 20%, are in the ocean proportion of the through rates, and affect all classes of traffic. The effect of the reduction on westbound traffic is reported to have been good, and it is hoped that by extending the reduction to eastbound traffic, there will be a further stimulation of business between Canada and Europe.

R. E. M. Cowie, Vice President, American Railway Ex. Co., in a recent address before the Providence, R.I., Chamber of Commerce, said: "It is an impressive fact that the American Railway Ex. Co. issues more waybills every day of the year than all the railways of the U.S. combined. If this does not convey an idea of the enormous quantity of shipments that are handled by express, the business at New York City is even more illuminating. A record of the declared value of all shipments kept recently showed that the average value of express cargo handled in New York City alone every day amounted to at least \$50,000,000. If to these figures were added the value of all shipments moving by express to and from all points in the country every 24 hours, a better idea could be gained of the enormous liability assumed by the express company in the transportation of its current business. Twenty-four exclusively express trains, consisting of between 300 and 400 cars, are required to take care of the New York City business every night."

Gilbert E. Bellerose, heretofore General Assistant, Express Department, Canadian National Rys., Montreal, has been appointed General Superintendent of Transportation, Express Department, C.N.R., Montreal. He was born at Penetanguishene, Ont., July 15, 1884, and entered transportation service in March 1902, since when he has been, to May 1903, car service clerk, G.T.R., Toronto; June 1903 to May 1904, clerk and messenger, train service, Dominion Ex. Co.,

Eastern Lines; May 1904 to Sept. 1909, messenger, train service, and agent, same company, Western Lines; Oct. 1909 to Nov. 1911, chief clerk, acting agent, and messenger, train service, Great Northern Ex. Co., lines in British Columbia and Pacific northwestern states; Nov. 1911 to June 1915, messenger, train service, and station agent, Dominion Ex. Co., Victoria, B.C., Nelson, B.C., and Calgary, Alta.; July 1915 to June 1917, messenger, train service, Canadian Northern Ex. Co., Winnipeg; Feb. 1917 to Nov. 1920, Traffic Supervisor, same company, Winnipeg; Nov. 1920 to Aug. 1921, Assistant to General Manager, Canadian National Ex. Co., Winnipeg; Aug. 1921 to March 1923, Assistant to General Manager, same company, Montreal; March to June 1, 1923, General Assistant, Express Department, Canadian National Rys., Montreal.

Telegraph and Cable Matters.

Tests made by the Marine Department with a view to establishing a wireless direction finding station at Pachena Point, on the west coast of Vancouver Island, were completed recently. It is anticipated that the station will be ready for operation this summer.

Telegraph, and other companies operating overhead lines, suffered considerable loss during the heavy storms in southern Ontario during the last few days of June. Canadian National Telegraphs report the greatest loss between Guelph and Stratford, Toronto and Hamilton and London, where several stretches of line were carried down by falling trees, buildings, etc.

Canadian National Telegraphs have installed teletypes on the Stobie-Forlong leased wires at London and Oshawa, Ont., the two circuits comprising 10 teletypes, one at Peterborough and Oshawa, two at Toronto and Hamilton, and one at St. Catharines, Brantford, Kitchener and London. Communication is carried on in either direction and between any of the offices on the circuit. This is said to be the largest installation in Canada.

Canadian National Telegraphs electricians are installing new cordless pin jack switchboards in Toronto, Montreal and Quebec, and will shortly commence installing power plants and repeaters at Sioux Lookout, Ont., and Riviere du Loup, Que., for the rerouting of circuits. The repeaters at Sioux Lookout will provide an alternate route for circuits between east and west via Port Arthur, and repeaters at Riviere du Loup will eliminate the necessity for extending overland circuits through the submarine cable between Quebec and Levis, which has been a source of considerable trouble, due to passing ships dragging anchor and interrupting the cable.

The Minister of Marine has issued a regulation requiring as a condition of the granting of a radiotelegraph license, that the licensee shall deposit \$50 as security for the payment of coast station and land line delivery charges for radiotelegraphic messages originating on board any ship, in respect of which the license is issued, and transmitted via any coast station, domestic or foreign, the deposit may be appropriated for the payment of any such charges, not paid in due course, and will be returned at the expiry of nine months from the termination of the license, subject to any deductions for unpaid charges, as mentioned.

Electric Railway Department

Canadian Electric Railway Associations Annual Meeting in Toronto.

When Canadian Railway and Marine World for July went to press, the Canadian Electric Railway Association's annual meeting, scheduled for June 27 to 30, was in progress in Toronto, but we were able to publish the general programme, and to give a list of the exhibitors of electric railway supplies and equipment, and particulars of their principal exhibits. Owing to the unavoidable absence of the President, Major F. D. Burpee, Manager, Ottawa Electric Ry., necessitated by the conferences going on in reference to the company's employees' wages and working conditions, the Vice President, H. H. Couzens, General Manager, Toronto Transportation Commission, presided at the business meetings, the luncheons and the annual dinner, and performed those duties, which devolved on him most unexpectedly, to the great satisfaction of all in attendance. As stated in our previous issue, the exhibits were displayed in the Music Building, on the Canadian National Exhibition grounds, the business meetings being held in the adjoining amphitheatre, a most ideal arrangement, made by a committee, of which C. L. Wilson, Superintendent, Hydro Electric Rys., Toronto & York District, was chairman. The general programme, as given in Canadian Railway and Marine World for July, was adhered to very closely, except for the changes necessitated by the absence of Major Burpee, as referred to above, and of Lt.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., who was to have spoken at the dinner.

Business Meetings.

June 27.—Mr. Couzens, in taking the chair at the opening meeting, expressed regret at Major Burpee's absence. The Association's Treasurer, W. S. Hart, Treasurer, Quebec Ry., Light, Heat & Power Co., and Vice President Three Rivers Traction Co., presented the financial statement, showing \$2,859.81 on hand. The Secretary, D. N. Gill, Comptroller, Ottawa Electric Ry., presented his report, from which the following is summarized: The Association's membership consists of 35 electric railways, the same number as in the previous year, Brantford Municipal Ry. having joined, and Windsor, Essex & Lake Shore Rapid Ry. having withdrawn. The associated membership consists of 33 electric railway supplies manufacturers and dealers. A large number of enquiries were received during the year from member companies. Some of these were answered from information on the Association's files, and in the other cases, questionnaires were sent out. Three charts, with full information as to wages paid employees, and working conditions, were compiled and distributed. The report also dealt with the work done by the Association in connection with Dominion and provincial legislation, claims for damages for street railway accidents, Dominion Government tax on bond interest, the work of the committees on public relations, standards, safety, and accounting of maintenance and depreciation of street railway assets, and proceedings before the Board of Railway Commissioners respecting air brake cars, and compensation for carrying mails.

June 28.—G. Gordon Gale, Vice President and General Manager, Hull Electric Co., and chairman of the standards committee, presented its report, explaining the Canadian Engineering Standards Association's work, which is giving the C.E.R.A. representation on its sectional committees for drafting standard specifications on wire strand, signals on highways, and overhead crossings.

Alex. Jackson, Superintendent of Time Tables, Public Service Ry. Co., Newark, N.J., read a paper on a scientific traffic survey of traffic movements on urban railways, which was discussed by D. N. Wilson, Engineer on Traffic Surveys; J. McCulloch, Traffic Superintendent; J. W. Howden, in charge of traffic surveys, and A. K. Bunnell, of the executive staff,

Wilson, Superintendent, Hydro Electric Rys., Toronto and York Districts; G. Gordon Gale, Vice President & General Manager, Hull Electric Co.; and C. B. King, Manager, London St. Ry.

W. G. Gordon, Traction Engineer, Canadian General Electric Co., read a paper on the proper motor for a given cycle of duty, which he supplemented by considerable additional information on points suggested by D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., who took part in the discussion as also did M. Buck, Electric Railway Journal; and W. R. Robertson, General Superintendent, Ontario Hydro Electric Rys.

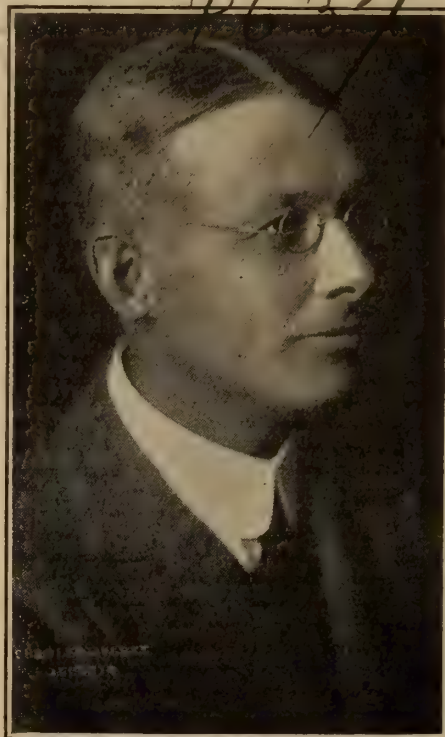
June 30. The report of the committee on public relations, of which A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry., was chairman, was read and adopted.

Don M. Campbell, chairman of the associate members committee, suggested that the Association's next annual meeting be held in Ottawa. G. Gordon Gale, suggested that an attempt be made to hold the Association's next annual meeting, and that of the Canadian Electric Association, and possibly other electric associations, at the same place and during the same week, the manufacturers to make one combined exhibit throughout the week, and the various associations to meet separately on different days. It was decided that the incoming executive committee endeavor to arrange this.

The nominating committee, consisting of the Association's past presidents, which was appointed at the first day's meeting, presented a report, recommending persons for election as Honorary President, Honorary Vice President, honorary councillors, Treasurer, executive committee, and Auditor. Their names, etc., are given in the center of page 398. Subsequently, the President elect, H. H. Couzens, in accordance with the usual custom, appointed Eustace Smith, Jr., Executive Assistant, Toronto Transportation Commission, as the Association's Secretary.

The rest of the morning session was devoted to a number of timely topics, which had been listed for discussion.

Exhibits.—In addition to the manufacturers and supply houses exhibits, which were dealt with fully in Canadian Railway and Marine World for July, the Toronto Transportation Commission had, on a track near the eastern entrance to the exhibition grounds, an exhibit of rolling stock, made up as follows: A large motor car built by Canadian Car & Foundry Co. and equipped with English Electric Co. electrical and control apparatus, to which was attached a 3-door trailer. This type of car was described and illustrated in Canadian Railway and Marine World for June, 1921, pg. 319, and the trailer in the Sept. 1922 issue, pg. 473; a motor car similar to the above, and also built by Canadian Car & Foundry Co., but equipped with Westinghouse electrical and control apparatus, to which was attached a 2-door trailer, of the type described in Canadian Railway and Marine World for June 1921, pg. 318; a motor car similar to the above, built by Canadian Brill Co., and equipped with Canadian General Electric



H. H. Couzens,
General Manager, Toronto Transportation Commission, and President, Canadian Electric Railway Association, 1923-1924.

Toronto Transportation Commission; W. R. Robertson, General Superintendent, Ontario Hydro Electric Rys.; C. B. King, Manager, London St. Ry.; H. E. Weyman, Manager, Levis County Ry.; R. M. Reade, Superintendent, Quebec Ry., Light, Heat & Power Co.; W. J. Radford, Assistant Manager, Toronto Suburban Ry.; and C. P. Nachod, Nachod Signal Co., Louisville, Ky.

June 29. H. E. Weyman, Manager, Levis County Ry., and chairman of committee on valuation, maintenance, and depreciation, of street railway assets, presented its report, which was discussed by him, and by H. H. Couzens, General Manager, Toronto Transportation Commission; W. R. Robertson, General Superintendent, Ontario Hydro Electric Rys.; A. B. Ingram, Vice Chairman, Ontario Railway & Municipal Board; H. P. L. Hillman, acting comptroller, Toronto Transportation Commission; C. L.

Co. electrical and control apparatus; a 47 ft. motor car of the type described in Canadian Railway and Marine World for Sept. 1922, pg. 473, built by Canadian Car & Foundry Co.; a motor car of the same type, built by Ottawa Car Manufacturing Co.; a double truck motor car, 2,104, taken over from the Toronto Railway Co., operated formerly on the p.a.y.e. system, and converted into a car on which the passenger pays as he leaves, if he is in the front section, or as he passes the conductor, if he wishes to pass into the rear section, as in the Commission's new equipment; a 2-car train, made up of 2 of the double truck cars taken over from the Toronto Ry. Co.; a Birney safety car; a single truck car taken over from the Toronto Ry., the Commission still having 66 of these on hand; a train consisting of a single truck motor car and single truck trailer which was in operation by the Toronto Ry. in Sept. 1921, when the Commission assumed control of the lines; and a differential dump car.

The associate members re-elected their officers, as follows,—Don M. Campbell, Preston, Ont., chairman; H. T. Gibbs, Sales Engineer, Canadian Westinghouse Co., secretary; O. C. Rehfus, Mechanical Engineer, Canadian Steel Foundries, treasurer. The associate members, who were very much pleased with the way in which the arrangements for the exhibits, etc., were handled made the following presentations viz., C. L. Wilson, chairman of exhibit committee, a cane; W. R. McRae, chairman entertainment committee, a pipe; C. H. Clancey, of the Toronto Transportation Commission, who assisted with the exhibits, a fountain pen; and Miss A. Leitch, stenographer, an ever-sharp pencil.

Luncheons, Dinners, etc.

Luncheons for the members, associate members, and guests, were held at the Sunnyside Pavilion, on the lake front, on June 27, 28 and 29, Mr. Couzens, presiding. On June 27, in Major Burpee's unavoidable absence, he read the latter's presidential address, which is given in full farther on in this issue. On June 28, City Controller Hiltz, in the absence of the Mayor from the city, conveyed a message of welcome. On June 29, Sir John M. Gibson, director Dominion Power & Transmission Co., gave a most interesting address, in which he dealt with that company's pioneer work, in the development of electric energy at Decew Falls.

The annual dinner at the King Edward Hotel, which was attended by over 200, was a most successful and enjoyable function. Mr. Couzens, who presided, proposed the toast of the King, the other toasts being as follows:—Canada, proposed by Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., responded to by Geo. Wright, one of the members of the Toronto Transportation Commission; Our Industry, proposed by G. Gordon Gale, Vice President and General Manager, Hull Electric Co., responded to by C. B. King, Manager, London St. Ry.; Our Guests, proposed by F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario, responded to by M. Buck, Associate Editor, Electric Railway Journal; The Ladies, proposed by Hugh Millar, President, Lyman Tube and Supply Co., responded to by Don M. Campbell; and the Technical Press, proposed by E. P. Coleman, General Manager, Dominion Power and Transmission Co., responded to by Acton Burrows, Proprietor, Canadian Railway

and Marine World.

The ladies accompanying the members and associate members, in addition to attending the luncheon and dinner, were, on June 28, given a boat trip to the Royal Canadian Yacht Club, where they had tea; and on June 30, an automobile drive round the city, with afternoon tea at the Old Mill, on the Humber River.

President Burpee's Address.

In the unavoidable absence of the President, Major Burpee, the address which he had prepared was read by the Vice President, H. H. Couzens, as follows: It is a great disappointment to me that labor troubles on our system in Ottawa will prevent me from attending our Association's nineteenth annual meeting. I regarded my election to the office of President last year, at Quebec, as a very great honor, and have endeavored during the year to follow in the able footsteps of my predecessors. The Quebec convention was a great success, which was largely due to the splendid exhibit of equipment and supplies made by our



D. E. Blair, B.Sc.
Superintendent of Rolling Stock, Montreal Tramways Co., and Vice President, Canadian Electric Railways Association.

associate members. I understand that they have again prepared an exhibition that, if possible, is even better than their last year's one. I am sure you will all be well repaid for the time you spend in the exhibition. Those of us who are not directly connected with one of the plant departments of our business get accustomed to regarding a street railway as a complete system designed to carry people from one place to another. It is well to have the opportunities afforded by these exhibitions to appreciate that there are a thousand and one minute details and intricate adjustments in our business, as marvelous as those of the human body, on which the health of the whole system depends. We talk of putting heart into our business. Don't let us forget that it has bones and sinews too.

Association's History.—It may be interesting to some of you whose connec-

tion with the industry has been more recent than that of us old boys, to learn when and how the Canadian Electric Railway Association started. It was established in 1904, nineteen years ago, at a meeting of street railway men held in Montreal. W. G. Ross, then Managing Director of the Montreal St. Ry., presided. Others present at that meeting were Duncan McDonald, then Manager, and Patrick Dubee, Secretary, of the same company; W. H. Moore, of the Toronto Railway Co.; Lt. Col. H. H. McLean, director, St. John Ry., New Brunswick; E. A. Evans, then General Manager, Quebec Railway, Light & Power Co.; Allan Royce, of the Toronto Suburban Ry.; and C. E. A. Carr, then Manager, London St. Ry. There were also present D. E. Blair, R. M. Hannaford, and H. E. Smith, who, with Mr. Dubee, are still with the Montreal company. And last, but not by any means least, Acton Burrows, whose very name is redolent of efficiency and research. Mr. Burrows has never missed one of our meetings, and has done more than any other single man to make our Association the important body that it is today. His widely read and valuable journal, the Canadian Railway and Marine World, has been our official organ from the start. Mr. Ross was the first President and Mr. Royce Honorary Secretary-Treasurer. Mr. Royce occupied the latter office till 1907, when Mr. Burrows succeeded him, and remained in office till 1920, when we most reluctantly were obliged by him to accept his resignation. Fortunately we have since had the benefit of his wide experience and mature advice as a member of our honorary council.

The Canadian electric railway industry, according to the last published Government report, operates between 5,000 and 6,000 cars, on nearly 2,500 miles of track, and the total investment reaches to about \$200,000,000. Even if the Association's work had not justified its existence in the past, and I feel sure it has, it is hard to conceive of such a huge industry functioning properly without some central organization such as this. Our activities are many and cover a wide field. We collect data, prepare reports, and undertake anything that will be generally beneficial to any, or all, of the street railways and supply houses that form our membership. Perhaps not the least valuable of our work is to watch for, and, as far as possible influence, or should I say, improve, legislation passing through the Dominion and provincial houses. At each capital we have a legislative representative. Every year sees some enlargement in the scope of the Association's work, and an added value to membership in it. It seems to me most important that the Association should include every electric railway in Canada. We have never yet attained 100% membership, but I earnestly hope that my successor will have that achievement to his credit. Occasionally some road changes hands, and the new management, not being familiar with our work, and being imbued with a spirit of economy, will not approve of the modest yearly fee. This seems unfair to the rest of us. We build the dams; they come in for a share of the power. In any case, most of the work done by the Association is of general benefit to every Canadian electric railway, whether it is a member or not. Indeed, many individual pieces of work accomplished by the Association in the

past have been worth many times the annual charge for membership. In these days, when those we deal with, and those who work for us, are so highly organized it would be suicidal for the electric railways themselves not to be prepared to present a united front against ill-considered legislation, popular misunderstanding of our difficulties, and various other ills that co-operation alone can help to cure. Let us all do what we can to make the C. E. R. A. represent every street railway, publicly or privately owned, in the Dominion. This is probably more important today than ever before. We are passing through a critical period in the industry's history. New problems are constantly presenting themselves. New and untried methods of transportation are attempting to compete with us. They fail, as a rule, but the experiment is usually at our expense. This Association can be of immense value to Canadian electric railways, but it needs the hearty co-operation of each and every member. Questionnaires from the Association's office should be answered promptly and the fullest information given. Don't forget that some member has sent in an enquiry and is anxiously waiting for just the data you may think it unnecessary to supply. You may be the next seeker after light. You all know the old doggerel: "The man who has plenty of peanuts, and giveth his neighbor none, Shan't have any of my peanuts When his peanuts are done."

Public and Private Ownership.—During the past decade in Canada there has been a pronounced movement towards public ownership of electric railways. For a time the operators of the privately owned and publicly owned systems were inclined to hold aloof from each other. I am glad that our Association is big enough and broad enough to include all the electric railways of Canada, and that quite a number of the publicly owned railways have become members. The Toronto Transportation Commission, which, under the management of the Vice President of this Association, H. H. Couzens, controls one of the largest Canadian systems, is giving a splendid example of what can be done under public ownership, and is rapidly producing here one of the model traction systems on the North American continent. Whatever our personal views may be on public ownership, and I suppose we are entitled to them, we are all electric railway operators having to deal with the same problems, whether under the control or under the regulation of municipal governments, and I am satisfied this Association has become a much stronger and better balanced organization since the publicly owned electric railways have joined it. There are still a number of municipally owned systems in western Canada that are not members. This seems to be due to the fact that the councils in the cities where they are located do not yet appreciate the value of the Association's work, as representing a vital industry and not any special method of administration, and refuse to sanction the payment of the annual fee, in ignorance of the many advantages that their management would derive from meeting and co-operating with other operators in the same industry. There should be some way of overcoming this obstacle, and it is to be hoped that the new executive will find it. We are all laborers in the same field, trying to give our patrons the best service we can. The only difference between the two is that one has to pay

dividends and the other interest. We use the same kind of current and need the same kind of currency.

Labor and Working Conditions.—During the war period, the street railway industry generally was harder hit than most others, because of the reluctance of the public to agree to an adjustment of fares to meet the rapidly rising cost of operation. I have heard people say that the electric railway industry fell down badly under the conditions imposed by the war. Nothing, to my mind, is farther from the truth. No other industry came through with such a small increase in the selling price of its product. And yet we had to meet relatively the same increases in the cost of labor and materials as others did. During that period the wages paid our employes jumped by leaps and bounds, reaching a peak in 1920, when the increase for most Cana-

certain factors that must be kept in mind, by both employer and employe, in dealing with wages and working conditions, and these apply to every electric railway, whether publicly or privately owned. The public that we serve is entitled to good service. And by good service I do not mean luxurious service, but service that is safe, reasonably comfortable, and rapid. The street railway is becoming more and more the vehicle of the average man—the man who cannot afford to own a motor car. In order to keep the fare low enough to induce the greatest amount of patronage from that class in the community, and still meet our obligations, we must resist demands for frills and non-essentials, and keep eternally on the trail of waste and extravagance in every department. The capital invested is entitled to, and should receive, a fair return; high enough to attract fresh capital when required for expansion and improvements. Good service cannot be supplied by a starving, or bankrupt, system. It is only by persistent publicity that the public can be brought to a realization of this truth so elementary to us. The employes should receive fair wages, and be provided with good working conditions. But the employe must remember he is working in an industry, the success of which depends on the marketing of transportation at a low price, and that there must be definite limits to what he can receive for his labor, and the degree of comfort his working conditions can afford. I believe it is firmly fixed in the minds of most officials of street railway labor unions that all that is necessary to do to meet any demands they make is to raise the fare. Does it ever occur to them that an unduly increased fare will result in such a decrease in car riding that the final result must be disaster to both employes and employer? This is especially the case in smaller cities, where the average haul is short, and there are few transients. Can we not look forward to a time when all three parties will accept as fundamental the right of the public to good service; the right of capital to a fair return; the right of the employes to a fair wage; and recognize all of them as dependent on the controlling factor that the rate of fare which is to provide the revenue to pay for these things must be low, or people will find a more attractive means of getting about. While no one believes more firmly than I do that the good will of our employes, and their hearty co-operation in our efforts to produce good service, rank only second to the good will of the public, and that a discontented staff will nullify anything we may try to do in that direction, there is a limit to what we can do for them. That limit is set by the rate of fare, which must be equated to the right of the public to good service, and the right of the capital invested in the plant to a fair return. After all, isn't the value to the community of the work performed by each class of employes the gauge that should determine their remuneration? A man who hires as a motorman, or conductor, should be made to realize that the job can never give him more than a modest income. If he wants something more than that, he should prepare himself for some other line of work that demands some special knowledge or skill, which takes more than a few days of training to acquire. One would think I was addressing a board of conciliation. Well, Shakespeare said something about the dyer's hand becoming subdued to

Canadian Electric Railway Association.

Honorary President: Major General Sir John M. Gibson, K.C.M.G., M.A., LL.B., LL.D., K.C., director, Dominion Power & Transmission Co.

Honorary Vice President: Acton Burrows, Proprietor, Canadian Railway and Marine World.

Honorary Advisory Council: Thos. Ahearn, President, Ottawa Electric Ry.; F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario; Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.; Geo. Kidd, President, British Columbia Electric Ry.

President: H. H. Couzens, General Manager, Toronto Transportation Commission.

Vice President: D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.

Treasurer: E. P. Coleman, General Manager, Dominion Power & Transmission Co.

Executive Committee: The President, the Vice President, the immediate Past President (Major F. D. Burpee, Manager and director, Ottawa Electric Ry.), the Treasurer, and G. Gordon Gale, Vice President and General Manager, Hull Electric Co.; W. S. Hart, Treasurer, Quebec Railway, Light, Heat & Power Co., and Vice President, Three Rivers Traction Co.; D. W. Houston, Superintendent, Regina Municipal Ry.; C. B. King, Manager, London Street Ry.; M. W. Kirkwood, General Manager, Grand River Ry. and Lake Erie & Northern Ry.; H. K. McLean, Superintendent of Transportation, New Brunswick Power Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; W. R. Robertson, General Superintendent of Railways, Hydro Electric Power Commission of Ontario; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Superintendent, Hydro Electric Rys., Toronto & York District.

Auditor: Lt. Col. G. C. Royce.
Secretary: Eustace Smith, Jr., Executive Assistant, Toronto Transportation Commission, 35 Yonge St., Toronto.

Official Organ: Canadian Railway and Marine World, Toronto!

dian roads was 100% higher than in 1913. Since then there have been some reductions, but not at all in proportion to the drop in the cost of living. Reduction in wages has been consistently opposed by organized labor, who constantly strive, as is natural, for more money, and less and easier work. While probably most of us feel that a return to pre-war wages and conditions is not desirable, there must be an end to the steadily increasing operating costs, if we are to be successful as public utilities, and continue to sell our product—transportation—at a price that will appeal to the greatest number of people. When car riding becomes a luxury that cannot be freely indulged in by people of small incomes, our death knell will have sounded, and we will pass on, to be replaced by some other and more popular means of transportation for the masses. There are

what he works in. Do you know that we have had six boards in Ottawa since 1918, and many before that year. The Ottawa Electric Ry. would be a good training school for delegates to the League of Nations. I would like to start a discussion on the Industrial Disputes Act, but this is hardly the place for it.

Everything indicates a most successful meeting. The exhibits are excellent, the morning meetings should be most interesting, the entertainment features will be enjoyed by all of us, and we will have the great advantage of meeting and talking shop with our fellow workers in the traction field. A particular advantage this meeting affords us is the opportunity of looking over the tremendous work done in less than two years by the Toronto Transportation Commission. As President of the Association I can regard myself as merely a conductor, whose duty it is to call out "All aboard." The success of the meeting depends on your willingness to move up to the front, and enter wholeheartedly into the many interesting functions provided for us. I feel sure, years hence, the Toronto meeting will stand out in our memories as one of the best in the Association's history.

Executive Committee Meeting.

The newly elected executive committee met in the Toronto Transportation Commission's board room on July 20, those present being H. H. Couzens, President, in the chair, D. E. Blair, Vice President; E. P. Coleman, Treasurer; Major F. D. Burpee, G. Gordon Gale, W. R. Robertson, and C. L. Wilson. Following up the suggestions made at the Association's annual meeting, it was decided to ascertain whether the Canadian Electric Association would be willing to hold its next annual meeting at the same place, and during the same week, as the C.E.R.A. the two associations to meet on different days, but one exhibit to be made by the manufacturers for both meetings. The following committee were appointed.

Legislation:—Dominion, Major F. D. Burpee, Manager, Ottawa Electric Ry.; Nova Scotia, W. L. Weston, Manager, Nova Scotia Tramways & Power Co.; New Brunswick, J. A. Olive, New Brunswick Power Co.; Quebec, W. J. Lynch, General Manager Quebec Railway, Light, Heat and Power Co.; Ontario, C. L. Wilson, Superintendent, Hydro Electric Railways Toronto & York District; Manitoba, E. Anderson, K.C., Solicitor, Winnipeg, Electric Ry.; Saskatchewan, D. W. Houston, Superintendent, Regina Municipal Ry.; Alberta, M. Freeman, Commissioner, Lethbridge Municipal Railway; British Columbia, V. Laursen, Solicitor, British Columbia Electric Ry.

Motor Buses and Trucks:—Major F. D. Burpee, Manager, Ottawa Electric Ry., Chairman.

Safety:—W. R. Robertson, General Superintendent of Railways, Hydro Electric Power Commission of Ontario, chairman; W. H. Darracott, chief clerk to Manager, Winnipeg Electric Ry.; W. R. McRae, Superintendent of Rolling Stock, and shops, Toronto Transportation Commission; R. M. Reade, Superintendent, City Division, Quebec Ry., Light & Power Co.; J. F. H. Wyse, General Manager, Ontario Safety League.

Standards:—D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., chairman; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; G. Gordon Gale, Vice President & General Manager, Hull Electric

Co.; H. T. Gibbs, Sales Engineer, Canadian Westinghouse Co.; W. G. Gordon, Traction Engineer, Canadian General Electric Co.; Hugh Millar, President, Lyman Tube & Supply Co.; W. G. Murrin, Vice President, British Columbia Electric Ry.

Valuation, Maintenance, and Depreciation of Street Railway Assets:—H. E. Weyman, Manager, Levis County Ry., chairman; W. G. Hewson, Railway Engineer, Hydro Electric Power Commission of Ontario; F. S. Livingstone, Traffic Manager, Hydro Electric Railways, Toronto & York District; L. Tait, Secretary-Treasurer, London St. Ry.; G. E. Waller, General Superintendent of Railways, Dominion Power & Transmission Co.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	May 1923	May 1922	11 mos. to May 31, 1923	11 mos. to May 31, 1922
Gross	\$858,965	\$827,701	\$9,542,173	\$9,417,543
Expenses	637,894	623,318	6,717,361	6,826,328
Net	221,071	204,383	2,824,812	2,591,215

Cape Breton Electric Co.—

	Apr. 1923	Apr. 1922	4 mos. to Apr. 30, 1923	4 mos. to Apr. 30, 1922
Gross	\$55,116	\$50,155	\$224,667	\$193,519
Expenses	49,343	41,360	214,113	206,136
Net	5,773	8,795	10,554	*12,617
Interest	5,608	5,515	22,683	22,399
Balance	165	3,280	*12,129	*35,016

*Deficits.

Edmonton Radial Ry.—A press report states that the operating deficit for 1922 was \$5,476, the lowest on record. There was an increase in gross revenue, over 1921, of \$7,053, and a decrease of \$35,907 in operating expenses. The expenses per car mile were 25c, against 26.9c in 1921.

The Montreal Tramways and Power Co. is a holding company for the Montreal Tramways Co., and other allied companies controlled by the E. A. Robert interests. The annual report for the year ended Nov. 30, 1922, the first issued to the public, showed assets of \$28,799,071; and the profit and loss account showed an income of \$672,514 of which \$526,529 was paid out in interest. After the meeting of expenses and other disbursements \$98,274 was carried forward. The publication of the report attracted considerable attention and there was a good deal of hunting for proxies for an extraordinary general meeting of shareholders held July 3, called on the requisition of certain shareholders. E. A. Robert, President was in the chair, and the administration of the company's affairs was criticized by L. M. Fortier and A. E. Beauvais, and after discussion, the President moved and W. A. Finlay seconded a motion for the appointment of a special committee of five to enquire into the company's affairs. The names of the committee suggested were not acceptable to the critics of the management, and A. W. Fournier and E. Girard moved for a committee of three to make a general enquiry and to present a report within two months. Scrutineers were appointed to take the vote, and the meeting was adjourned to July 5 when it was reported that the amendment had been defeated by 75,851 to 56,572. The original motion to appoint C. H. Branchaud, A. Hudson, L. Fortier, C. J. Hodgson and A. W. Stevenson to make an enquiry was then carried. One of the members of the committee, C. H. Branchaud subsequently resigned. On July 12, a requisition, was drawn up, for presentation to the directors calling attention to this fact, and to several matters arising in connection with the meeting of July 3, and asking for the holding of an extraordinary general meeting for certain specific purposes, which were set out.

Port Arthur Municipal Ry.—A report presented to the Port Arthur Public Utilities Commission, shows a surplus in the operation of the municipal utilities for the calendar year 1922, of \$7,993.65, of which, the municipal railway was responsible for \$1,315.61.

Quebec Power Co.—The various proceedings in connection with the taking over of the Quebec Ry., Light, Heat & Power Co. by Shawinigan Water & Power Co. interests, which secured control recently, are being pushed forward. A number of meetings have been held, at which resolutions dealing with various phases of the matter were passed. As the result of these, among other things, the Public Service Corporation of Quebec has ceased to exist under that name, the new title being the Quebec Power Co., for which the Quebec Government has issued supplementary letters patent. The shareholders of this company met on June 27, when Julian C. Smith, President, explained that the company's capital is fixed at \$10,000,000, of which \$6,000,000 is to be common stock, and \$4,000,000 preferred stock, with a \$200,000 bond issue, to be issued in series as required. There is now issued \$1,600,000 of common stock, and \$1,400,000 of preferred stock. It is expected that the final arrangements for taking over the Quebec Ry., Light, Heat & Power Co. and bringing it into the Quebec Power Co.'s organization will be completed about the end of August, when the conditions on which the transfer took place will be made public.

Waterloo-Wellington Ry.—Following the defeat by Kitchener ratepayers, on May 30, of a bylaw to take over and rehabilitate this railway, from Kitchener to Bridgeport, Ont., there was some fear that the operation of the line would cease on June 30, but the line is being operated as usual by the company. It has been suggested that a new agreement may be negotiated, but in the meantime the Kitchener City Council has been asked to resubmit the bylaw to purchase the line and to provide funds for its reconstruction.

Windsor, Essex and Lake Shore Rapid Ry.—A press report states that negotiations are in progress for the purchase of this company's line by the Hydro Electric Power Commission of Ontario. The line extends from Windsor to Leamington, Ont., 36.17 miles, 1.13 of which is double track. Its gross earnings for 1921 were \$322,240, and operating expenses, \$253,952. After paying taxes, funded debt, etc., of \$57,969, the net income was \$10,317.

Winnipeg Electric Railway.—

	May 1923	May 1922	5 mos. to May 31, 1923	5 mos. to May 31, 1922
Gross	\$429,916	\$427,880	\$2,341,674	\$2,229,274
Expenses	301,587	293,680	1,613,734	1,238,388
Net	128,329	134,200	727,940	1,060,886
Fixed Surplus	50,128	56,717	374,042	740,715
Surplus	50,128	56,717	303,769	320,171

The decrease in surplus for May is due to a decrease in gross receipts from the railway and gas utilities, owing to a reduction in daily receipts from the railway and in an apparent trend of economy in the use of gas, on account of existing general conditions.

Electric Railway Wages and Working Conditions.

Guelph Radial Ry.—The Hydro Electric Power Commission of Ontario's Railway Department, which is operating this line for the City of Guelph, has agreed to extend for a year from July 1, the conductors' and motormen's wages and working conditions agreement heretofore in effect, under which the pay per hour is; 1st year, 41c; 2nd year, 43c; 3rd year and thereafter, 45c; overtime, over 9 hours, 20c an hour extra.

Hydro Electric Railways, Essex District.—The management has agreed to extend for another year the conductors' and motormen's wages and working conditions heretofore in effect. The pay per hour is; 1st 6 months, 45c; 2nd 6 months, 50c; thereafter, 55c. Overtime is paid for at 20c an hour additional, overtime commencing after the performance of 10 hours continuous duty.

Montreal Tramways Co.—As stated in Canadian Railway and Marine World for July, the company's conductors and motormen had decided to ask for increased wages, but no demand had then been addressed to the management. Subsequently the men requested an 8-hour day, with the same gross wages as at present, which it was stated would work out at a maximum rate of 65c an hour. The maximum rate of pay to July 31, 1921, was 55c, which the company gave notice to reduce by 20%. After negotiations the reduction was fixed by the company at 12½%, and a board of conciliation was appointed, the majority report of which held that the reduction was not unreasonable. Some further negotiations took place, but were finally dropped by the men, the rate of pay per hour from Aug., 1921, to the present time being 1st year, 39½c; 2nd year, 44c; 3rd year, 48c. A poll of the men was taken in July as to whether there should be a strike in the event of negotiations failing, when 2500 voted in the affirmative and 300 the negative. Lt. Col. Hutcheson, General Manager, and the men's representatives have held several meetings to discuss wages and other matters, and we were officially advised July 18, that negotiations were being continued. The company not having receded from its position to adhere to the present rates, while the men are said not to favor an application for the appointment of a board of conciliation.

It is stated that the wages have been increased 100% since 1913, and are now 65% higher than they were in 1918; while the living for a family of five according to the Labor Department's figures is only 6.52% higher than in April, 1918; consequently there is no justification for demands for increased wages. It is also stated that many of the motormen and conductors are earning as high as \$200 a month, this being in cases where considerable overtime is worked, but \$130 a month is quite common while with a little overtime, requiring little or no exertion, \$150 can be made.

A press report of July 19 stated that immediately after receiving their pay, the company's laborers and trackmen laid down their tools and left work, demanding an increase of wages from the present rate of 30c to 45c an hour. This action is reported to have been as great a surprise to the union's officers as it was to the management. The union officers advised the men to go back to work and let them negotiate with the management.

Ottawa Electric Ry.—When Canadian Railway and Marine World for July went to press, negotiations were going on between the company and its employees regarding wages and working conditions. A board of conciliation by a majority report, favored the adoption of an 8-hour day, on a platform time basis, with the following rates of pay per hour:—1st year, 50c; 2nd year, 52c; 3rd year and thereafter, 54c; these rates to be retroactive to May 1. The company's representative on the board, G. D. Kelley, presented a minority report which recommended the continuance of the 1922 rates, with some adjustment of the spread of hours. The men accepted the majority report, but the company absolutely declined to do so. The men received the authorization of the International Union to strike, and action was postponed to June 25. In the meantime a bulletin letter from Major F. D. Burpee, Manager, sent to the men, was published advising them that the spread of hours had been considered and that new run guides had been prepared, effective July 1, giving an average platform time of 8¾ hours, with an average spread of 11¾ hours on week days; and an average platform time of 7¾ hours with an average spread of 10½ hours on Sundays. This was not acceptable to the men, and the Minister of Labor, who intervened to prevent a strike, could not get the parties together, although he had interviews with Major Burpee and the men's representatives. Magnus Sinclair, one of the International Union officers, arrived in the city, and endeavored to secure acceptance of the majority award, as a whole, or as to the establishment of an 8-hour day, or as to an increase in wages, but failed, and as a result a final conference was held on July 3, when it was arranged that the union officials would recommend the acceptance of the following:—"It is agreed by the parties hereto that the agreement signed by them on Sept. 17, 1922, be continued in effect and be binding upon them to May 1, 1924, and thereafter from year to year. If either party to this agreement desires a change in any of its provisions, such party shall notify the other in writing not less than 30 days prior to May 1 in each year. On such notification being received the change desired shall be open to discussion." The men met on July 4 to consider this, when Magnus Sinclair recommended its acceptance. The men voted in favor of it by 279 to 91, and an agreement was signed accordingly. The 1922 agreement, which has been renewed provided for the following pay per hour for conductors and motormen:— First year, 43c; second year, 45c; third year, 46c; fourth year and thereafter, 48c.

Major Burpee then issued the following letter to the employees:—"On July 6 an agreement was signed between Division 279 and the company, which renews last year's agreement until May 1st 1924, and thereafter from year to year. If either party desires a change it must notify the other in writing not less than 30 days prior to the 1st of May in each year, when the changes desired shall be open for discussion. In an interview prior to a definite settlement of the dispute, on account of which Division 279 applied for a board of conciliation this year, the committee representing that organization was informed that the new run guides which went into effect

July 15 and 16 would be a standard form of run guide governing the future operation of our car service department. This does not mean that the service will not be changed from time to time, to meet the varying amount of traffic we are called upon to handle, but that the general plan of relief adopted in these guides will be continued hereafter. The other items discussed during the negotiations, heaters in the vestibules of the cars, conductors' winter coats, etc., will have the management's thoughtful consideration, and every effort will be made to have them satisfactorily arranged. In fact it has always been the company's policy to do whatever it can at any time to adjust reasonable complaints and to make things as comfortable as may be for its employees and its customers. So much so is this that I have often wondered why it seems to have been necessary in the past to apply each year for a board of conciliation to deal with matters, most of which can be better handled by friendly meetings between the employees and the company. Ever since the Industrial Disputes Act became a Dominion law in 1907, we have had a constant series of boards appointed under it to deal with disputes between the company and its employees, in spite of the fact that on the whole there has been the best of feeling on both sides. The Industrial Disputes Act was intended to be used as a last resort, when disputes between business concerns and their employees became impossible of settlement in any other way, in order to try and prevent strikes and lockouts, and the consequent inconvenience to the public and serious loss to employers and employees. In our case it seems as though conciliation boards were resorted to before the full advantages of friendly negotiations were exhausted. When one considers the composition of the boards of conciliation, usually three legal gentlemen with no practical knowledge or financial interest in the matter they have to deal with, this constant appeal to such a tribunal seems foolish and unnecessary. Disputes such as have arisen in the past should be much easier settled by private negotiations, with avoidance of a great deal of friction and hard feelings. This is only possible though if each party is able to put himself in the other fellow's place, and consider his side of the question in conjunction with his own. While it does not always appear so when these questions are being argued, there is a third party to all disputes between a public utility and its employees—the public. It is quite as much concerned in these disputes as the company and its employees, and its interest deserves quite as much consideration.

"What are the rights of these three interested parties? The public expect, and are entitled to, safe, rapid and comfortable service. The employees are entitled to fair wages, and as good working conditions as can be provided. The employer is entitled to a reasonable return on the capital invested in the plant. The company's revenue must be sufficient also to keep the plant in a good state of repair, provide for the replacement of wasting equipment, and meet its obligation to the public and the employees. A street railway cannot be a success unless the fares charged the public are low enough to attract business from everyone in the community.

The wealthy man, or the man who enjoys a fairly good income, generally manages sooner or later to own an automobile. As soon as he does so, he ceases to be a regular patron of the street railway, and will only ride on our cars when his automobile is out of business. This means that street railways must cater to the man who cannot afford to own an automobile. The lower the fare, the more successful and popular the street railway. Of late years the competition from automobiles and motor buses is being severely felt. The bus seems to appeal to the modern human being's desire to ride in an automobile of some kind, and even where the fare charged is higher than that of the street railway, it has won a certain measure of success. This success in many cases is only temporary because it has been proved that transportation by electric street car is the cheapest that can be provided, and will continue to be so until some more economical form of motive power than gasoline and some less expensive material for tires than rubber can be discovered. In the meantime the opposition from motor buses, which pay practically nothing for the right to use the streets and which do more damage to the pavement than street cars, while taking up more space for each passenger carried, is cutting seriously into the business of electric railways. The increase in the use of private automobiles offers greater competition than the motor buses that are openly in the business of public carriers. Most owners of automobiles pick up every day, and carry from place to place, a few friends who would otherwise take the street cars and pay fares. There is nothing we can do to offset this particular form of competition. It is a condition that we have to face and make the best of.

"Of the three interested parties, our customers, the public, must be considered first. Unless our service is good enough, and cheap enough, to attract their patronage we will cease to exist, and both the employer and the employees will have to turn their attention to some other line of work. In order to keep the fare at a popular rate, the good service the public expects and is entitled to must be plain and inexpensive. It also must be convenient, safe and comfortable, and enable them to get from one place to another without undue loss of time. Let us look for a moment at the employees' side. A man who engages as a conductor or motorman cannot expect to earn more than a plain living from it. If he is ambitious and desires a better living than can be obtained from such an occupation he must prepare himself by study and hard work for something that will make his services command a higher rate of pay. The wages he receives for his work as a conductor or motorman should be sufficient however to provide him and his family with a decent living. The conditions which govern his work should be such as not to be injurious to his health, and to provide him with a reasonable degree of comfort. If he demands and receives more than this, the other two interested parties, his employer and the public, must go short. If we go short in giving the public what they expect, our business will fall away, and street railways will eventually be replaced by some more satisfactory means of getting about. This brings us to the right of the employer to a fair return on the invested capital. It is a well known fact in this industry that unless the street

railway, whether it is publicly or privately owned, is financially sound it cannot provide the service the public expects, and which is necessary to the successful continuation of the business. If the employer fails to receive a fair return on the invested capital it cannot obtain the funds necessary for extensions, or for new equipment as the plant wears out. It must gradually go down hill and, as it does, the service to the public ceases to be good and its patronage declines. It is evident then that these three factors, the rights of the public, the employees and the employer—must be kept in mind in the settlement of any dispute arising in the street railway industry. In the presentation of the case for the employees before boards of conciliation it sometimes appears as though all that is necessary to grant the demands is to increase the fare. This plan has been adopted in some places, with the result that the business has fallen off so much that the total revenue after the increased fares were put into effect has been very little more than what was received before. It is possible, with the consent of the public, through city governments, to increase rates, but nothing can compel people to ride if they think the fare is beyond their means. The cities where street railways are most successful, and the rights of the three interested parties are nearest being satisfied, are those where the riding habit of the customers of the street railway is highest. This means that the service must be good, and sold to the public at a price that induces them to ride frequently, and not just when they are compelled to.

"Years ago, when the street railway was a baby industry the 5c piece, perhaps because it was the lowest unit of our coinage other than the copper cent, was adopted as a standard fare. It was certainly the most convenient amount to charge for the service provided. In those days the cost of living was low, and those who risked their money in the industry, which was then regarded more as a speculation than an investment, did very well. Those days are past, and it is not likely that they will ever return. The public is still inclined to regard the 5c piece as the proper fare for a street car trip, although the costs of operation have doubled and trebled. In the course of years the ownership in street railways has been constantly changing hands. It is not possible now to dig into the past, and expect those who originally risked their funds in the industry to give up the profits that they earned in the early years, nor would it be right to expect them to do so. They were the pioneers who took the chance and won, and they are entitled to what they got. If on the other hand they had lost, they would not have expected, or found, anyone to step forward and reimburse them.

"To satisfy today the rights of the three parties referred to requires the most careful management and full consideration from each party of the rights of the other two. The public cannot expect to find a car always on hand, the moment it is required by each intending passenger. It cannot expect parlor car fittings. It cannot demand a taxi service for a street railway fare. The employee cannot hope for more than a plain living from his employment. The employer can no longer regard the street railway business as an opportunity to make a fortune. The success of this business depends on selling transportation at as

cheap a rate as possible. The three interested parties all have rights, but each must consider the other two in the settlement of a dispute affecting the operations of a street railway. I earnestly hope that in the future, when disputes arise, those who are delegated to settle them will be broad enough to keep these things in mind and be prepared to try to reach an adjustment that will be fair to all three."

Toronto Eastern Railway Construction and Associated Developments.

Canadian Railway and Marine World for July stated that the Canadian National Rys. management was preparing to start work on the completion of the Toronto Eastern Ry. and to extend it, at the west end, to a junction with the C.N.R. Orono Subdivision line to take it into Toronto, so as to provide a radial electric railway service east from that city. We are officially advised that the finishing of the T.E.R. construction is to be gone ahead with immediately, and that S. B. Wass, Terminal Engineer, who was in charge of the Neebing yard construction near Fort William, Ont., has been transferred to Oshawa, Ont., and will be in charge of the T.E.R. work. H. L. Vercoe, formerly in the Canadian Northern Ry's engineering department has been engaged as special engineer for Canadian National electric lines. J. B. Heron, formerly in Canadian Northern Ry. service on location and construction between Ottawa and Capreol, Ont., has been appointed resident engineer for the Toronto Eastern work, at Oshawa, and will report to Mr. Wass.

A portion of the T.E.R. was built by Mackenzie, Mann & Co., several years ago, from Bowmanville to Whitby, about 15 miles, except the overhead electrical work, none of which was erected on any part of the line, i.e., grading, culverts, trestles, track laying and ballasting were done. From Whitby to the west line of Pickering Township, grading, culverts, and trestles were done, but no track laying and ballasting. No part of the road has been operated. The line was projected as an electric one and was intended to be a feeder from Bowmanville, Oshawa, Whitby, Pickering and the intervening country, for the Canadian Northern Ottawa-Toronto line. It was to connect with the Canadian Northern at Cherrywood, 22.5 miles east of Toronto union station. This plan was, however, changed with the intention of building from Bowmanville to connect with the Toronto & York Radial Ry., Scarborough Division, at West Hill, its present eastern terminus, which would have necessitated changing the gauge of the latter road, which is 4 ft. 10 1/4 in. These plans advanced to the stage where the Board of Railway Commissioners' approval was secured, but were then displaced by another plan by which the Toronto Eastern line would extend from Bowmanville to connect with the Canadian Northern Ottawa-Toronto line north and east of Scarborough, a few miles east of Toronto. The Board of Railway Commissioners' approval was not secured for this plan, and when war broke out, work on the line stopped, with construction completed only so far as stated above. The project's history from that time, including the Hydro Electric Power Commission of Ontario's attempt to get control of it, and the municipalities' successful attempt to get the C.N.R. management interested in its

completion, was given in Canadian Railway and Marine World for July, pg. 355.

The intention is to complete the T.E.R. between Bowmanville and Pickering, to build a connection between Bowmanville and the Canadian National Rys., Orono Subdivision, and electrify the latter from the connecting point east to Cobourg, 78.3 miles from Toronto union station; to build a connection between Pickering and the Orono Subdivision line east of Toronto and to operate an electric service from Cobourg to a Toronto terminal where the C. N. R. Orono Subdivision line crosses Queen St., near the Don River. Details are not yet available as to where the connecting links from Bowmanville and Pickering will join the Orono Subdivision. The first work will be to put the previously completed portion of the T.E.R. between Bowmanville and Whitby in standard condition, and to complete the portion between Pickering and Whitby, after which the connecting lines will be gone on with. Preparations for completing the T.E.R. part of the work are being gone ahead with, under Mr. Wass' direction. We are officially advised that the Senate's recent action in giving a six months hoist to the bill to provide the C.N.R. management with some \$28,000,000 for branch lines construction will not interfere with this work, as funds were provided by a previous appropriation.

Associated with this development will be other work designed to provide a complete electrified system for radial service east and west of Toronto. While the plans for this are not yet completed, they are well advanced, and provide for the construction of a connecting link just north and west of Toronto, to connect the Toronto Suburban Ry., which runs from Toronto to Guelph, to the old G.T.R. Belt Line Railway, which will be electrified to provide a connection with the eastern electrified line at a point north of the Don River terminal. A new terminal will be necessary at the Don River and Queen St. Connections with the Toronto Transportation Commission's lines will be furnished at Bloor St. viaduct, where elevators to take passengers from the track level to the street level will be necessary; at Yonge St., where the belt line crosses it, and at Weston Road.

The Calgary, Alta., Municipal Ry. officials complained to the police recently that men patronizing the Ogden line were in the habit of rushing the back end of the one man cars, forcing the door and so securing free rides. The police arrested one man caught in the act, who was fined \$13.50, including costs, by the police magistrate.

One of the Nova Scotia Tramways and Power Co's one man cars caught fire from a defective fuse, at the corner of Buckingham and Granville Streets, Halifax, N.S., July 3. The passengers got out without mishap; and the fire was extinguished with but little damage to the car; but traffic was held up for 30 minutes.

Montreal Tramways Co. is preparing a map showing the area served by its lines, and all the routes, together with a series of numbers which will enable visitors and others to find the car they want readily. The system is expected to be put in operation on all lines by the end of the summer.

London St. Ry. put into operation on July 1, the first of the one man, p.a.y.e. single end, double door, safety cars, described in Canadian Railway and Marine World for January, pg. 35.

The Toronto Transportation Commission's Activities.

Loop Construction Protested.—The Commission had planned the construction of a loop at Lansdowne Ave., Bloor St. and Wade Ave., in the western part of the city, upon which to turn the cars on the Bloor St. run, one of the most important east and west runs. They are now turned on a Y at Lansdowne Ave. and Bloor St. Upon the plans for a loop becoming known, residents in the area affected took steps to have the construction prevented, on the ground that it would mean two extra crossings of sidewalks by the car tracks, and also would be liable to postpone the removal of several steam railway level crossings in the vicinity. Ward 6 Ratepayers' Association, the Bloor and Lansdowne Business Men's Association and Ward 6 Transportation Committee met on July 8 and sent a deputation to the city council to request that the construction of the loop be prevented, which the council acceded to. It is possible that the Commission may try to get the council to change its decision, as it is stated that the citizens' idea that the loop construction would postpone grade separation is entirely erroneous.

Car Deliveries.—At July 18 the Ottawa Car Manufacturing Co. had delivered 24 motor cars out of an order for 50, and Canadian Car & Foundry Co. had delivered 20 out of an order for 60. All trailers ordered have been delivered, and delivery of the remaining motor cars is expected in the near future.

One-Man Cars.—Canadian Railway and Marine World for July gave particulars of the hearing before the Ontario Railway and Municipal Board of the Commission's application for permission to operate double truck cars with a one-man crew, when the Board directed that a complete trial be made. This is now being done, 13 double truck cars being in one-man operation on the Church St. route. These are not the new motor cars which are convertible for one-man operation, as described in a preceding issue of Canadian Railway and Marine World, but are some taken over with the Toronto Civic Ry., which have been equipped with safety control and on which some changes were made to fit them for one-man operation, chiefly in regard to the doors and door operating mechanism.

The general repair shops being built by the Commission at Bathurst St. and Davenport Road, described in Canadian Railway and Marine World for March, are nearing completion. It is expected that the installation of machinery will be begun in September, and that the shop will be ready for operation in the fall.

Conversion of Old Double Truck Cars.—About two months ago the Commission converted a double truck p.a.y.e. car, 350 of which were taken over from the Toronto Ry. Co., into one for front entrance operation, with passengers paying their fare on exit if they elect to ride in the front section of the car, and on passing the conductor's farebox, near the middle of the car, if they wish to go through to the rear section. Experiments with the converted car proved it to be superior to the p.a.y.e. type, and it has been decided to convert all the 350 cars, with the exception of a number, not yet determined, which will be used for permanently connected two-car trains. Conversion of 30 of the p.a.y.e. cars is now under way.

Suit for Royalties.—A writ was issued at Osgoode Hall on June 22 by Peter Witt, Cleveland, Ohio, and C. S. Wright, Toronto, against the Commission, to recover \$2,500 and \$150 costs, on royalties of \$50 each on 50 motor cars delivered to the Commission by the Ottawa Car Mfg. Co. The Commission is protected by agreement with the Ottawa Car Mfg. Co., the latter having guaranteed to indemnify the Commission for all claims paid in respect of royalties, patents, etc. Messrs. Witt and Wright brought a similar action against the Canadian Brill Co., and recovered the amount then claimed.

Exhibition Park Service.—The Commission on July 1 introduced a special service extending the Dovercourt car route to the Canadian National Exhibition grounds. The extended service is given only between 2 and 10.30 p.m., and will be discontinued after the exhibition. The object is to enable citizens to utilize the park for picnic and other recreation.

Cross-Town Line.—The extension of the Dundas St. line across Yonge St., to afford a new east and west line across the city, was completed at the end of June, and its operation started on July 1.

Track Work.—At the time of writing, the Commission has the following track work under way: on north part of Avenue Road, rehabilitation of west track; on Queen St., between Church St. and the Don bridge, surfacing and repairs to joints; intersection installation at Front and Bay Sts. and at King St. and Wilson Ave.; installation of reverse curves on Roncesvalles Ave. at Harvard St.; completing installation of loop at Vincent St., near Bloor and Dundas Sts., on which King cars will turn; laying of additional track and special work in yard at new repair shops, Bathurst St. and Davenport Road; laying of track and special work at Roncesvalles Ave. car house yard.

Operation with two car train.—As stated in the paragraph about the conversion of 350 double truck p.a.y.e. cars taken over from the Toronto Ry. Co., some of them will be used for making permanently connected 2-car trains, the number to be converted to be determined after experiment. The first of this multiple unit equipment was turned out of the Commission's shops about the middle of July and is being operated on the Bathurst St. route. Both types of cars have been greatly altered. The leading car retains the back entrance, but has had an exit door placed adjacent to the entrance door, and the rear car has been equipped with front entrance and exit doors. The leading car's capacity is unchanged, accommodation for 37 passengers being provided, but the installation of a circular seat around the rear vestibule of the rear car, and the inclusion of 6 transverse seats, has increased the rear car's capacity to 50. The current is collected by the leading car, and the control is from that car, which retains all four motors, while the rear car retains 2 motors, driving through the leading truck. Door operation is so interlocked that power cannot be applied to start the train when doors are open on either car. Special features are an alternative exit at the forward end of the leading car and an emergency exit at the back of the rear car. The latter exit will normally be blocked by a section of the longitudinal seat which can be quickly removed in emergency. The p.a.y.e. fare collection system applies to both units.

Electric Railway Projects, Construction, Betterments, Etc. Toronto-Port Credit-Oakville Electric Railway Situation.

British Columbia Electric Ry.—We were advised recently that the rails for the second track on the Victoria Road line, Vancouver, were expected to be delivered by the end of July, when the work would be immediately gone on with. Its cost is estimated at \$61,000. (July, pg. 353.)

Edmonton Radial Ry.—A press report states that the electric railway tracks on the south approach to the high level bridge, Edmonton, Alta., are being taken up, and are being relaid on the west side of the approach and that the estimated cost is about \$5,000. (March, pg. 134.)

Hamilton St. Ry.—In connection with the reported early closing of the Hamilton and Dundas St. Ry., the question of the future service on Aberdeen Ave. in Hamilton has been raised. A suggestion has been made for the construction of a connection with the line running to Westdale, and the operation of a belt line service. Plans are reported to have been approved by Hamilton City Council for the extension of the Westdale line to near the Halfway house.

It is expected, a press report states, that the laying of a second track on Margaret St., will be started at an early date. (July, pg. 353.)

London St. Ry.—A press report, July 11, states that an Ontario Railway and Municipal Board engineer has been inspecting all the bridges crossed by the railway, and will report thereon shortly.

We are officially advised that it is proposed to rebuild the paved double track on Richmond St., from Dufferin to Oxford St., about 0.6 mile. (June, pg. 295.)

Montreal Tramways Co. applied to the Board of Railway Commissioners, June 28, for permission to cross the Canadian National Rys. and the C.P.R. tracks with its Atwater Ave. line, so as to enable connection to be made between the city and Point St. Charles. The City Engineer stated the benefits which would accrue to the citizens if the proposed line were built, and the Canadian National Rys. counsel submitted facts as to the traffic in and out of Bonaventure station, which had to cross Atwater Ave. The application was supported by a deputation from the Verdun City Council. Judgment was reserved for the Commissioners' traffic officers to investigate the matter, particularly with regard to interlocking systems. The extension of the Atwater Ave. line proposed is from St. James St. to Center Ave., and would involve crossing 4 main line double tracks of the Canadian National Rys. (G.T.R.) south of St. James St.; 2 industrial spur tracks, and some shunting tracks of the C.N.Rys.; the C.P.R. South Bank Branch, and some industrial tracks at the intersection of Atwater and Center Streets. (June, pg. 294.)

New Brunswick Power Co.—A press report states that the putting in of a new roadbed on the track on Dock and Mill streets, St. John, is practically completed, and that it is proposed to improve the curves at the junction of King and Charlotte Streets, and at Wall St., leading to City Road. (June, pg. 295.)

New Brunswick Power Co.—Tracks on Britain St., between Charlotte St., and Prince William St., St. John, and in some other parts of the city are being renewed. (June, pg. 295.)

Niagara, St. Catharines and Toronto

Ry.—The Board of Railway Commissioners has ordered the N.St.C. and T. Ry. to rebuild the bridge on Victoria St., Stamford, Ont. (July, pg. 352.)

Nipissing Central Ry.—The Dominion Parliament has extended for two years the time within which the company may build the several lines authorized by its incorporation act. A list of these lines was given in Canadian Railway and Marine World for Jan., pg. 36.

Nova Scotia Tramways and Power Co. is reported to have invited tenders for its share of the paving on Queenpool Rd. and South Park St., Halifax, N.S., on which its lines run. Paving blocks for this work were reported on July 12, to have been delivered.

Ottawa Electric Ry.—Hull, Que., City Council received a letter from Major Burpee, Manager, Ottawa Electric Ry., July 4, stating that the company could not make improvements in the service between Ottawa and Hull, unless it were given permission to build a loop line, which it was ready to do immediately upon approval. A petition by 1500 residents, approving of the loop was presented to the council the same evening. On July 6, Major Burpee attended a meeting of the council by request, when the matter was discussed, and it was decided to have an agreement drawn up which will permit the building of a loop crossing Bridge St. near the Eddy Co's offices and Eddy Park. Major Burpee explained that the company did not desire to have the loop line for the purpose of entering into competition in any way with the Hull Electric Co., but merely to operate larger cars and give a fast service. He said that the company would erect a waiting room for passengers at the corner of Eddy Park. (July, pg. 353.)

Quebec Ry., Light and Power Co.—We are officially advised that a diamond crossing and interlocking signal system is being installed at the Canadian National Rys. crossing on Beauport Road, Quebec, to connect the Mastai extension with the line on 10th St., Limoilou, Quebec, about 440 yards in all. (July, pg. 353.)

Winnipeg Electric Ry.—The city council special committee considering transportation matters has recommended the city to wipe out all old applications to the company for additional street railway services and to make an entirely new application for the extensions desired. (July, pg. 353.)

Winnipeg Electric Ry. applied to the Board of Railway Commissioners at Winnipeg, July 16, for permission to carry its Academy St. tracks across the Canadian National Rys and the Midland Ry. of Manitoba, west of the present track and on Lindsay St. Some of the commissioners and their officials visited the site of the proposed crossings and judgment was reserved pending filing of detailed plans by the company.

British Columbia Electric Ry.—The Board of Railway Commissioners sitting at Vancouver recently heard the Broadview Ratepayers' Association's application for a reduction of fares on the Burnaby Lake line.

The Brandon, Man., Municipal Ry. had, a press report states, to cease operation, July 7, owing to an explosion at Canada Gas and Electric Corporation plant which supplies the power.

At the request of the municipalities interested, the late Ontario Government headed by Premier Drury passed two orders in council on June 9, in connection with the proposal to extend the Hydro Electric Railway's Toronto and York District, Mimico Division which is in operation from the Humber River to Port Credit, on to Oakville. The first order approved the form of agreement between the Hydro Electric Power Commission of Ontario and the Toronto City; Mimico and New Toronto Towns, Port Credit Village and Etobicoke and Toronto Townships for the construction and equipment of an electric railway from Toronto to Port Credit, and authorized the Commission to enter into the agreements under the Hydro Electric Railway Act, 1914, and amendments thereto, to proceed with construction. The order after reciting that agreements for the construction of an electric railway between Port Credit and St. Catharines were approved by the municipalities between Port Credit and Oakville, in compliance with Municipal Electric Railways Act, 1922, sec. 29, viz: Toronto and Trafalgar Townships, and Oakville Town, and that these corporations were desirous that construction be approved of the agreements, subject to a new apportionment of the cost of the line; and authorized the Hydro Electric Power Commission of Ontario to proceed with the construction and equipment of the railway and to dispose of \$1,065,667 of bonds for for that purpose.

While the municipalities asked for the extension of the existing line from Port Credit to Oakville, the orders in council authorize the construction of a new line from Toronto to Oakville, such line being one section of the projected Toronto-Guelph-London line, viz: Toronto to Port Credit; and one section of the Port Credit-St. Catharines line, first voted upon by the municipalities in 1916, and 1917 respectively, and reaffirmed by the municipalities referred to in the orders in council, except as regards the harbor front entrance by Toronto.

The matter is before the Hydro Electric Power Commission of Ontario, but it is said the change in the Ontario Government and the passing of the orders in council have prevented progress being made.

New Toronto Town Council on July 4, discussed a project for the purchase of the existing line from Sunnyside to Port Credit by the municipalities interested, and its operation as a local enterprise. Mimico Town Council, Port Credit Village Council, and Etobicoke and Toronto Townships' Councils have been asked to appoint representatives to a joint meeting to discuss the matter.

The Hydro Electric Power Commission of Ontario is in the market for from 20 to 28 cars for operation on the Hydro Electric Railways various districts. They will be very similar in design to the double truck one-man-two-man safety cars ordered by the Commission from the St. Louis Car Co., which were described in Canadian Railway and Marine World for May, pg. 235. The chief differences will be that they will be suited for operation in two and three car trains when necessary.

London and Port Stanley Ry. is reported to have carried over 20,000 passengers to Port Stanley, Ont., on July 2.

Re-Routing of Toronto Street Cars.

Toronto Transportation Commission put in effect, on July 1, a general re-routing plan, affecting the street car service throughout the city, and for several days before published full pages of information in the city daily papers, explaining the changes, the reasons therefor, etc., from which the following is reproduced, as it will be of general interest to all street railway officials: Since the Commission commenced to function, very careful and continuous study has been made of traffic conditions in the city, with a view to introducing a more up-to-date and efficient routing of the cars, which is necessary to ensure an improved and more efficient system.

Merging of Lines.—In Sept., 1921, there were transferred to the Commission the system operated by the Toronto Ry. Co., the civic lines (three separate systems), and sundry sections which at one time formed portions of company owned radials. These separate units were connected together to give, as far as possible, a unified service during the period of rehabilitation, reconstruction, etc. It was from the first realized that no co-ordinated re-routing plan, though most desirable, could be effected until rehabilitation was substantially completed, loops installed, clearance and other curves laid, which, together with other improvements, were necessary to ensure flexibility and freedom of movement for the cars. Also, with few exceptions, the routes were interdependent one on another and any plan, to be effective and give the desired result, must be comprehensive in its scope, in spite of the temporary disorganization which is unavoidable with such a radical change until crews and passengers become familiar with altered conditions.

Little Change in 30 Years.—The city has grown greatly, the center of population has moved and though traffic movements have greatly changed in the past 30 years, yet there has been no general re-routing of street car traffic over the whole city during that time. In some cases routes existing today were evolved to accommodate the riding habits of three decades ago. The new routes are planned to meet the requirements of 1923 Toronto in so far as this can be done until such time as the waterfront viaduct is built; northwest grade separation effected; the Gerrard St. bridge completed; the Gerrard subway reconstructed, and the Toronto Suburban Ry's city lines absorbed into the system. The main consideration which has governed the re-routing plan is to give a service which will meet the requirements of the majority of the passengers and at the same time ensure that the service is distributed in the most economical method possible.

Routes Outgrow Usefulness.—There now exist cases where a route has outlived its usefulness, probably due to changed conditions since it was laid out, and a diversion, in whole or part, would be a great convenience to a large number of car users and inconvenience very few. There are also overlapping routes where the traffic does not warrant such a condition. Here again the same effect will be accomplished by change of route. The most efficient and economical service can be given when the traffic is comparatively uniform along the entire route. If at one point on a route traffic is much

greater than at other points the service may be quite inadequate at the heavy point, but still be excessive for the major portion of the route. If one condition is corrected the other is thrown still further out of balance. Putting additional, regularly scheduled cars on to a route is not a thing which can be done without careful consideration. Every car on a regular schedule represents a yearly gross expense of approximately \$20,000. Therefore, one unnecessary car on each route would mean an increased annual expense of \$440,000.

Extra Service Costs Money.—Extending a route beyond its area of fairly heavy traffic density to accommodate the residents of some particular section is also uneconomical, especially when those residents can reach destinations by transferring to another route. A route cannot be extended without putting on more cars, and each additional car mile operated will mean extra expense, with the possibility of little extra revenue being received. One of the principal objects in re-routing the cars is to obtain a better distribution of traffic. With improved distribution, passengers will be carried more comfortably and quickly, and, at the same time, more economically. The Commission, therefore, asks car users, as far as possible, to use the route laid out to serve their districts, thereby assuring themselves of the best service due to the improved distribution which will follow. It may be well to point out that if traffic is concentrated on one or two lines, this causes unnecessary congestion, slows up the service, and, if continued, ultimately necessitates the premature construction of subways, the cost of which is out of proportion to the advantages gained, except in cities where there is a very large population and where the surface lines are inadequate to handle the traffic to and from the business area.

Basic Idea of Re-routing.—Owing to the way in which Toronto is laid out, with the larger portions of its area and population in the east and west, the heaviest flow of traffic is that running eastward and westward, particularly from the west. It is for this reason that the basic idea underlying re-routing is a series of straight or shallow U-shaped cross-town lines, King, Queen, Beach, College, Carlton, Bloor and St. Clair, combined with a series of lesser lines linking them together. To care for the excess of population lying west of Yonge St., three diagonal routes, Dundas, Harbord and Bay, are used. During rush hours traffic is principally to and from the business center. This is taken care of by the tripper services, some of which are already in use and others are being added, four to the north and northwest and three to the east and northeast. These are scheduled routes forming a definite part of the regular service and are not subject to variation from day to day.

Service for Majority.—It is, of course, impossible to provide for everyone a car direct from his home to his business, and the convenience of the majority must govern. The new routing is, however, based on the general direction of travel taken by the majority, and after a week or so, when the schedules are finally adjusted to the traffic and the passengers and crews have become familiar with the altered conditions, the Commission is confident that the new routing

will be approved by the great majority of car users.

More Cars Wanted.—It is a matter of great regret to the Commission that the number of new cars available for re-routing on July 1 is less than anticipated, and, accordingly, the new plan will be severely handicapped in several ways, directly and indirectly. Some cars are much overdue. Others, though practically completed, are delayed owing to the non-delivery of essential equipment not supplied by the car builders. Furthermore, the rehabilitation of the majority of the cars transferred to the Commission, and which are to be retained in service, is not completed, due to reasons beyond the Commission's control. Consequently the available cars have to be distributed in the best way for the scheme as a whole and it is unfortunately necessary even to take the new cars off some routes on which they have been operating for some time, as well as delay their installation on new routes. This is a temporary measure, and when delivery is made of all the cars now on order, which should be in the comparatively near future, there will be sufficient of the up-to-date type of cars to operate the full service at normal hours on all trunk routes. There is one exception, however, the Sherbourne route, where there is not sufficient clearance for the new cars on Sherbourne bridge and not sufficient roadway allowance to permit of widening the devil strip. It may be asked why the Commission did not delay the re-routing until the full complement of cars was available. The answer is that July is the month of lightest traffic, and Sunday, July 1, immediately preceding Dominion Day holiday, when traffic is lighter than on a normal week day, offers the best opportunity for making alterations.

Suspension of Judgment Asked.—Experience of the consideration extended by the public in the past convinces the Commission that the same consideration and co-operation will be repeated and the result of re-routing not finally judged until conditions are normal and the handicap of shortage of suitable cars removed.

The attention of car users is drawn to the change being made in the destination signs which will be used on the cars in future. Destination signs are those appearing on the front of the cars and to the left of the route sign, when facing the car. Route signs also appear on the side of the cars. For some time, due to the increase in the size of the system, it has been more and more difficult to find room on the sign rolls for the number of names necessary to cover the various destinations on all routes. In future, with few exceptions, the destination signs shown while the cars are routed through to the end of the route will be "Terminus," and when cars, due to emergency conditions, are not run through to the end of the route, the destination sign shown will be "Not Thro'."

Night Cars will be operated on all night car routes every 15 minutes up to 1 a.m., and every half hour after.

Such complete arrangements had been made by the Commission's management that the re-routing went into effect without a hitch, and while, of course, some objections to it have been made, the great majority of the citizens are evidently well satisfied with it.

Mainly About Electric Railway People.

David Edward Blair, who has been elected Vice President, Canadian Electric Railway Association, was born at Montmagny, Que., July 25, 1877, and graduated from McGill University with the degree of B.Sc. in 1897. He entered Quebec District Ry's service in Sept. 1897, as Assistant Chief Electrician, and Mechanical Superintendent, remaining with that company, and its successor, Quebec Railway, Light, Heat & Power Co., until March 1903, when he was appointed Assistant General Superintendent, Montreal St. Ry., and afterwards Superintendent of Rolling Stock, which position he has remained in since, with that company, and its successor, Montreal Tramways Co.

E. E. Carpenter, who has been appointed Chief Engineer, British Columbia Electric Ry., Vancouver, graduated from Stanford University in 1898, with the degree of B.S. in civil engineering, after which he was engaged for about seven years in railway engineering work. He was, at one time, chief engineer in charge of the design and construction of a 5,000 h.p. initial power development installation for the B. C. E. R. Co., at Jordan River, Vancouver Island, and later engaged in private practice in partnership at San Francisco.

Henry Herbert Couzens, General Manager, Toronto Transportation Commission, who has been elected President, Canadian Electric Railway Association, was born at Totnes, Devonshire, Eng., Oct. 16, 1877, and was educated at the Independent College (Taunton School), Taunton, Eng. He served subsequently as an articled pupil in both mechanical and electrical engineering, with Allen & Son, Taunton, and the Taunton Corporation Electrical Works, respectively, becoming Assistant Engineer of the latter, and in 1898 was appointed Assistant Engineer, Bristol Corporation Electrical Department, Bristol, Eng., and held that position until 1901, when he was appointed Deputy City Electrical Engineer, Bristol. He resigned in 1909 on his appointment as Manager and Engineer, West Ham, London, Eng., Corporation Electric Supply, and in 1912 was appointed to a similar position with the Hampstead Borough, London, Eng., Council and continued for a year as Consulting Engineer for West Ham. He resigned that position at the end of 1912, on his appointment as General Manager, Toronto Hydro Electric System, and took up the duties of the latter position early in 1913. In 1920 he was given an indefinite leave of absence to become General Manager, Toronto Transportation Commission. He is a member of the Institution of Electrical Engineers, London, Eng., the National, Royal Canadian Yacht and Engineer Clubs, Toronto, and Toronto Board of Trade, and was Vice President of the Canadian Electric Railway Association for 1922-23. Mr. Couzens expects to leave Toronto about the middle of August to spend a short time in England.

A. J. Gadoua, acting Superintendent of Transportation, Montreal Tramways Co., died at Notre Dame Hospital, Montreal, July 5, from syncope, caused by acute indigestion. He was born at Sherrington, Que., in 1871, and entered the company's service in 1891 as a horse car conductor, and after the system was electrified, he was appointed inspector,

and later was in charge of the St. Denis shops. He served in Paris, France, under the late Duncan McDonald, General Manager, Paris tramways, and on returning to Montreal in 1907, was appointed



George Kidd,
President, British Columbia Electric Railway Co.



W. G. Murrin, M.I.E.E.,
Vice President, British Columbia Electric
Railway Co.

Claims Agent, Montreal St. Ry., later Montreal Tramways Co., and in Oct. 1922, was appointed acting Superintendent of Transportation, on A. Gaboury's retirement.

G. Gordon Gale, Vice President and General Manager, Hull Electric Co., Mrs. Gale, and their children, are spending the greater part of the summer at their country house at Aylmer, Que., and will visit Tadousac, Que., for a short time.

George Kidd, heretofore General Manager, British Columbia Electric Ry. Co., Vancouver, has been appointed President; W. G. Murrin, M.I.E.E., heretofore Assistant General Manager, has been appointed Vice President at Vancouver; and A. T. Goward, heretofore Manager at Victoria, has been appointed Vice President there. No change has been made in their duties, Mr. Kidd remaining in charge of the company's entire policies, and holding power of attorney from the directors in London, Eng.; Mr. Murrin continuing in charge of the actual operations on the British Columbia mainland, and Mr. Goward in charge of operations on Vancouver Island. R. M. Horne-Payne continues as Chairman of the Board in London.

George Kidd, who has been appointed President, British Columbia Electric Ry., Vancouver, B.C., was born at Sheffield, Eng., March 9, 1874, and qualified as a chartered accountant in 1896. He entered British Columbia Electric Ry. service in 1907, and has been, to 1911, Secretary, London, Eng.; 1911 to May 6, 1914, Comptroller, London; May 6, 1914, to July 1, 1923, General Manager, Vancouver, B.C.

W. B. Mayo, Chief Engineer, Ford Motor Co., is reported to have been appointed General Manager of the Detroit, Mich., city owned electric railway.

William George Murrin, M.I.E.E., who has been appointed Vice President, British Columbia Electric Ry., Vancouver, B.C., in charge of operations on the mainland, was born in London, Eng., Aug. 27, 1875, and was educated at the Royal Naval School, Greenwich, and the Finsbury Technical College, London. He entered electric railway service in 1903, since when he has been, to 1911, Works Manager, London United Tramways Co.; 1911 to 1913, electrical engineer in London; 1913 to 1914, Mechanical Superintendent, British Columbia Electric Ry., Vancouver; 1914 to 1917, General Superintendent, same company, Vancouver; 1917 to July 1, 1923, Assistant General Manager, same company, Vancouver.

E. W. Oliver, B.A.Sc., C.E., heretofore General Superintendent, Electric Lines, C.N.R., Toronto, who has had charge of the Niagara, St. Catharines and Toronto Ry. and the Niagara, St. Catharines and Toronto Navigation Co., and also has devoted considerable time recently to Toronto Eastern Ry. matters, has been appointed Manager, Niagara St. Catharines and Toronto Ry., Niagara St. Catharines & Toronto Navigation Co., Toronto Suburban Ry. and Toronto Eastern Ry., with office at Toronto, reporting to S. J. Hungerford, Vice President, Operation and Construction Departments, C.N.R., Montreal.

Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., has resigned.

Alderman Sutherland, Chairman of the St. Thomas, Ont., City Council street railway committee in referring recently to the continued deficit on the operation of the municipal railway is reported to have said that it is largely due to the increased number of automobiles in the city.

Weston-Toronto Railway Service.

Mayor Flynn, Reeve Gardhouse, and Town Solicitor Gray, of Weston, Ont., went to Ottawa early in May, to urge on the Minister of Railways the necessity for improved service between Weston and Toronto, and were referred to the Canadian National Rys. management. They then went on to Montreal, and had an interview with S. J. Hungerford, Vice President, Operation & Construction, and suggested that Toronto Suburban Ry. cars between Weston and the junction of Keele Street and Weston Road, Toronto, should operate every 10 minutes, instead of every 20 minutes, and that an electric storage battery car service be established on the G.T.R., to make two trips from Weston to Toronto in the morning, and two trips from Toronto to Weston in the evening. They also asked that the Toronto Suburban Ry. carry out its agreement with Weston by removing its tracks from the west side of Main St., there, to the center of the street, for approximately three quarters of a mile, so that the town might proceed with its street paving programme. Subsequently, at Mr. Hungerford's request, they had interviews with R. A. C. Henry, Director, Bureau of Economics, and chairman of the C.N.R. officials committee dealing with electrification problems for Toronto district.

Mr. Hungerford wrote the Mayor of Weston, at the end of June, his letter being summarized as follows:—"One of the suggestions made at the interview was, that the Toronto Suburban Ry. tracks should be taken off Weston Road altogether from the northerly limits of Toronto and that its Woodbridge line be joined up with the old G.T.R. line just north of Weston and a half-hourly service be maintained from there down to Parkdale. This was very seriously considered and it would be feasible to take up the tracks on Weston Road and establish a half-hourly service on the old G.T.R. line on the basis of a 10c fare, provided the same traffic could be maintained as far as St. Clair Ave. and 50% of the present traffic to St. Clair Ave. continued on to Parkdale. A 10 or 15 minute service on this route would be entirely impracticable without constructing an entirely independent line for this particular traffic and the cost of such an independent line would be such as to render the fares which it would be necessary to charge, beyond reason. After very careful consideration, Mr. Hungerford felt that a half-hourly service would not be adequate to meet the requirements of the Mount Dennis and Weston people, and he came to the conclusion that it would be in their interests to keep the tracks on the roadway.

The Canadian National Rys. have requested the City of Toronto to consider taking over the portion of the Toronto Suburban Ry. from the city limits at Northlands Ave. to Woodbridge and negotiations are now under way with the city accordingly. In the event of the city failing to take over the line to Woodbridge, he is prepared to recommend that steps be taken to put in an adequate service on the T.S.R. and to extend the line as far as St. Clair Ave. as soon as possible, the frequency of the service to be adequate to meet the reasonable demands of the traffic and subject to change from time to time as conditions warrant. The fare between points in Weston and Mount Dennis to St. Clair

Ave. to continue as at present, until the date of the expiration of the franchise with the Town of Weston on Oct. 27, 1928, and the one with York Township expiring on Sept. 4, 1929, the above to be contingent upon the Town of Weston and York Township entering into new franchises,—Which will provide against bus and jitney competition; which will be of sufficient duration to satisfy the expenditure necessary to rehabilitate the line and provide sufficient equipment for the improvement of the service; which will provide for readjustment of fares from time to time, following the expiration of the present franchise, on the basis of service at cost and which will provide with respect to permanent paving that may be done during the period of the new franchises, that the railway will be called upon to bear only the additional expenses of such pavements as is the result of the railway tracks occupying the street, and be responsible for such maintenance work as is the result of the operation of the railway. It is the intention ultimately to extend this service as far as Bloor St., College St. or possibly beyond as part of the C.N.R. development.

The Canadian National Rys. are prepared to carry out the Toronto Suburban Ry's obligations with respect to paving between Cruikshank Ave. and the northerly limits of Weston in accordance with the agreement of June 25, 1914.

Mr. Hungerford is prepared to recommend that a test be made of a battery car service between Weston and Parkdale, or Toronto union station, in the morning and evening, on the understanding that it does not involve any loss to the C.N.R.

One-man cars on Hydro Electric Railways, Essex District.—A recent Windsor, Ont., press report stated that one-man car operation was to be discontinued on the Hydro Electric Railways, Essex District. We are officially advised that this report is incorrect. In addition to the freight and general equipment, there are on the Essex District, 17 one-man safety cars; 10 single truck, two-man cars, and 20 double truck two-man cars. The 17 safety cars will continue to be operated by one man, and in addition, the four one-man-two-man cars ordered from the St. Louis Car Co., and described in a preceding issue of Canadian Railway and Marine World, delivery of which was expected during July, will be operated as one-man cars except during rush hours when two men will be used. One-man car operation on the Essex District is reported as satisfactory in every way.

Transfers on Calgary Municipal Ry.—R. A. Brown, Superintendent, Calgary Municipal Ry., in recommending a return to the transfer regulations in force in 1921, when transfers were made at the point at which the car a passenger was on took a different direction from the car to which he wished to transfer, pointed out that under that regulation the ratio of transfer passengers was 16.7%. The regulation was suspended in 1922 for nine months during which the ratio of transfers increased to 18%. At the beginning of this year a new regulation providing for passengers transferring at the first connecting or last diverging intersection was put in force, and under it the ratio of transfers increased to 21%.

Montreal & Southern Counties Railway Terminal Station.

The Montreal & Southern Counties Ry. is about to build a one story addition to its station at the corner of McGill and Yorkville Streets, Montreal. The addition, 37 by 45 ft., will make the completed structure approximately two-thirds larger than the present one. The erection of the addition will involve the rearranging of the interior layout. The main door will be in the center of the north front, entrance being obtained through a large vestibule into the general waiting room, which will be 25½ x 55 ft. in place of the former 25 x 18 ft. At the end of the central portion of the waiting room will be the approach to the ticket office will be lavatories, entrances being provided from the waiting room into one section, and from the ticket office corridor into the second. The baggage room will be to the east of the ticket office, and the news stand will be in a niche off the waiting room. The exterior walls of the new structure will be solid brick, with pressed brick facing, 13 in. wide, carried on concrete foundation. A feature will be made of the main entrance by using a wide plaster treatment with stone caps and base and flush panel effects in brick and tile. The elevation of the structure will be of a simple design, with moulded galvanized iron cornice. The roof will be flat, of tar and gravel. The vestibule and lavatory floors will be of terrazzo, and the other floors of maple. The additional general waiting room will be finished similar to the present waiting room, and the vestibule will be built up with a glazed screen having wood panels, pilasters and glazed doors. The building will be heated by hot water. We were officially advised, July 12, that while the contract had not then been let, it was expected to have the work started by July 31, and completed by Sept. 1.

Electric Railway Notes.

Oshawa Ry. has received two cars from Ottawa Car Manufacturing Co.

Quebec Railway, Light & Power Co., is considering the purchase of additional rolling stock for its city street railway lines.

Toronto Transportation Commission has received 26 motor cars, out of an order of 50, from Ottawa Car Manufacturing Co., and has also received 12 motor cars from Canadian Car and Foundry Co.

Toronto Street Railway Employees' Union has re-elected its chief officials for another term, as follows: B. Merson, Chairman; City Controller J. Gibbons, Business Agent; and Alderman W. D. Robbins, Secretary.

London St. Ry. applied to the city council, July 3, for permission to convert three of its old cars into one man cars, and the council referred the matter to the finance committee with the suggestion that 6 cars might be converted.

The first street car line built in Toronto was on Yonge St., and it was opened for traffic on Sept. 11, 1861. Toronto had then a population of 42,000. The Queen St. line was opened on Dec. 2, 1861. The conductors did not wear uniforms and were paid \$8 a week.—Toronto Star.

Marine Department

Canadian Government Radio Direction Finding Stations.

Over five years have elapsed since radio direction finding stations were first erected on Canada's east coast by the Marine Department for navigation purposes. Stations were then erected at Cape Race, Canso, Chebucto Head and Cape Sable. The Cape Sable station was dismantled at the close of the Great War, reverting to its original commercial status, that of handling ordinary commercial messages with ships at sea, under contractual obligations long since entered into with the Marconi Co. for its operation and which the exigencies of war only temporarily suspended. A new station was, however, erected in 1920, at Red Head, near St. John, N.B., in such a position as to afford ships navigating the Bay of Fundy, in thick or foggy weather, a direct line of bearing up or down the bay.

The Department expects to erect two additional d.f. stations, one on St. Paul Island in Cabot Straits, and the other on the west of Vancouver Island in the vicinity of Pachena Point. The location of a site is of considerable importance for technical reasons, and much preliminary work must be done, carrying out tests from various points before the most suitable, and satisfactory location can be found.

Canada was amongst the first countries to foresee the great possibilities of the direction finding stations and to introduce them as an aid to navigation. Their use at so early a date was, however, looked upon by some navigators with feelings of doubt, and even with disfavor, for it was difficult to convince mariners of the old school that radio could establish the position of a vessel at sea any more accurately than practical navigation which the twentieth century had raised to an almost exact science. Notwithstanding this attitude, the Marine Department threw open the service for the use of all ships, without fee or toll, with the assurance that on days when the ocean lanes were obscured in haze and fog and the uncertainties of dead reckoning were held in doubt, the direction finding stations alone would provide the guiding hand. In due time the Department was able to produce evidence in support of its faith. Reports lauding the accurate and efficient work began to come in from masters of ships of all nationalities; ships of high and low degree, crack ocean liners and modest coasting tramps. Some inaccuracies were recorded, but reports of these were expected and solicited, for they were of prime importance in assisting the marine authorities to arrive at conclusions by which they could improve the stations and render them more accurate and reliable, and the Department never ceased its painstaking efforts to bring the apparatus to the highest degree of efficiency.

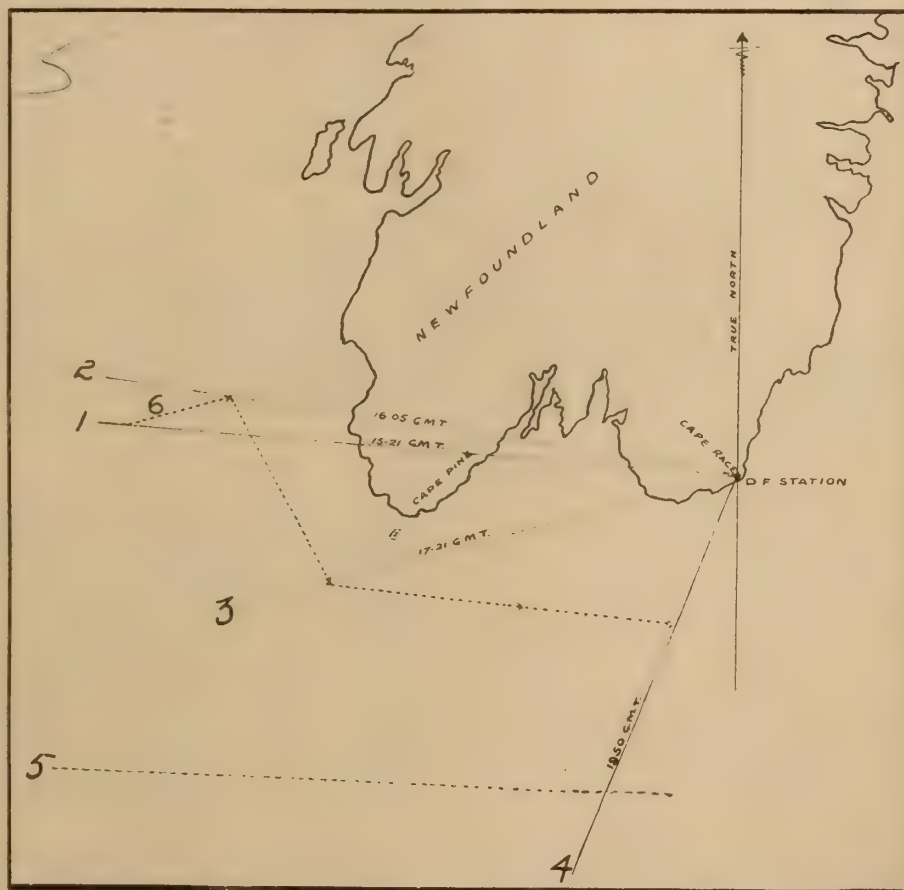
After over five years of practical experience, numbered amongst the keenest of direction finding station advocates, are those who in the commencing days of the stations were ready to condemn them. The appreciative comments which have been received regarding the service rendered are far too numerous to reproduce here, but setting aside all reference to everyday cases of assistance given,

the efficiency of the stations can perhaps be best expressed in the words of one master who said, "I consider that the direction finding is the greatest thing in fog that has been invented." Thus, taken in its broader sense, direction finding supplies the missing link when astronomical and other observations are unavailable and dead reckoning with its complexities is often a very doubtful factor.

A unique example of the assistance rendered ships at sea by means of d.f. bearings is the following: while off the Newfoundland coast, east bound, on Nov. 24, 1919, a steamship encountered dense fog.

d.f. station:—"Your bearings have proved very accurate. Ship had set 21 miles to northward since yesterday noon. Can now hear Cape Pine fog whistle." (See accompanying chart).

An example of the disasters that might have been averted had the d.f. stations been more fully relied upon is the case of the passenger s.s. Bohemian of 9000 tons gross, bound from Boston to Liverpool via Halifax, with 65 passengers and 115 crew. On March 1, 1920 at 2 a.m., this ship was approaching Halifax, in foggy weather and the captain obtained a bearing from Chebucto Head d.f. station at the entrance to Halifax Harbor.



Course of the steamship—eastbound, Nov. 24, 1919.

Lines 1, 2, 3, 4. Direction finding bearings.

Line 5. Supposed (approximate) course of ship, as calculated by dead reckoning.

Line 6. Actual (approximate) course of ship as shown by direction finding bearings.

In order to check the ship's position the master obtained a bearing from the Cape Race d.f. station, which put the ship 20 miles out of position by dead reckoning and soundings. Knowing full well the dangers of the Newfoundland coast, the master proceeded with great caution and after the lapse of a suitable period, obtained another bearing from Cape Race. This confirmed the previous information and showed the ship still setting to the northward and headed for the eastern shore of St. Mary's Bay, instead of having a clear course well to the south of Cape Pine. The captain thereupon turned his ship southward and an hour and a quarter later he picked up Cape Pine fog whistle. After verifying his new position by a further bearing he forwarded the following message to Cape Race

The bearing thus obtained placed the ship between 5 and 6 miles nearer shore than the position as disclosed by dead reckoning. The master, decided, however, that the d.f. bearing was entirely inaccurate and disregarded it, holding his ship to the same course for a further 40 minutes. At end of that time, still navigating according to dead reckoning, he altered the course of the ship to turn into Halifax Harbor. Ten minutes later, just as Chebucto Head d.f. station was being called for another bearing, the ship struck, and the request for a bearing was turned into a distress call. All the passengers were taken ashore safely, but 6 of the crew were lost subsequently while salvage operations were under way. The ship broke in two and was a total loss.

Another case is that of the s.s. *Marvale* which on May 21, 1923, struck Freels Rock, near Cape Pine, Nfld., subsequently becoming a total loss. The captain did not ask for bearings although he was but 21 miles from Cape Race d.f. station when his ship struck.

To assist navigators in laying off their bearings the Department has published two gnomonic charts, one extending

ship can take his own bearings and not have to depend on a second party for his information, it would undoubtedly prove the most satisfactory to all concerned.

The Marine Department is closely in touch with all developments in connection with direction finding, and is conducting work along these lines. The Canadian d.f. stations enjoy an enviable

Three Rivers Harbor Commissioners.

The Dominion Parliament has passed an act incorporating the Three Rivers Harbor Commissioners, and defining the limits of the harbor, which comprises the portion of the River St. Lawrence between a line drawn parallel to and one mile easterly perpendicularly from the line joining the intersection with high water mark on the north shore of the boundary line of Three Rivers and Pointe du Lac Parishes and in the intersection of high water mark on the south shore of the boundary line of St. Gregoire and Nicolet Parishes, and a line drawn through triangulation monument XII on the north shore on Lottinville Point in Cap Magdeleine Parish, and triangulation monument XII-1, on the south shore, on the extremity of Becancour Point, on Ile Dorval or Montessen in Becancour Parish. Three commissioners will be appointed by the Dominion Government, to be paid out of the harbor revenues, such amount as the Government may determine. They will have all the powers usually conferred on harbor commissioners, and will administer all the property heretofore under the control of the Three Rivers Harbor Commissioners who were appointed under the authority of the Statutes of 1882, chap. 52, and amending acts.

Welland Canal Lock Gate Accident.—Glen Line Ltd. s.s. *Glencassie*, while up-bound and light, July 10, about 2.30 a.m., struck the lower tow path gate in entering lock 11, tearing off and breaking one of the gate suspension bars below water level, and breaking two wales. It was necessary to take a spare gate from Port



Dominion Government Radio Direction Finding Station, Red Head, St. John, N.B., showing Marconi Co's system of aerials as used by Marine and Fisheries Department.

from Belle Isle to New York and the other from Belle Isle to Bermuda. These charts are laid off on the gnomonic projection, and thus avoid the error which occurs when using the regular mercator projection to lay off bearings at distances of more than 30 or 40 miles. The gnomonic charts are provided with a graduated scale of degrees around each station, so that laying off bearings from a station becomes a simple matter, involving no calculations. These charts may be obtained from the Marine Department's Chief Hydrographer, at a nominal cost.

Radio direction finding is developing along several lines. First, the system described above, in which the d.f. apparatus is installed at the station on shore, and the responsibility for the accuracy of the bearings devolves on the operator at the shore station. Second, the system in which the d.f. apparatus installed on board the ship, and the ship's operator takes the bearing, and the responsibility for its accuracy rests on him; and, third, the system in which a radio beam from a station ashore is rotated around the compass at a certain definite rate, a distinctive signal or other means being employed to indicate when the beam is pointing true north. As the situation stands at present, the first system mentioned above is the most consistent and will probably continue to be used for some time to come. Nevertheless, both of the other systems show great possibilities, the development work which is being done on them is giving very encouraging results, and if eventually some arrangement can be arrived at whereby the navigating officer of a



Interior of Dominion Government Radio Direction Finding Station, Red Head, St. John, N.B., showing Marconi Co's system of radio direction finding apparatus, as used by Marine and Fisheries Department.

reputation for the accuracy of their bearings and the promptness with which they are given, and it is pleasing to know that Canada is well to the fore in connection with this comparatively new development of the art of radiotelegraphy.

Dalhousie, to be installed, and this was done and traffic resumed by 1.30 p.m. the same day. About half a dozen ships were delayed. The damage to the gate was not extensive, but the estimated cost of repairs and the installation of the spare gate is \$1,200.

Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties:—

Stranding of s.s. Imperoyal.

Held at Halifax, N.S., June 28, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. Neil Hall, and Capt. P. D. Bates of the s.s. Lord Kelvin, as nautical assessors, into the stranding of the Imperial Oil Ltd. s.s. Imperoyal on Grimes Rock, at the entrance to the Gut of Canso, N.S., June 15. Capt. C. G. Sloane, of the s.s. Imperoyal, stated that he sailed from Montreal for Halifax, and met with smoke and fog during the entire trip, which cleared somewhat on entering the Gut of Canso. He had been on the bridge most of the time, and from midnight until the grounding did not leave his post. He had been told by a previous captain that, on the southeasterly course, the standard compass had a 9 deg. east deviation, and having had no opportunity to verify his course, nor obtain observations, he had applied that deviation. When near Cerberus, the weather became very thick. He maintained his full speed of 11 knots, but was sounding his fog signals at regular intervals. The lookout was on the bridge and the chief officer was with him on the starboard side of the bridge. He heard the buoy off Cranberry Head twice and maintained his course, grounding at full speed in a fog so dense that he could not see a ship's length. The tide was ebbing and it was near low water. Full speed astern was ordered, and the boats were cleared and manned. Soundings were taken, and by filling some tanks forward, the ship came off without assistance. He had been sailing for 21 years and this was his first accident. The court found the Captain solely to blame for the accident, and, owing to the strong pleas for clemency, suspended his certificate for one month from June 28, cautioning him that leniency will not be shown should he ever appear before the court again.

Mapledawn-Brookdale Collision.

Held at Montreal, June 21 to July 6, into the collision between Canada Steamship Lines' s.s. Mapledawn, and the Century Coal Co's barge Brookdale, in tow of Sincennes-McNaughton Line's steam tugs John Pratt and Mathilde, near the King Edward pier, in Montreal harbor, June 1, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. J. O. Grey and D. M. Dickson, as nautical assessors. The Mapledawn's captain, E. Stauffer, stated that he left the Century Coal Co. dock, Windmill Point, outward bound, on June 1, at 3.30, and after straightening for the channel, noticed the steam tug Aberdeen and a scow leaving the Alexandra pier extension, and to avoid trouble he ordered full speed astern, and helm hard to port, at the same time noticing the barge Brookdale about 350 ft. ahead of him. Before the astern order was given, his ship was going about 3 miles through the water, and she canted her head to starboard, and in about 1½ minutes after, collided with the Brookdale, which eventually sank. When he saw the Brookdale first he felt sure she was being towed down the river, as her stern was toward him, as also one tug, the only one he saw at the time. The barge Brookdale was in a position in the channel which would have allowed passage of a ship

on either side of her, and was being towed stern first, by two tugs, one of which was also being run stern first. A casual glance would indicate that the barge and tugs were going down stream, but she was seen to leave Victoria pier, and her change of position up, which was seen by the Mapledawn's pilot, should have been sufficient to show that she was not doing down, but was manoeuvring. The court mentioned the unseamanlike method of towing, and pointed out that so far as its knowledge went, there are no rules or harbor regulations as to how towing should be performed. This method has, at times, to be performed when pulling off from a dock or wharf, but is rarely continued for any distance, and while the method was deprecated, it was not condemned. The tugs gave no signal that a collision was imminent or inevitable, and if this had been perceived on the tugs, of which there was no evi-

Dominion Marine Association.

Honorary President, A. A. Wright, Vice President and Managing Director, Davie Shipbuilding and Repairing Co., Montreal and Toronto.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Ltd., Montreal.

First Vice President, G. J. Madden, George Hall Coal and Shipping Corporation Ltd., Ogdensburg, N.Y.

Second Vice President, A. E. Mathews, Mathews Steamship Co. Ltd., Toronto.

Executive Committee, The President, First and Second Vice Presidents; and W. E. Burke, Century Coal Co. and Canada Steamship Lines Ltd.; W. Crawford and Yvon Dupre, Sincennes-McNaughton Lines Ltd., Montreal; L. L. Henderson, formerly of Montreal Transportation Co., honorary member; W. J. McCormack, Algoma Central Steamship Lines, Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; C. H. Nicholson, Canada Atlantic Transit Co., and Canadian National Rys. Central Region Car Ferries, Toronto; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Toronto; John Waller, Keystone Transports Ltd., Montreal; Senator L. C. Webster, Webster Steamship Co. Ltd., Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

dence, some signal would have been compulsory. The evidence of the Mapledawn's pilot, D. Paquet, differed from the captain's in respect of the tug Aberdeen and scow, which he stated had not left the wharf, and the court therefore declined to accept the captain's version that the Aberdeen was a contributory cause. The court found that the Mapledawn's captain and pilot were alone at fault and responsible for the collision, and suspended their certificates for one month. The court suggested to Montreal Harbor Commissioners that the signal concerning narrow waters, article 25, be embodied in the bylaws and regulations governing navigation in the harbor, and that its application be made compulsory whenever ships are in sight of one another, and also, if possible, that the towing of ships be done so as to avoid any doubt as to the tow's direction or destination.

The American Association of Port Authorities will hold its annual meeting at New Orleans, La., Dec. 10 to 12.

Canadian Pacific Railway Ocean Steamship Services.

In connection with the s.s. Empress of Canada's recent voyage, when a new trans-Pacific record was created, the Vancouver Harbor Commissioners presented the ship with a silver shield recording the facts. The distance travelled is given as 4,179 knots; the time taken as 8 days 10 hr. 53 min., and the average speed as 20.6 knots.

The s.s. Marloch, on arrival at Glasgow, Scotland, from Montreal, early in July, was taken off the Canadian route, and sent to Hull, where she started on a cruise to Norway and Sweden, returning through the Kiel Canal. Her masts were shortened to enable her to pass certain bridges on the canal and on the conclusion of the trip, she is to be returned to the Canadian route.

The s.s. Borden, which has been added to the company's West Indian service, is in charge of Capt. G. H. Simpson, formerly chief officer of the s.s. Empress of Britain. He has been in the service continuously since 1900, when he was fourth officer of the s.s. Orcadian. The chief engineer is T. P. Whitmell, also transferred from the Empress of Britain. E. Waller, heretofore in the company's offices at Montreal, has been appointed purser.

Investigation into Shipbuilding Industry Asked.

The Canadian Manufacturers' Association passed the following resolution at its annual meeting in Toronto, recently: Whereas, 26 steel ships, especially designed for the Canadian lake trade, have been built abroad recently, and are now being delivered to Canadian owners; Whereas there is not one steel ship being built in Canadian yards, although there are many well-equipped and modern yards between Halifax and Victoria, representing a large investment of capital; Whereas this was once a flourishing Canadian industry employing thousands of skilled and unskilled workers; and Whereas the shipbuilding and ship repairing industry is a natural, as well as an essential, industry for which Canada is well suited, through the capacity of her people, and the possession of necessary materials; Therefore be it resolved that the Canadian Manufacturers' Association in annual general meeting assembled, respectfully urge the Dominion Government to appoint a royal commission for the purpose of making an investigation into the shipbuilding and ship repairing industry, in order to discover what measures are necessary to retain it in Canada.

Welland Canal Navigation.—L.D. Hara, Superintending Engineer, Welland Canal, has issued a notice to mariners stating that for some time past a temporary channel along the northerly side of Hog Island has been in use for entrance from the Niagara River into the Welland River, or Chippawa Creek, at Chippawa, Ont., about a mile above Niagara Falls. The temporary channel is being filled in and local shipping is using the new ship channel, south of the Hydro Electric Power Commission of Ontario's intake made recently. Ships entering the Welland River should not attempt to take the old temporary channel, but, should utilize the new ship channel, forming part of the H.E.P.C. new intake structure.

Dominion Marine Association's Activities.

The Dominion Marine Association's executive committee met in Montreal, July 9, under the chairmanship of A. A. Wright, Honorary President, owing to the absence of President T. R. Enderby, in Winnipeg.

A delegation consisting of the President and some 20 other representatives of the Chicago Sanitary District addressed the committee and requested the Association's sympathetic attitude towards their proposals for legislation authorizing the withdrawal of 10,000 cub. ft. of water a second, for its drainage canal, from the Great Lakes, and for the construction of compensation works, at the district's expense, at the heads of the Niagara and St. Lawrence Rivers and in the rivers between Lakes Huron and Erie. The quantity of water which is permitted to be withdrawn for this purpose was limited by an order in 1912, to 4,167 cub. ft. a second, but the amount actually withdrawn is, admitted to be in the neighborhood of 10,000 cub. ft. a second. The Association has consistently protested against the District exceeding the permissible withdrawal, and has pointed out the effect on the St. Lawrence levels, and the consequent danger to Canadian shipping, and as a result, the U.S. Government, on June 18, issued an order restraining the District's trustees from taking more than 4,167 cub. ft. a second permitted by the 1912 order. The proposal to offset the $5\frac{1}{2}$ in. lowering of the lake levels due to the withdrawal of water for the drainage canal, includes the construction of compensating works at various points, at an estimated cost varying from \$2,500,000 to \$5,000,000, and it is claimed that so far as navigation interests are concerned, as well as harbor levels, such works would furnish a certain remedy for the $5\frac{1}{2}$ in. lowering, and also restore levels, lowered by the diversion of 56,000 cub. ft. a second, or more, for water power at Niagara, the Welland Canal, and for enlargements in the Detroit and St. Clair Rivers. It has therefore been suggested in the Chicago Sanitary District's interest, that the construction of remedial works be proceeded with under the supervision of the International Joint Commission, and that a U.S. federal control of the diversion at Chicago be established, the Sanitary District being permitted to withdraw 10,000 cub. ft. a second. After hearing the delegation's arguments, the committee declined to commit itself to any opinion on the proposals, and reserved decision until further consideration can be given and additional information obtained.

The Dominion Public Works Department asked the committee for an expression of opinion as to the choice between Kingston and Prescott, Ont., for development as a deep water terminal for the new Welland Ship Canal. After hearing a delegation, and considering the matter, the committee decided in favor of Kingston, and advised the Department accordingly.

The probable effect of the Inland Water Freight Rates Act, 1923, the text of which is given on another page, was discussed by the committee, and while no definite opinions were expressed, it was felt that the tendency was towards a restraint of trade, and that there were other objectionable points, but that the matter would have to work itself out.

A letter was read from C. H. Nichol-

son, Manager Steamships & Car Ferries, Central Region, Canadian National Rys., respecting steamboat inspection rules, and action was again deferred.

Regarding the Association's proposals, in conjunction with action by the Shipping Federation of Canada, for the abolition of compulsory payment of pilotage dues on the St. Lawrence below Montreal, pilotage not being compulsory, and the endeavor to obtain legislation on the matter at the Dominion Parliament's last session, a communication from the Minister of Marine was read, declining to act at present. It was therefore decided to bring the question up again in good time to endeavor to get it included in next year's legislation.

A letter was read from W. B. Elsworth, Manager, Marine Department, Imperial Oil Ltd., about the drinking water regulations provided by order in council on June 22, but as they had been printed, and a copy was not before the meeting, action was deferred.

The Association is in correspondence with the Montreal Harbor Commissioners respecting conditions generally at that port, and has requested particularly, that a reduction be made in shovelling charges on grain, which compare very unfavorably with those at Georgian Bay ports and Port Colborne.

Suspension of Coasting Regulations Provided for.

The Canada Shipping Act, R.S.C., 1906, chap. 113, provided in part 6, that no foreign built British ship, whether registered in Canada or elsewhere, as a British ship, could engage in Canadian coasting trade, unless licensed by the Minister of Customs so to do, also that no goods or passengers could be carried by water from one Canadian port to another, except in British ships, the penalty for violation of this provision being a fine of \$400 on the captain, and any goods so carried to be forfeited as smuggled, the ship to be detained by the collector of customs at any place to which the goods or passengers were taken, until the penalty was paid, or security for it given, and until the goods illegally carried were delivered up to him. Sec. 958 was as follows: "The Governor in council may, from time to time, declare that the foregoing provisions of this part shall not apply to the ships or vessels of any foreign country in which British ships are admitted to the coasting trade of such country, and to carry goods and passengers from one port or place to another in such country."

In 1908, sec. 958 was repealed, and the following was substituted: "The Governor in council may, from time to time, (a) by order in council, declare that the foregoing provisions of this part shall not, while such order in council is in force, apply, either throughout Canada, or in any specified waters of Canada, to the ships or vessels, or to any specified, ascertained or ascertainable class or number of the ships, or vessels, of any foreign country in which British ships are admitted to the coasting trade of such country, and to carry goods or passengers from one port or place to another in such country; and (b) revoke or vary such order in council."

At the Dominion Parliament's recent session, sec. 958, as enacted in 1908, was

repealed, and the following was substituted: "The Governor in council may, from time to time, by order in council, declare that the foregoing provisions of this part shall not, for the period specified in such order in council, apply, either throughout Canada, or in any specified waters of Canada, to the ships or vessels, or to any specified, ascertained or ascertainable class or number of the ships or vessels, of any foreign country."

Briefly, the situation now is that the Government can, at any time, allow U.S. or other ships, to trade between Canadian ports, notwithstanding that the U.S., or other countries in which they are registered, will not allow Canadian ships to trade between their ports.

The Canadian Manufacturers' Association passed the following resolution at its recent annual meeting:—Whereas the commission appointed by the Federal Government to investigate certain allegations to the effect that a combine existed among lake carriers, has made its recommendations and the matter has been placed before the House by the Minister of Trade and Commerce: and whereas this report, among other things, recommends that the Governor-in-council be given power to suspend the coasting laws: and whereas such suspension would enable the great United States shipping companies to carry cargoes between Canadian ports while the U.S. Merchant Marine Act completely prohibits Canadian ships from carrying any cargoes between United States ports: and whereas this one-sided arrangement would have the following results: (1) The operation of Canadian ships on the Great Lakes would be most seriously restricted. (2) New ships would not be constructed, with the result that the Canadian shipbuilding and allied industries would be disastrously affected. (3) Canadian officers and sailors, and men employed in shipbuilding and allied industries would be deprived of employment in Canada and in order to follow their professions would be obliged to emigrate. Whereas it has been recognized for many years that the prosperity and safety of every part of the British Empire depends largely upon the encouragement given to shipping and navigation: therefore be it resolved that the Canadian Manufacturers' Association in annual general meeting assembled, views with alarm and strongly opposes, on national grounds any suspension of the coasting laws, and particularly objects to the proposal to delegate to the Governor General in council the power to suspend the Canadian coasting laws, thus substituting government by order-in-council for government by Parliament.

Quebec Export Terminals Ltd. has been incorporated under the Dominion Companies Act, with \$200,000 authorized capital, and office at Toronto, to take over any rights, privileges or franchises that may be, or have been, granted for the handling and exporting of live stock at Quebec, Que., and elsewhere in Canada; to carry on a general warehousing and forwarding business, and act as ship brokers and shipping agents. The incorporators are,—L. H. Coombes, W. E. Sommerville, G. A. T. Huckle, R. A. Cluff, J. R. Lawson, R. A. Williton and E. Johnston.

St. Lawrence River Charts.—The Marine Department has issued new editions of charts of the St. Lawrence River from Montreal to Sorel; Sorel to Batiscan, and Batiscan to Quebec, corrected to July.

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

Alberta Motor Boat Co., Edmonton, Alta., has delivered a motor boat to Western Spruce Mills Co. to be used in pushing scows of lumber down the Athabasca River for dressing in the company's mill. She is 40 ft. long by 9 ft. beam, equipped with a 45 h.p. Sterling engine.

Canadian Vickers Ltd., Montreal, did the following repair work during June: Elder, Dempster & Co's s.s. Jan, 1,739 tons, docked for survey and undocked June 3; Imperial Oil Ltd. s.s. Royalite, 2,052 tons, docked June 3 for survey and shell damage repairs, owner's repairs and bottom painting, undocked June 6; U.S. Shipping Board's s.s. West Camp-gaw, 5,565 tons, docked June 6 for survey, owner's and voyage repairs, including rebor-ing h.p. cylinder, and bottom painting, undocked June 7; s.s. Cymric Queen, 3,847 tons, docked June 8 for survey and extensive bottom repairs due to ice damage and grounding, consisting of 31 new shell plates, 72 shell plates treated, 25 ft. of center girder renewed, 2 new margin plates, 40 side frames, 17 bottom floors, 60 ft. of side girder repaired or renewed, sundry repairs and bottom painting; Canadian Government Merchant Marine s.s. Canadian Leader, 5,492 tons, docked June 7 for underwriters' and owner's repairs and bottom painting, undocked June 8; Bay Steamship Co's s.s. Poplar Bay, new rudder and rudder tug, and expanding boiler tubes; Anchor-Donaldson Line's s.s. Lakonia, 4,743 tons, voyage repairs; Intercontinental Transports Ltd. s.s. Lisgar County, temporary repairs to side damage and voyage repairs; Mathews Steamship Co's s.s. India, 976 tons, new crank pin brasses; Clarke Steamship Co's s.s. Gaspesia, sundry repairs; Navigazione Triestina Libera's s.s. Timavo, 7,434 tons, voyage repairs; Scandinavian-American Line's s.s. General Konsul Pallisen, 2,130 tons, deck voyage repairs; Norwegian-American Line's s.s. Randsfjord, engine room voyage repairs; Scandinavian-American Line's s.s. Helmer Morch, 2,127 tons, voyage repairs.

Collingwood Shipbuilding Co., Collingwood, Ont.—The Great Lakes Transportation Co's s.s. Matoa, which, as mentioned in our last issue, is being lengthened by 36 ft., at this yard, will have a new keel length of 326½ ft. The new portion will be built with arch construction, in lieu of second deck beams and hold pillars. Doubling plates are being added, for about three-quarters of the length amidships, to spar deck stringer, topside plating and strake of plating next keel port and starboard, to take care of additional stresses due to increased length. There will be two additional cargo hatches, and other minor alterations and repairs will be made.

D'Eon Bros., Yarmouth, N.S., have built a cruising yacht for J. W. Cooper, New York. Her dimensions are,—length 35 ft., breadth 8.4 ft., depth 4 ft. She is equipped with a 14 h.p. double cylinder motor.

Halifax Shipyards Ltd., Halifax, N.S.—The Preston Steam Navigation Co's s.s. Gyp, which was docked May 28, for examination and repairs, was undocked June 15. The work included renewing 17 plates, fairing and replacing 13 plates, fair in place, 4 plates, repairs to floors, intercostals, keelson, etc., removing broken propeller and fitting new one, boilers and engines overhauled, and other miscellaneous work. The following ad-

ditional work was done during June: Canadian National Rys. car ferry Prince Edward Island, annual overhaul of engine and boilers, entailing drawing of 3 tail shafts, remounting stern bushings, repairing rudder, miscellaneous hull repairs, including calking seams, electric-welding rivets and scraping and painting, undocked June 20; Public Works Department's s.s. Tyrian, docked June 21, for annual overhaul, including removing propeller, drawing tail shaft for inspection, repairing rudder pintles and renewing bushings, placing steel chafing strips on each side of hull, calking seams, renewing rivets and scraping and painting, undocked June 26; Tocque & Co's steam trawler Commandant Roquigny, docked June 21, propeller removed, 4 blades straightened and replaced, rudder removed, new stock made and fitted, and a large area of copper sheathing on hull renewed, undocked June 26; Dominion Coal Co's s.s. Kamouraska, docked June 22, for repairs to starboard bow caused by collision, including 6 plates renewed, 2 plates off and 4 plates faired in place, stem removed, faired and replaced, and hawse pipe removed and refitted, undocked June 28; Royal Mail Steam Packet Co's s.s. Chaudiere, docked June 26 for half-yearly overhaul, including miscellaneous rivets and seams calked, sea valves opened for inspection, rudder raised and pintles and bushings repaired, and hull painted, undocked June 28; Dominion Iron & Steel Co's s.s. Haugarland, docked June 28, for painting and inspection, undocked June 30; Imperial Oil Ltd. s.s. Imperoyal, docked June 20, for survey of bottom damage caused by stranding in Strait of Canso while bound from Montreal to Halifax; survey showed 57 plates damaged. After tenders were invited the repair contract was awarded to Halifax Shipyards and the work commenced June 30.

Meteghan Shipbuilding and Marine Ry. Co., Meteghan, N.S., is building two boats to be equipped with auxiliary power, for St. John, N.B. parties. The yard is also busy on repair work to a number of sailing ships.

Newfoundland Dockyards Ltd., St. John's, Nfld., completed the annual survey and overhaul of the s.s. Glencoe and s.s. Senef, in June, and the s.s. Kyle was docked during July for similar treatment. The steamships Portia and Prospero were also expected to be docked shortly thereafter for survey and overhaul, and several other of the Newfoundland Government Coastal Department's ships will also be docked for overhaul and general repairs.

J. J. Robichaud, Meteghan, N.S., is building three boats to be equipped with auxiliary power, for Grand Manan firms, and is rebuilding the schooner Snow Maiden, built there in 1902, and originally named Hains Bros.

Smith and Rhuland, Lunenburg, N.S., launched the schooner I'm alone, July 14. Her dimensions are,—length 138 ft., breadth 27 ft., depth 11 ft. She is being equipped with two 100 h.p. crude oil engines. She has been built for U.S. owners, for freight trade.

Vancouver Shipyards Ltd., Vancouver, B.C., has completed the building of the first full Diesel engined tug built in British Columbia, for Young and Gore. She is 85 ft. long and has an engine of 200 h.p.

Victoria Machinery Depot Co., Victoria, B.C., did the following repair work during June: Canadian Government s.s. Estevan, 1,151 tons, docked, cleaned and painted, hull, deck, engine and boiler repairs, tail shaft drawn for inspection; Canadian Government Merchant Marine s.s. Canadian Transporter, 5,448 tons, docked, cleaned and painted, hull damage and engine repairs; C.P.R. s.s. Princess Maquinna, 1,777 tons, docked, cleaned and painted, renewed damaged propeller blades, hull and deck repairs, tail shaft draft for inspection; C.P.R. s.s. Tees, 679 tons, new smokestack; Central Wharfage Co's s.s. Forager, docked, cleaned and painted, hull repairs; Coastwise Steamship and Barge Co's s.s. Amur, 907 tons, docked, cleaned and painted, hull, deck and engine repairs, new cargo booms, tail shaft drawn for inspection; Consolidated Whaling Corporation's s.s. Gray, engine repairs; and two scows docked, cleaned, painted, new hull planking and calking.

Victoria (B.C.) Shipowners Ltd., Victoria, B.C.—The trustee in bankruptcy acting for this company has obtained judgment for \$5,000 against Cameron Lumber Co., and J. O. Cameron, on account of unpaid shares in Victoria (B.C.) Shipowners Ltd. The claim was for \$17,000, but the judgment declared that the liability was limited by an agreement which stated the amount of shares to be subscribed for was \$5,000 for each ship completed ready for sea, and proportionate payments as progress was made on others. Only one ship was completed under agreement with the Dominion Government.

Dominion Government's Arctic Development Work.—The original plans of the Interior Department's Northwest Territories and Yukon Branch, as stated in Canadian Railway and Marine World for July, have been changed, owing to shipyard strikes in England delaying the alterations necessary to fit the s.s. St. Finbarr, bought recently from the British Admiralty, for Arctic work. On this account, Capt. J. Bernier, who was in England to superintend the work, was instructed to lay up the ship there, and return to Canada, where he resumed command of the s.s. Arctic, and sailed from Quebec for the north, July 9. Apart from this, it is the intention of J. D. Craig, the officer in charge of the expedition, to carry out the plans laid, as far as possible. A number of the Department's technical officers have been included in the expedition for survey and exploration work, and they will remain in the north until next year. If the ice conditions are the same as last year, the plans will, in all probability be carried out. Soon after leaving Quebec, one of the ship's officers fell overboard and was drowned, as was also a member of the crew, who dived to his assistance.

International Waterways Navigation Ltd., Montreal, has been granted supplementary letters patent under the Dominion Companies Act, increasing its capital stock from 660 preference shares of \$100 each, and 1,200 common shares without nominal par value, to 922 preference shares of \$100 each, and 1,560 common shares without nominal or par value, and providing that it shall carry on business with \$100,000. The provision in the act of incorporation creating it a private company has been deleted.

Atlantic and Pacific Oceans.

The Norwegian s.s. O. A. Knudsen, 3,532 tons, laden with coal, was wrecked at St. Marys Bay, Nfld., July 1, and is reported to be a total loss.

The British s.s. Strandhill was libelled at Halifax, N.S., July 4, on claims for wages, amounting to \$5,082.84, and for general ships' supplies delivered.

The British s.s. Lingfield, which sailed from Montreal, July 7, for Venice, returned to port shortly after, having broken her propeller. After having a portion of her cargo removed, she was drydocked at Canadian Vickers' plant for repairs.

The Houston Line's s.s. Hilarius, bound from Montreal to South American ports, was reported ashore in Aulds Cove, Port Hastings, N.S., July 4. It was stated that she was high and dry, and in no immediate danger. She was built at Sunderland, England in 1914.

The North Atlantic ice patrol maintained by the U.S. Government, finished its season's work, July 5, no icebergs being reported south of lat. 40. Two cutters Modoc and Tampa, were maintained in the service, which has been of considerable assistance to steamships on the North Atlantic routes.

The officers and crew of Canadian Robert Dollar Co's s.s. Grace Dollar, will receive decorations from the Chinese Government, and the ship will be presented with a loving cup, for saving the passengers and crew of the Pingan Steamship Co's s.s. Hsin Pao Huo, which caught fire in Chinese waters recently.

Maritime Provinces and Newfoundland.

The Newfoundland Government s.s. Seal while running through heavy ice to the Labrador coast, at the end of June, lost 4 propeller blades, off Snug Harbor. She is under charter to the Newfoundland Government Coastal Department.

The s.s. Pro Patria, owned by La Morue Francaise Secheries de Fecamp of St. Pierre, was fined \$1,000 at North Sydney, N.S., recently, some of her crew having attempted to put five small kegs of rum ashore there. It is stated that an appeal will be made.

The British s.s. Newton stranded at the entrance to Lockport harbor, N.S., in an exposed position, July 6. It was reported that a salvage ship was not available, and that if such service was not forthcoming before a storm arose, it was feared she might become a total loss.

The Bunker Island light, on the end of the reef off the southwest point of Bunker Island, Yarmouth, N.S., will be discontinued and replaced by a tugboat, showing a red flag by day, and a red light by night. During thick or foggy weather, a fog bell will answer signals from ships.

The Mayflower Shipping Co's s.s. Bay Queen, operated by R. W. Hendry Ltd., Halifax, N.S., was reported ashore at Scatteredie, on the Cape Breton coast, July 6. She was built at Levis, Que., in 1917, and was used as a trawler during the war, after which she was converted into a freight ship for the coasting trade.

The French s.s. Bamba, from St. Pierre to France, ran aground in a dense fog, at Gull Point, St. Mary's Bay, Nfld., June 30, and was expected to be a total loss. The crew escaped. She had a net tonnage of 513 and was proceeding to

France with coal as ballast, her general route being between France, Scotland and St. Pierre.

The St. John, N.B., City Council is considering plans for the further development of the harbor. It is stated that a comprehensive plan will probably be developed, but that, in the meantime, attention will be given to the area between Pettinghill wharf and the sugar refinery, plans for which will be submitted to the Dominion Government.

The Newfoundland Shipping & Trading Co., which, as mentioned in our last issue, had been formed to operate a steamship service between St. John's and Montreal, and St. John's and Labrador, is reported to have abandoned the project. It was stated that the s.s. Mons had been chartered for the service, but the advertised sailing, after having been postponed several times, was dropped.

The Royal Mail Steam Packet Co. is reported to have decided to place its s.s. Teviot on the West Indies route temporarily, to replace the wrecked s.s. Caraque, her first trip being scheduled from St. John, N.B., about Aug. 5. She was built at Thornaby, Eng., in 1902, and is screw driven by engine of 234 h.p. Her dimensions are,—length 331.5 ft., breadth 46.2 ft., depth 25.1 ft.; tonnage, 3,271 gross, 2,108 net.

The Royal Mail Steam Packet Co's s.s. Caraque, which ran ashore on the reefs about 12 miles from Hamilton, Bermuda, June 25, was reported, July 3, a total loss. She was built at Belfast, Ireland, in 1894, and was originally named Guelph. Her dimensions were,—length 400.5 ft., breadth 47.3 ft., depth 19 ft.; tonnage, 4,890 gross, 2,975 net. She was equipped with engine of 418 h.p. driving a screw. John Hulbert, the company's representative at Halifax, N.S., is reported to have stated that she will be replaced as soon as possible.

The Intercolonial Navigation Co's s.s. Advance, operated between Halifax, St. John's, Nfld., and Boston, Mass., ran ashore on Shut In Island, near Halifax harbor entrance, during a dense fog, July 2, and broke in two, becoming a total loss. Her 65 passengers and crew of 55, were taken off by tugs about four hours after she struck. She was built at Chester, Pa., in 1883, and was 2,528 tons gross. She was owned formerly by the Panama Rd., was operated for a number of years between Panama and New

York, and was bought this year by the Intercolonial Navigation Co. for its service.

Province of Quebec.

The Three Rivers City Council is seeking authority to borrow \$115,000 on bonds redeemable in 20 years, to pay capital and interest, amounting to \$90,640 and \$23,360, respectively, in respect of the city's guarantee of Three Rivers Shipyards Ltd. bonds, which company is bankrupt.

Cross actions have been entered in the Admiralty Division of the Exchequer Court at Montreal, by the Ulster Steamship Co. (Head Line) for \$50,000, and the Kamouraska Shipping Co. (Dominion Coal Co.) for \$25,000, for damages sustained by their respective ships Fanad Head and Kamouraska, in a collision in the St. Lawrence River, near Bic, Que.

The Dominion Government s.s. Eureka, has been sold to Sincennes-McNaughton Line, Montreal. She was built at Glasgow, Scotland, in 1893, and is screw driven, by engine of 60 h.p. Her dimensions are,—length 94.7 ft., breadth 22 ft., depth 11.9 ft., tonnage 170 gross, 70 net. She was operated by the Marine Department.

Work was commenced, July 10, on the extension of the shore wall between secs. 27 and 30, Montreal harbor, by Atlas Construction Co., whose tender of \$275,000 was accepted early in the month. The building of a machine shop in the yards on Notre Dame St., to replace the building on the Mackay pier, which was burnt last year, has also been commenced by Quinlan, Robertson & Janin Ltd. A carpenter shop has been completed on the Mackay pier. Tenders were received during July for the construction of an office building on Victoria pier, for the staffs of the outside departments, including the police, shed superintendent, inspector of roads, timekeepers, outside engineers, and a plumbing and tinsmithing shop. The building will be 3 stories high, located in front of shed 16, and is expected to be completed by the end of the year.

Ontario and the Great Lakes.

The Ontario Gravel Freighting Co., Windsor, Ont., s.s. Crawford has had her name changed to Thomas A. Tees.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during June:

Articles	Canadian Canal	U.S. Canal	Total
Lumber	6,814	27,057	33,871
Flour	578,500	502,220	1,080,720
Wheat	2,677,367	22,828,332	25,505,699
Grain, other than wheat.....	3,619,980	7,661,275	11,281,255
Copper	1,639	8,453	10,092
Iron Ore	6,384	9,216,338	9,222,722
Pig Iron	2,178	2,775	4,953
Stone	600	1,360	1,960
General Merchandise.....	1,309	5,961	7,270
Passengers	2,611	1,550	4,161
Coal, Soft	22,700	2,705,037	2,727,737
Coal, Hard .....	.....	296,138	296,138
Iron Ore .....	.....	44,404	44,404
Manufactured Iron and Steel	9,291	5,378	14,669
Salt	1,332	10,887	12,219
Oil	2,378	20,125	22,503
Stone .....	.....	115,553	115,553
General Merchandise.....	32,990	48,511	81,501
Passengers	2,629	1,932	4,561
Summary			
Vessel Passages.....	532	2,717	3,249
Registered Tonnage.....	875,764	9,193,770	10,069,534
Freight—Eastbound	232,721	10,202,478	10,435,199
Westbound	68,691	3,246,033	3,314,724
Total Freight.....	301,412	13,448,511	13,749,923

The Dominion Public Works Department has transferred the license to operate a ferry across the St. Clair River, between Courtright, Ont., and St. Clair, Mich., from F. Currier, St. Clair, to J. A. Miller, Jr., Marine City, Mich.

The Lakes & Ocean Navigation Co., of which W. Hansen, Bergen, Norway, is President, is reported to have decided to place about 15 steamships in operation between Great Lakes ports and Great Britain, Norway and other European ports, via the Welland Canal and St. Lawrence River.

The Peninsula & Northern Navigation Co. is reported to have been organized to operate the s.s. United States between Port Arthur and Houghton, Mich., as an automobile ferry, connecting the Port Arthur and Duluth highways. She is a new ship, 257 ft. long by 41 ft beam, and capable of a speed of 18 miles an hour.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for June, as follows: Superior, 607.67; Michigan and Huron, 579.86; St. Clair, 574.71; Erie, 572.02; Ontario, 245.93. Compared with the average June levels for the past 10 years, Superior was 0.76 ft. below; Michigan and Huron, 1.09 ft. below; Erie, 1 ft. below, and Ontario 0.95 ft. below.

During this navigation season, the U.S. Government dredge Gaillard will be working in the Bayfield channel, in the upper end of Little Rapids cut, in the St. Mary River. Masters of ships should slacken speed in passing, and take every precaution against accident, or interference, particularly during operations at the turn at light 27 they should give downbound ships plenty of room, and avoid forcing them close to the dredge. Dump scows and tugs will be passing from dredge to dumping grounds across the channel below the locks throughout the season, and in view of their slow speed and awkward maneuver, every consideration should be given them in passing.

Manitoba, Saskatchewan, Alberta and Northwest Territories.

The Hudson's Bay Co's s.s. Nascopie sailed from Montreal, July 14, on her annual trip to Arctic points, and was followed towards the end of the month by the company's s.s. Bayeskimo. The Nascopie's destination is Pond's Inlet, Baffin Land; the Bayeskimo will go to James Bay.

The projected inspection trip of a number of business men, from Montreal, to Hudson Bay points, which was being organized in Winnipeg, and for which it was proposed to charter the C.P.R. s.s. Montreal, has been cancelled, owing, it is stated, to the small number who made reservations. The intention was to make up a party of about 300, to obtain first hand information as to the possibilities of Port Nelson and Fort Churchill, and the development of the Hudson Bay route generally, for the benefit of the western provinces.

British Columbia and Pacific Coast.

The C.P.R. s.s. Princess Charlotte sailed from Vancouver, July 25, for Alaska, on a special summer cruise, following the usual course and making the usual ports of call.

The Puget Sound Navigation Co. has placed the s.s. Comanche in service as an

automobile ferry between Port Angeles, Wash., and Victoria, B.C. She has accommodation for about 30 cars, and is making three round trips a week.

A recent survey by the Marine Department Hydrographic Survey shows the existence of a shoal patch, about 2 cables wide, extending $3\frac{1}{2}$ cables southward from Low Rock, Esperanza Inlet, Vancouver Island, with a least depth of 6 ft. at low water.

The Hudson's Bay Co. is reported to have been granted exclusive rights, by the Russian soviet government, to trade on the north Siberian coast, and it is said that four U.S. trading schooners were detained at East Cape, Siberia, recently, under the agreement.

The Union Steamship Co. of British Columbia's s.s. Cardena, the arrival of which, from Great Britain, was announced in our last issue, was placed on a weekly service, early in July, between Vancouver, Ocean Falls, Swanson Bay, Prince Rupert, Anyox and Alice Arm.

The C.P.R. automobile ferry Motor Princess was compelled to use the landing slip at Saanichton, during July, owing to extremely low water at Sidney. It is stated that the Government will shortly undertake extensive dredging at Sidney, to deepen the approaches to the landing stage.

The Pacific Salvage Co. has completed the salvage of the cargo, consisting of steel rails, glass, etc., from the Prince Line's s.s. Tuscan Prince, which was wrecked at Austin Island, Barkley Sound, in February, and which became a total loss. The chief items of the cargo, which has been landed at Victoria by the salvage tug Salvor, are 300 tons of 75 lb. and 300 tons of lighter steel rails, 3,000 cases of window glass, and 50 cases of plate glass.

The Royal Mail Steam Packet Co's 84th annual report, for 1922, shows that the company and its affiliated lines control shipping aggregating 2,153,086 tons, the company owning directly approximately 380,000 gross tons. The report deals with reciprocal exemption from income tax by different shipping countries, as proposed by the British Government, and also the difficulties created by U.S. prohibitory laws, expressing the wish that the long established practice by which the laws of the flag under which the ship sails, be allowed to continue, whether the ship is on the high seas, or in territorial waters of any other nation.

North Vancouver Drydock.—In connection with the changes to be made in the drydock and plant to be built at North Vancouver, B.C., by Burrard Dry Dock Co., of which mention was made in a previous issue, we are officially advised that the changes do not affect the drydock proper, but only the appurtenant works, and the amount of the subsidy to be paid by the Government will not be varied thereby. In view of the delay in commencing construction, the time fixed for the completion of the drydock has been extended from Dec. 22, 1923, to March 29, 1925.

Inland Water Freight Rates Act Enforcement.—An Ottawa press dispatch states that the Minister of Trade and Commerce has detailed G. S. Wrong, B.Sc., Chief of the Dominion Bureau of Statistics, Transportation Branch, to supervise the whole carrying business on the Great Lakes, and that he will travel between all the grain shipping ports.

Mainly About Marine People.

Garnet W. Cox, Assistant Treasurer and Accountant, Port Arthur Shipbuilding Co., aged 40, died suddenly from heart failure, while at work, at Port Arthur, Ont., July 12.

Capt. Robert Foote, commodore of the Northern Navigation Co's fleet, has retired from active service, and left Sarnia, July 12, for Fergus, Ont., where he will reside. He has served 54 years on the Great Lakes, his first position as captain being on the s.s. Atlantic, sailing out of Collingwood in 1884. He was in Northern Navigation Co's service for about 40 years, having first been captain of the s.s. Huronic, and when the s.s. Hamonic was built, he was given charge of her, and later transferred to the s.s. Noronic, the company's largest ship. In 1870, he was one of the crew of the sailing ship Snowbird, which took supplies from Collingwood to Thunder Bay, for Sir Garnet Wolseley's column, in connection with the first Riel rebellion. At that time there was no dock or landing place provided at Thunder Bay, freight being merely unloaded and piled on the shore.

Miss Dorothy Henry, youngest daughter of Thomas Henry, Superintendent, Hotel Department, Canada Steamship Lines, Montreal, died there July 1, of meningitis.

Robert H. McBride, who died at the Western Hospital, Toronto, July 23, following an operation, was Treasurer of the Niagara Navigation Co. from its inception until it was acquired by the Richelieu and Ontario Navigation Co. in 1912, since when he lived a more or less retired life in Toronto. He was born at London, Ont., in 1844, and prior to entering Niagara Navigation Co's service, was private secretary to the late Sir Frank Smith, who was President of that company for many years.

Hcn. E. V. D. Parr, for many years Managing Director, Mackinnon, Mackenzie & Co., Hong Kong, China, representing the Peninsular & Oriental Steam Navigation Co. and the British India Steam Navigation Co., there, and also a member of the Hong Kong Legislative Council for five years, has retired from active service. He arrived at Victoria, B.C., July 2, by the C.P.R. s.s. Empress of Russia, on his way to England.

Advances to Montreal Harbor Commissioners.—The Dominion Parliament has passed an act to provide for further advances to the Montreal Harbor Commissioners, not to exceed \$10,000,000, for the construction of additional terminal facilities, as are necessary to equip the port properly, plans and estimates for which have already been approved by the Dominion Government, and also to authorize the commissioners to issue 25-year debentures at 5% to cover the loans as made.

Public Works Marine Contracts.—The Dominion Public Works Department awarded contracts as follows: June 20, dredging basin at Riviere du Loup, Que., to Lachance Ltd., Quebec, Que., class A at \$2.50 a cub. yd., class B at 34c a cub. yd., scow measure; June 23, renewal of 182 ft. of revetment wall at McGregors Creek, Chatham, Ont., to Wm. Bermingham, Kingston, Ont., at unit prices; June 28, superstructure of timber pile work wharf at Blind River, Ont., to T. P. Charleson, Ottawa, Ont., at unit prices.

Montreal Harbor Development.

In connection with Dominion Parliament's recent sanction of an advance of \$10,000,000 to the Montreal Harbor Commissioners, for dock development, Dr. W. L. McDougald, President, is reported to have stated that the project includes the extension of the handling and storage capacity of elevator B at Windmill Point, taken over recently from Canadian National Rys., and the provision of four additional loading berths there, as well, the reconstruction of the existing wharves and deepening of the basin; provision of extensive wharfage and railway connection for the elevator under construction on Tarte pier; the building of about 3,000 lin. ft. of additional high level wharves, and incidental dredging and reclamation work, as well as transit sheds and railway connections; extension of the transit sheds on the three main piers in the central harbor necessitated by its extension; electrification of the harbor railway system from Victoria Pier to McGill St., with additions to the power house and traction equipment, and the extension of power transmission lines and lighting circuits; the continuance of work already under way, including the extension of the Bickerdike pier, and some dredging, construction of industrial wharves, paving, etc. These works will be taken up at the most suitable times, and detailed specifications and plans will be submitted to the Dominion Government for approval and authorization before being proceeded with. During last year the Alexandria, King Edward and Jacques Cartier piers were extended to the pierhead line, about 200 ft. being added to each, thus permitting the berthing along each pier of two of the largest ships trading into the port. About 1,600 ft. of high level shore wharfage was also completed at sections 27 to 30, also an extension of a wharf at Montreal East, giving additional berthage of 500 ft. The marine pier jetty, with a system of steel and concrete fireproof construction galleries with belt conveyors for loading grain to ships, was completed and the quay walls were extended to a total of 5,838 lin. ft.

Welland Ship Canal Construction.—

The Minister of Railways and Canals gave the following information in the House of Commons, recently, in answer to questions. Up to April 30, 1923, \$34,813,512.84 had been spent, the percentages of principal items of work completed being as follows: earth excavation, 48%; watertight embankment, 60%; reinforced steel, 40%; rock excavation, 31%; concrete, all classes, 31%. The work is being done by contract, and the Government will in future allow tenderers to use their own plants on contracts. The upper entrance and guard lock will probably be placed under contract this year. It is hoped that, if annual appropriations necessary to economical construction are voted by Parliaments, and no serious interruptions are encountered, the canal will be completed by 1927.

Avery-Kernahan Shipping Co. Ltd. has been incorporated under the British Columbia Companies Act with \$25,000 authorized capital and office at Vancouver, B.C., to take over the shipping business conducted by Avery Kernahan Ltd., and to own and operate ships and act as commission and shipping agents.

Port Colborne, Ont., Dominion Government elevator received 9,052,511 bush. of grain during June.

Quebec Grain Receipts and Exports.

The Minister of Marine gave the following information, at the House of Commons's last session, as to the number of bushels of grain received at the public elevator at Quebec, Que., and exported from that port, from 1914 to 1922:

Year	Wheat received	Wheat exported	Other grains received	Other grains exported
1914.....	75,174	Nil	639,556	Nil
1915.....	2,519	Nil	264,739	Nil
1916.....	1,162,066	1,137,461	913,612	638,742
1917.....	9,764	Nil	941,277	Nil
1918.....	3,257,368	2,936,104	2,365,860	1,255,260
1919.....	3,943,393	3,606,563	249,430	69,352
1920.....	113,780	513,028	337,006	Nil
1921.....	1,265,967	1,243,285	4,345,277	2,838,893
1922.....	2,009,207	1,810,911	1,666,133	138,723

Harbor Commissioners' Yacht.—The Toronto Harbor Commissioners have sold the s.s. Bethalma to the Montreal Harbor Commissioners for \$25,000, for inspection trips round the harbor and to relieve the steam tug Sir Hugh Allan. The Bethalma was built at Wilmington, Del., in 1899, and was originally named Surprise. She has a steel hull, of the following chief dimensions,—length 110.3 ft., breadth 16.4 ft., depth 10.2 ft.; tonnage, 113 gross, 52 net. She is screw driven by engine of 31 h.p. It is stated that she originally cost about \$75,000, and she was used during the war as a patrol boat on the St. Lawrence, by the British Government, which is reported to have paid her then owner about \$40,000 for compensation for damage sustained in the service. She was bought in 1919 by the Toronto Harbor Commissioners, from A. E. Mathews, Toronto, for \$7,000, and some \$16,000 is said to have been spent on her in alterations and repairs.

Trade via Canadian Ports.—The Canadian Manufacturers' Association passed the following resolution at its annual meeting in Toronto, recently: Whereas Canada has splendid harbors, equipped with adequate facilities for handling traffic on both the Atlantic and Pacific, coupled with a complete system of rail and water transportation, representing a large investment of Canadian money, which should be utilized to the greatest extent; therefore be it resolved that the Canadian Manufacturers' Association in annual general meeting assembled, respectfully urge its members to route, as far as possible, all traffic in which they are interested, whether for export or import, via Canadian ports.

Tax on Ships' Profits.—The British House of Commons, while considering the Finance Bill recently unanimously adopted a new clause to provide relief from income tax on the profits of any shipping company, which are chargeable with income tax in any foreign country, provided that reciprocal exceptions have been agreed to by the foreign countries concerned. It was explained that the proposal was new in financial legislation, but the Government was desirous of getting rid of a troublesome double taxation, and a start was being made with the shipping business. The scheme would be worked out by an order in council, after a treaty with a foreign country had been concluded.

The s.s. **John C. Howard**, built for George Hall Coal and Shipping Corporation, at Three Rivers, Que., which was illustrated in Canadian Railway and Marine World for July, pg. 357, was mentioned as being 230 ft. long between perpendiculars, instead of 250 ft.

Canadian Government Merchant Marine Operations, Etc.

Officers of Steamships.—The following changes in captains have been made since those mentioned in our last issue, —Canadian Sailor, Capt. W. E. Redfern; Canadian Victor, Capt. W. J. Davies.

Ships for Cattle Trade.—The steamships Canadian Explorer, Canadian Leader, Canadian Mariner and Canadian Victor have been fitted up at Montreal, for the transportation of about 208 cattle in each. They will load at either Montreal or Quebec, one port only per ship, for Cardiff, Wales, and will maintain a fortnightly service.

Retaining Wall Break in Welland Canal.

A serious interruption was caused to navigation through the Welland Canal by a break in the retaining wall just below lock 23, July 18, when a small hole opened up. This was repaired immediately, and navigation was resumed July 19, after a delay of about 20 hours. On the following day, the wall gave way again, and navigation was suspended at noon July 20, for the making of permanent repairs. This was started at once and interlocking sheet piling was driven in and the whole faced with concrete. The work was continued without intermission, and navigation was resumed at noon, July 23, when 55 ships were awaiting passage through the locks. This is stated to be the first time in the history of the canal that it has been necessary to close down for a repair of this nature. It has been estimated that the suspension of traffic cost the navigation companies about \$25,000 a day, apart from the delay caused to the upper lake ships which were held at Port Colborne, owing to their not being able to unload in consequence of the elevator capacity all being taken up.

Welland Canal Traffic.—A St. Catharines, Ont., press dispatch: Freight traffic through the Welland Canal in June was 115,444 tons more than in June 1922. The total tonnage to June 30 this year was 26,920 tons less than same period in 1922, when navigation opened on April 17, while this year it did not open till April 25. The total tonnage of ships passing through the canal in June was 550,471, an increase of 115,928 over June, 1922. Of this 449,768 tons was represented by Canadian steamships, an increase of 138,874 over 1922. Canadian sailing ships represented 36,040 tons, a decrease of 14,279 tons over 1922. United States sailing vessels had a tonnage of only 4,905.

Grain Shipments from Fort William and Port Arthur.—Fort William press dispatch, July 15.—From the opening of navigation this spring up to July 7, 345 grain ships have cleared from these ports, carrying grain, as compared to approximately 250 within the same period last year. By far the largest part of the grain was wheat, of which 48,548,370 bush. were shipped. Fully one-third went to Buffalo and other U.S. points, 14,738-947 bush. going to Buffalo, and 1,001,665 bush. to other U.S. points. Of the remaining two-thirds, 1,801,922 bush. were shipped to Montreal, and 31,005,836 bush. went to Canadian lower lake ports.

The Inland Water Freight Rates Act, 1923.

As this act, passed at the Dominion Parliament's recent session, is of great importance to navigation companies' officials, etc., it is given in full as follows:

1. This Act may be cited as The Inland Water Freight Rates Act, 1923.

2. In this act, unless the context otherwise requires,—(a) "Board of Grain Commissioners for Canada" means the Commission constituted by The Canada Grain Act, chap. 27 of the statutes of 1912, and "Board" means the Board of Grain Commissioners for Canada as so constituted. (b) "Department" means the Department of Trade and Commerce. (c) "Grain" means and includes all kinds and varieties of grain, the inspection of which is provided for by The Canada Grain Act and its amendments. (d) "Lake and river navigation" includes all the rivers, lakes and other navigable waters within Canada. (e) "Minister" means the Minister of Trade and Commerce. (f) "Person" means any person, firm or corporation. (g) "Regulations" means regulations made by the Board under the authority of this act. (h) "Shipping company" means any person, firm or company who carries, or offers, advertises or proposes to carry grain between any ports in Canada or between any ports in Canada and the United States. (i) "Shipowner" means the registered owner of a ship or any share in a ship, and includes the lessee or charterer of any vessel having the control of the navigation thereof. (j) "Vessel broker" means a person engaged or acting as agent in chartering any vessel or contracting for cargo space for the carriage of grain by water.

3. Any shipping company or any shipowner or person who carries or who offers, advertises or proposes to carry grain for hire between Fort William, or Port Arthur and any other port or place in Canada or the United States, by lake or river navigation, shall, within 30 days after the passing of this act, or before entering into any contract for such carriage, file with the Board of Grain Commissioners for Canada a tariff of the rates which such company, owner or person charges or intends or proposes to charge for the carriage of grain as aforesaid, and thereafter from time to time if and when any such company, owner or person, changes, varies or proposes to change or vary the tariff or any item or charge thereof so filed, he shall, previously to the making of any such change or variation in the actual charges in respect of any shipment, file with the Board a copy of the tariff so changed, varied, or amended; and any such company, owner or person who fails or neglects so to file any such tariff within 30 days after the passing of this act, or before entering into any such contract, or to file with the Board notice in writing of any variation or change in any tariff so filed or subsequently filed by him, or who charges, contracts or stipulates or receives for the carriage of grain between Fort William or Port Arthur and any other port or place in Canada or the United States by lake or river navigation, any toll, charge or rate in excess of that shown by a tariff which has been so filed by him with the Board, or in excess of the tariff last notified by him to the Board as aforesaid, shall be guilty of an offence and liable therefor to a penalty not exceeding \$2,000 and not less than \$500, or to imprisonment

for a term not exceeding 6 months, enforceable and recoverable upon indictment, or upon summary conviction before any stipendiary or police magistrate having the jurisdiction of two justices of the peace, and moreover shall be disentitled to recover or to assert any remedy for the recovery of any freight for which he shall have stipulated at a rate in excess of that which shall have been notified to the Board in the manner aforesaid.

4. It shall be the duty of the Board to receive and tabulate all such tariffs and rates as may be filed with the Board as aforesaid, and moreover, to ascertain by all available means, the rates of freight which prevail or are exacted or required for the carriage of grain from Fort William or Port Arthur to any of the ports or places aforesaid, and to consider and report to the Minister of Trade and Commerce from time to time any facts which may come to the knowledge of the Board and which tend to show that there is a deficiency of cargo space, excessive freight charges, or discrimination in rates with respect to the carriage of grain as aforesaid, and all shipowners and other persons engaged in the grain carrying trade in Canada shall, upon reasonable request, immediately furnish to the Board such information as they may possess relating to any of the matters aforesaid, and shall for any wilful refusal or neglect to furnish the same be liable to a penalty recoverable upon summary conviction not exceeding \$1,000 and not less than \$200 for each such offence.

5. When in the opinion of the Board the toll, charge or rate which any company, owner or person charges or intends or proposes to charge for the carriage of grain as aforesaid is unreasonable or excessive, or amounts to an unjust discrimination against any person, company or class of persons as compared with the tolls or rates for similar traffic between Canadian and United States ports, or between one port and another in either of said countries, the Board may prescribe such maximum rates as it may consider reasonable; such maximum rates so prescribed may vary or be limited in their application according to the time or season of shipping, and the Board shall indicate in its order fixing such maximum rates whether the same are to prevail until further order or the period or periods during which they are respectively to prevail; the Board may also provide for the variation of such rates conditionally, having regard to conditions to be specified in its order, and the Board shall in like manner from time to time as it may consider necessary or advisable reconsider and vary or modify any order made by the Board in the premises. Any company, owner or person who charges, contracts or stipulates or receives any toll, charge or rate in excess of the maximum rates so fixed by the Board shall be guilty of an offence and liable therefor to a penalty not exceeding \$2,000 and not less than \$500, or to imprisonment for a term not exceeding 6 months, enforceable and recoverable upon indictment or upon summary conviction before any stipendiary or police magistrate having the jurisdiction of two justices of the peace, and moreover shall be disentitled to recover or to assert any remedy for the recovery of any freight

for which he shall have stipulated or charged at a rate in excess of the maximum rates so fixed as aforesaid.

6. Every one who is a vessel broker or person engaged or acting as agent or otherwise in the chartering of any vessel or in contracting for the hire or letting of cargo space for the carriage of grain from Fort William or Port Arthur to any port or place in Canada or in the United States by lake or river navigation shall post up, or cause to be posted up, at or before the hour of 10 o'clock in the forenoon of each day during which the Winnipeg Grain Exchange and the office of The Board of Grain Commissioners, Fort William, are open for business, and shall keep posted during the day for general inspection in a conspicuous place in the said Exchange and in the office of the Board of Grain Commissioners at Fort William, a statement in print or writing showing in detail the cargo space, time for shipment and destination for carriage of all grain for the carriage of which from Fort William or Port Arthur to any other port or place in Canada or in the United States of America by lake or river navigation he has contracted or entered into any charter on the day last preceding, or, if the day last preceding be Sunday or a holiday, during the two days last preceding.

7. It shall be unlawful for any person who is a vessel broker or person engaged or acting as agent or otherwise in the chartering of any vessel or in contracting for the hire or letting of cargo space for the carriage of grain from Fort William or Port Arthur to any other port or place in Canada or in the United States of America by lake or river navigation to solicit any risk, or to issue or deliver any receipt or policy of insurance, or to collect or receive any premium in whole or in part, or to inspect any risk, or to adjust any loss, upon, for or in connection with any consignment of grain so to be carried.

8. Every one who contravenes any provision of sections six and seven of this act or who fails or neglects to comply with any of the provisions thereof to which he is subject, shall be guilty of an offence and liable therefor to a penalty not exceeding \$1,000 and not less than \$100, or to imprisonment for a term not exceeding 3 months; or, if a corporation, shall be liable to a penalty not exceeding \$3,000, and not less than \$500; and any such offence may be prosecuted and the penalty therefor enforced or recovered either upon indictment or upon summary conviction before any police, stipendiary or other magistrate having the jurisdiction of two justices of the peace.

9. This act is intended to regulate the shipping rates of grain transported for interprovincial, foreign or export trade, and accordingly shall not apply to grain carried locally to be ground or consumed in the province in which the shipment originates, but the burden of proof that any shipment of grain is within this exception shall rest upon the carrier.

Atlantic Steamship Co. Ltd., has been granted supplementary letters patent, decreasing its capital stock from 2,000 shares, without nominal or par value, to 1,000 shares, without nominal or par value, by the cancellation of 1,000 unsold shares, provided that the amount with which the company shall carry on business shall be \$5,000.

Cattle Shipments to Great Britain.

The cattle shipments through Montreal, to Great Britain, to June 30, were 11,657, against 10,728 for the same period of 1922. The St. Lawrence navigation season opened nine days later this year than last.

We are officially advised that Canadian Government Merchant Marine has had the steamships Canadian Explorer, Canadian Leader, Canadian Mariner and Canadian Victor fitted up for the transportation of 208 cattle on each, the work being done in Montreal. Cattle will be shipped at either Montreal or Quebec, one port only per ship, for Cardiff, Wales, and will be carried from those ports during the St. Lawrence navigation season, and probably all the year round from other ports. The s.s. Canadian Leader sailed from Montreal, June 15, for Quebec, where she took on cattle, sailing thence, for Cardiff, June 16. These four ships will maintain a fortnightly service.

Canadian Railway and Marine World for July gave some details of the facilities provided at Quebec for handling cattle there, since when the Harbor Commission's secretary-treasurer has written us as follows: The Quebec Harbor Commissioners have installed, in shed 27, a feeding and loading station for export of cattle. The advantages of shipping through this port may be summarized, as follows: Quebec is 214 miles nearer Winnipeg, by the National Transcontinental Ry., than Montreal is by other lines. The average time from Winnipeg to Montreal is from 96 to 100 hours, and on May 26, 572 cattle were carried from Winnipeg to Quebec in 79 hrs, 40 min., including two stops of 5 hrs. for feeding and rest. The cattle are unloaded direct from the cars to the sheds on the docks, without having to pass through congested terminals, thus avoiding yard switching, which is hard on the cattle. They are then put direct on board ship, without being excited, minimizing handling and shrinkage in weight. The cattle station is on a pier, and the doors can always be opened on both sides of the shed. The general temperature at Quebec is about 10 deg. lower than at Montreal, and after the cattle are loaded it takes about 4 hrs. to reach salt water. The National Transcontinental route is an ideal one for the transportation of cattle, being straighter and with easier grades, as well as cooler and less congested, and it has been estimated that by the use of this route and the port of Quebec, 25 to 30 lb. a head on the weight of the cattle can

be saved, to the great benefit of the cattle men. About 2,000 cattle have been shipped through Quebec this season, on four ships, a fair proportion being from Ontario, and it is expected that there will be a considerable movement of cattle through the port during the balance of the season.

The s.s. St. Mihiel, owned by Maple Shipping Co., Toronto, was offered for sale at Toronto, recently, under an order of the Exchequer Court of Canada, Toronto Admiralty District. No bid was received. She is at present lying at a French port. She was built by the Dominion Shipbuilding Co., Toronto, in 1918 and is of the Frederickstadt type, Welland canal size, single deck steel bulk freight steamship, classed at Lloyd's plus 100 A1 for ocean service. Her dimensions are, — length over all 261 ft., length b.p. 251 ft. 2 in., breadth moulded 43 ft. 7 in., depth moulded 28 ft. 3 in., draft loaded 24 ft. 3 in., tonnage 2,742 gross, 1,670 net. She is equipped with triple expansion surface condensing engines with cylinders 20, 33½ and 54½ in. diam. by 40 in. stroke, supplied with steam by two Scotch marine boilers at 180 lb. under natural draft. The ship with her tackle apparel, furniture and appurtenances were offered subject to any existing engagements of charter and to a reserved bid fixed by the local judge in Admiralty.

Compensation for Crews of Wrecked Steamships.—The Minister of Labor is reported to have stated in the British House of Commons, recently, in answer to questions, that under the Unemployment Insurance Act of 1920, sec. 83, an insured contributor is disqualified while resident, temporarily, or permanently, outside of the United Kingdom, but, in regard to the crew of the C.P.R. s.s. Marvale, which was wrecked off the Newfoundland coast, May 20, he might have power, under sec. 39, to make a special order, which point would be considered. The President of the Board of Trade is reported to have stated that the crew had been paid their wages up to the time of the wreck, and the Government had no power to compel the company to pay beyond this.

Preston-Mann Towing Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$100,000 authorized capital, and office at Vancouver, to take over the steam tug Robert Preston, and to carry on a general towing and carrying business.

Montreal Grain Elevators.—The Minister of Marine stated in the House of Commons recently, in reply to a question by G. G. Coote, Macleod, Alta., that the Montreal Harbor Commissioners had bought the G.T.R. elevator there, from the Canadian National Ry., but that the price had not been determined. Its storage capacity is 2,150,000 bush. The total storage of other elevators owned by Montreal Harbor Commissioners is 6,662,000 bush. The total cost of them at Dec. 31, 1922, was \$6,841,665.20.

Transportation Meetings, Etc., in 1923.

The names of persons given below are those of the secretaries, unless stated otherwise:—

September.—Travelling Engineers' Association, Chicago, Ill. W. O. Thompson, 1177 East 98th Street, Cleveland, Ohio.

Sept. 4 to 6.—American Railway Association, Division 5—Mechanical, Equipment Painting Section, Hollenden Hotel, Cleveland, Ohio. V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

Sept. 4 to 7.—International Railway General Foreman's Association, Chicago, Ill. W. Hall, 1061 West Wabash Ave., Winona, Minn.

Sept. 17.—American Association of Passenger Traffic Officers, Montreal. W. C. Hope, Central Rd. of New Jersey, 143 Liberty Street, New York, N.Y.

Sept. 18 to 20.—Roadmasters' and Maintenance of Way Association, Chicago, Ill. P. J. McAndrews, Chicago & Northwestern Ry., Sterling, Ill.

Oct. 8 to 12.—American Electric Railway Association, Atlantic City, N.J. J. W. Welsh, 8 West 40th Street, New York, N.Y.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

Dec. 10 to 12.—American Association of Port Authorities, New Orleans, La. T. S. McChesney, New Orleans.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities.—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Bureau of Explosives.—A. H. McMullen, Inspector, lines east of Port Arthur, 354 New Union Station, Toronto.—D. W. McNabb, Inspector, lines west of Port Arthur, C.P.R. station, Winnipeg.

Canadian Car Demurrage Bureau, Eastern Lines.—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines.—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Electric Railway Association.—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association.—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Industrial Traffic League.—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association.—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

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Automatic Steam Towing Machines, Ship Windlasses, Cargo and Deck Winches, Steam Capstans, Dock Gypsies, Steering Engines, Hydraulic Hoists, etc.

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Canadian Railway Board of Adjustment No. 1—
R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rush-
brooke St., Montreal. Meetings at Montreal 2nd
Tuesday, each month, except June, July and
August, at 8.30 p.m.

Canadian Ticket Agents' Association—E. de la
Hooke, London, Ont.

Dominion Marine Association—F. King, K.C.,
Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange,
9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—E. B. Wolsey, 84
King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith,
176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N.
Ham, 187 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Com-
mittee—A. E. Storey, 310 Canadian National Rys.
General Office, Montreal.

Hydro Electric Railway Association of Ontario—
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Canada Machinery Corporation.—T. H.
Watson, President, sailed from Quebec,
on July 5, for England, accompanied by
his wife and daughter.

Canadian Ingersoll-Rand Co., Sher-
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describing the latest design of double
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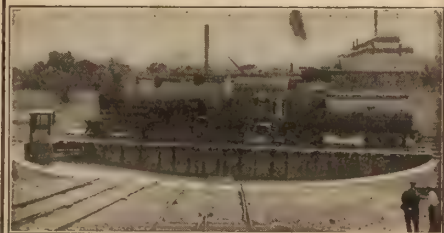
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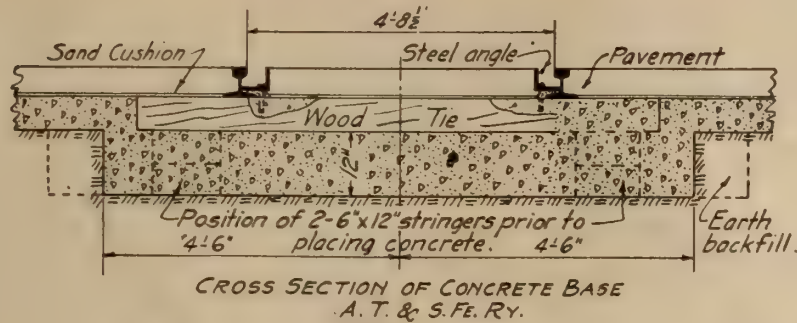
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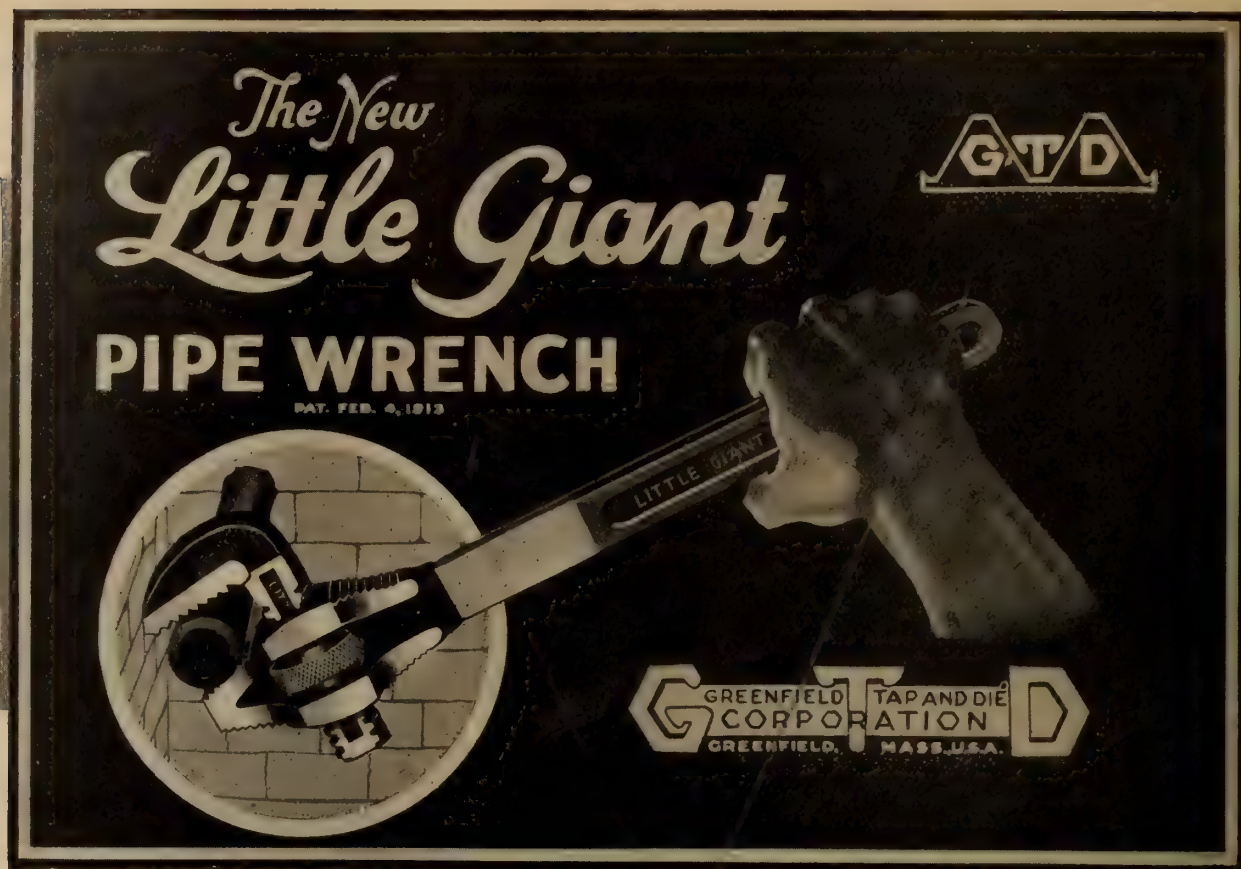
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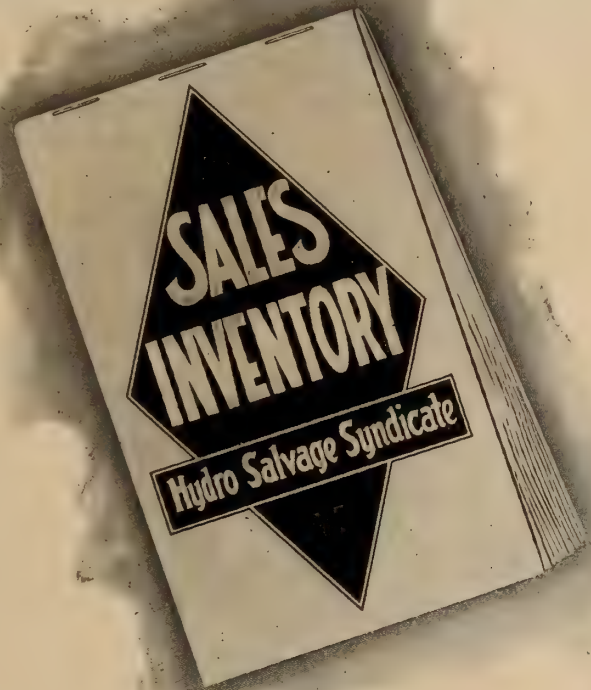
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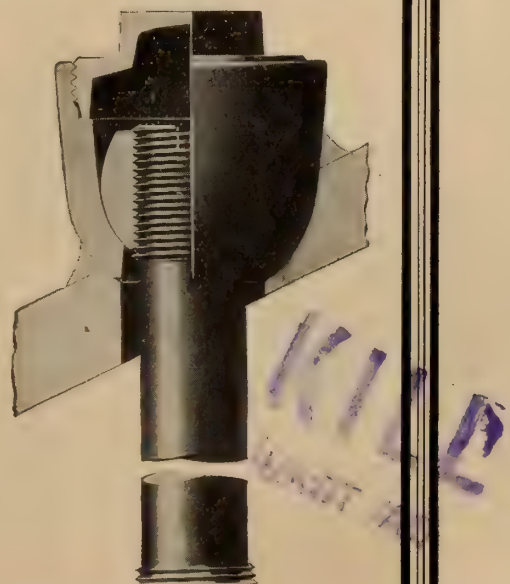
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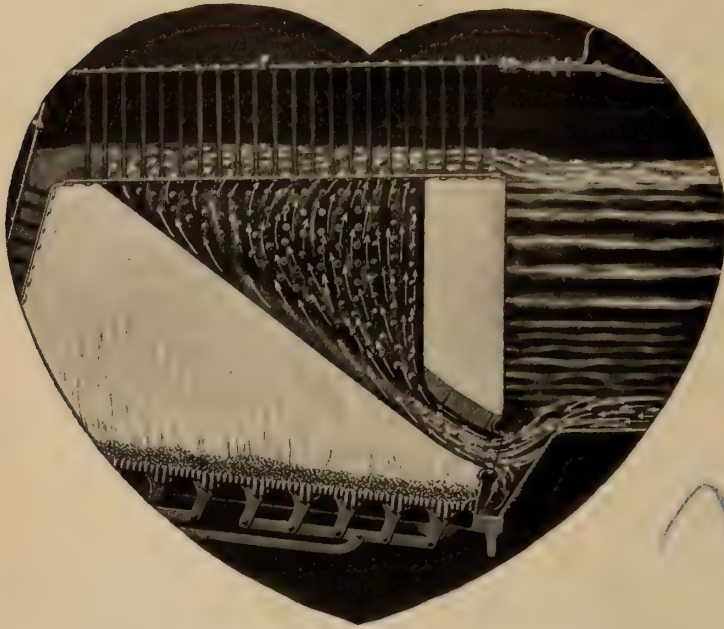
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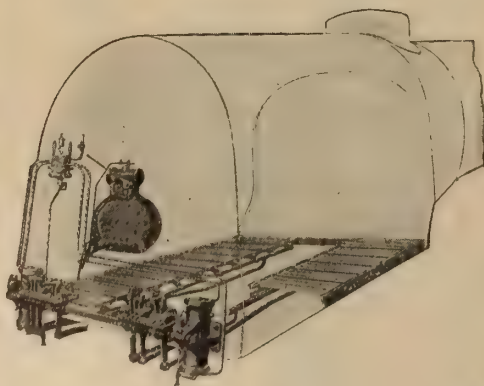
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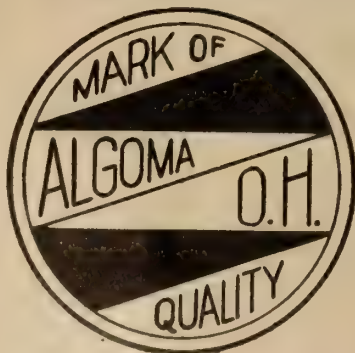
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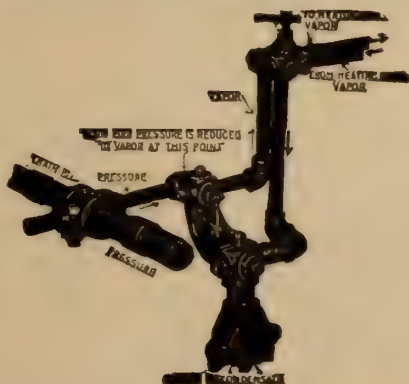
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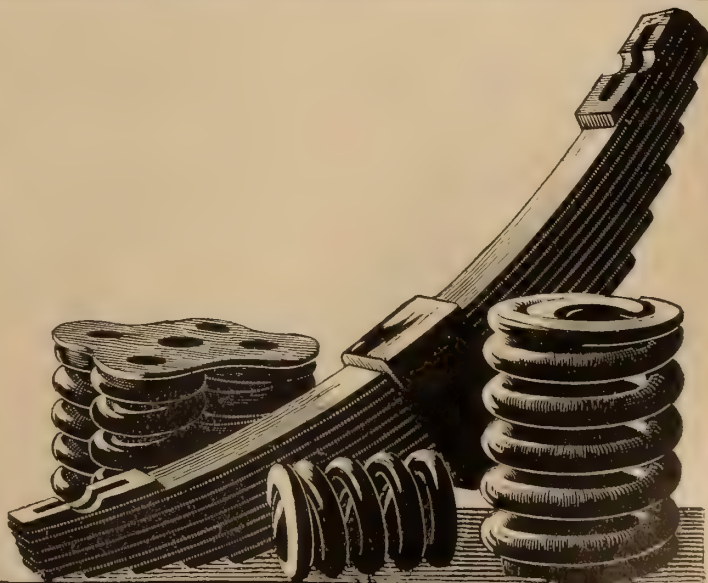
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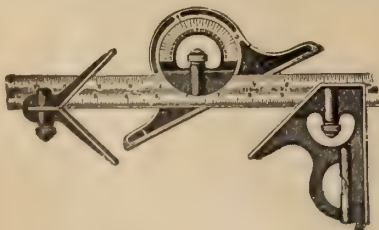
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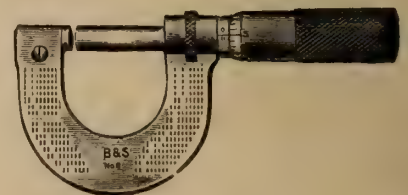
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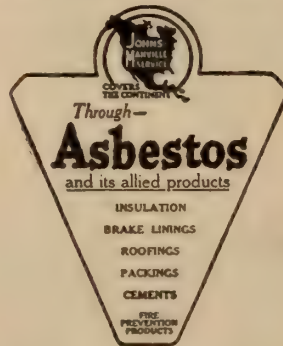
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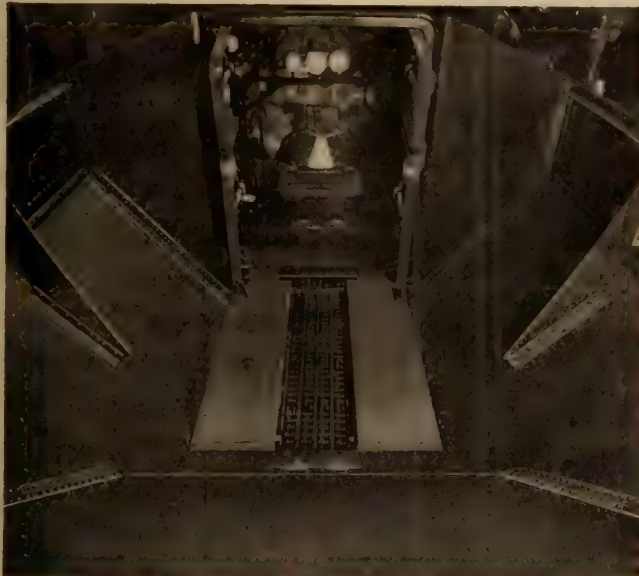
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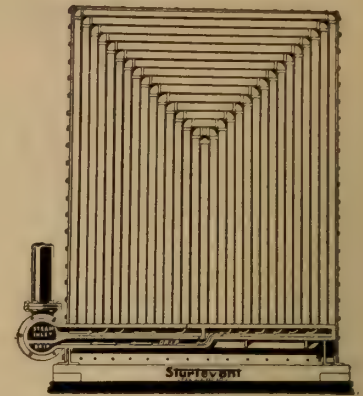
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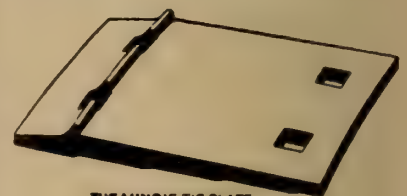
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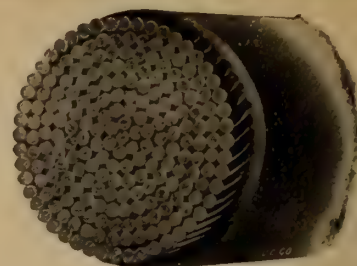
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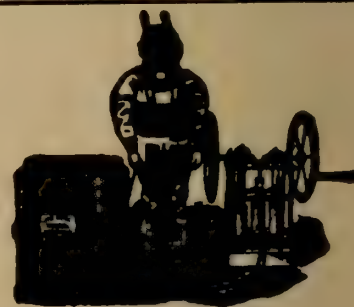
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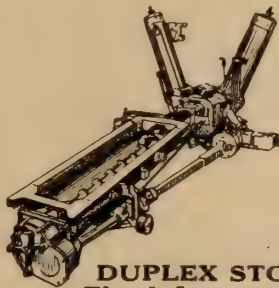
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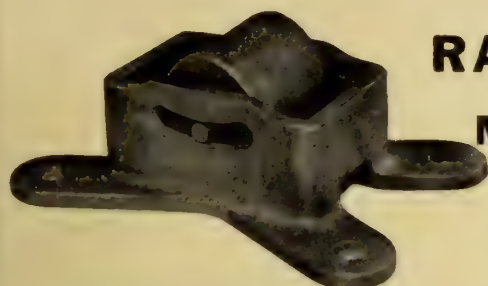
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Belt Drive—18" Throats

Capacity

To punch 1" diameter holes
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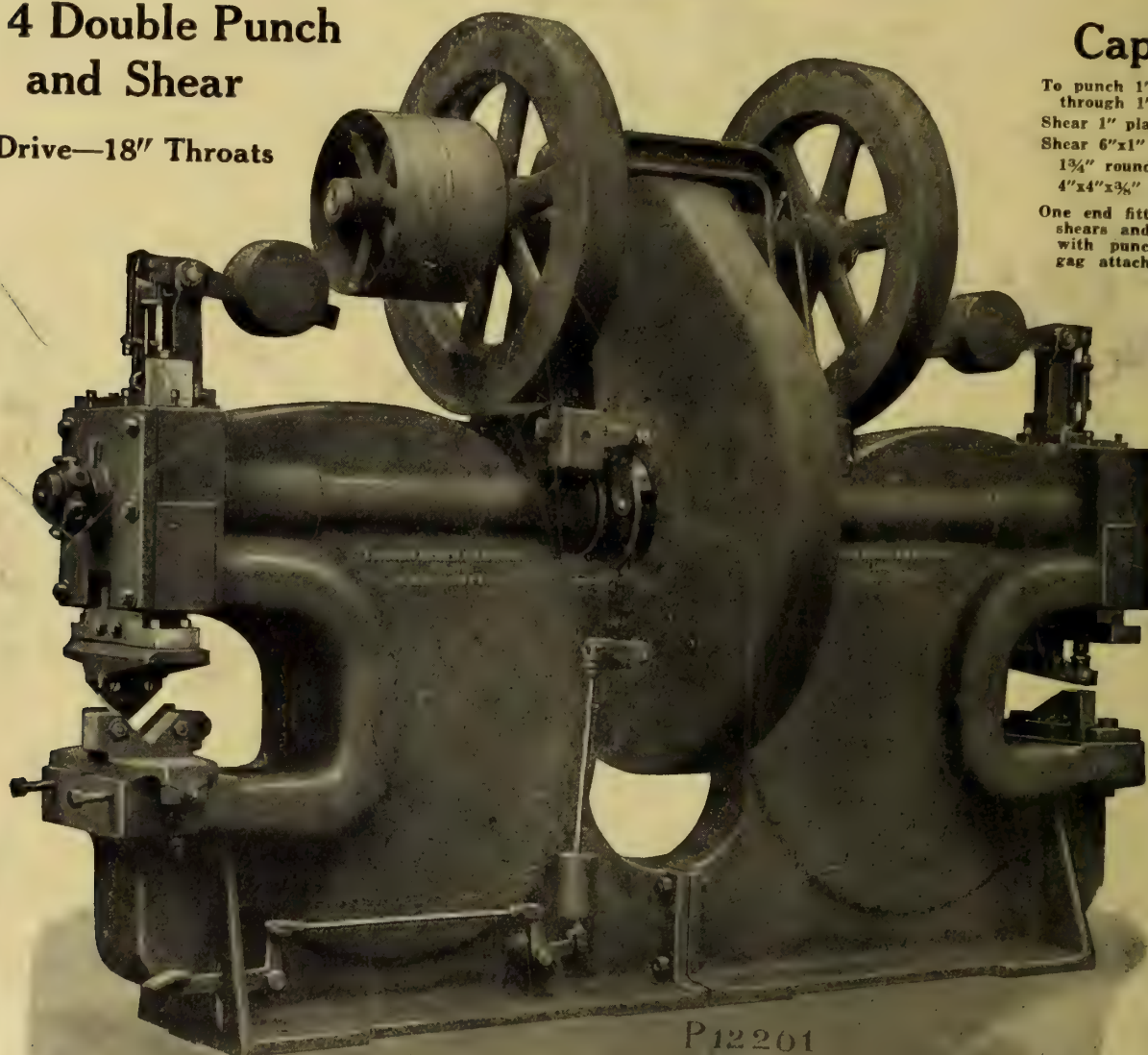
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Number 307.

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TORONTO, CANADA, SEPTEMBER, 1923

See page 429 for
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Two side heads—Equipped
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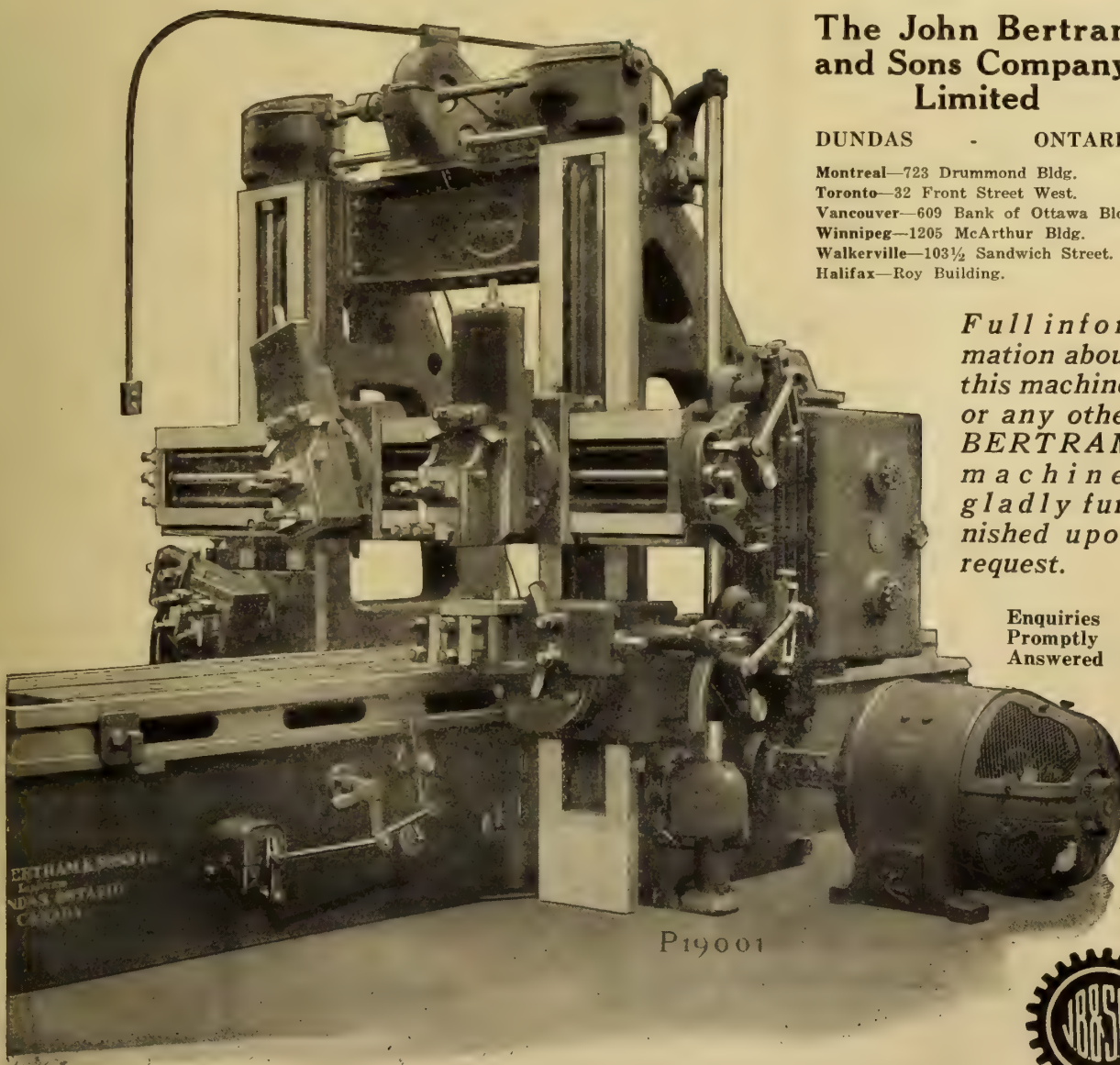
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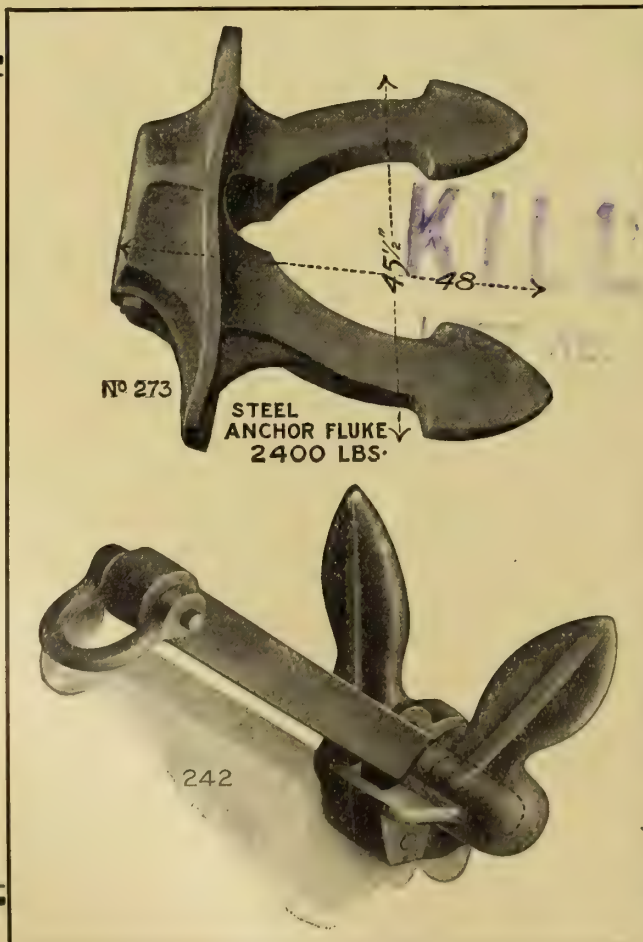
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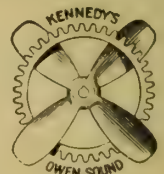
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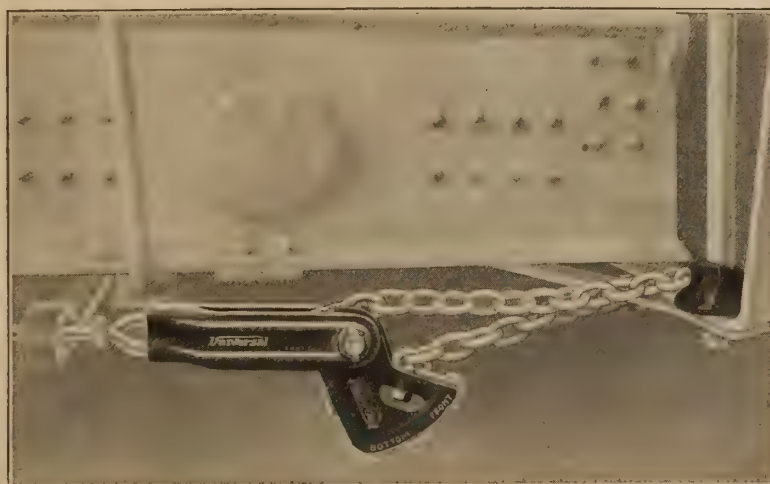
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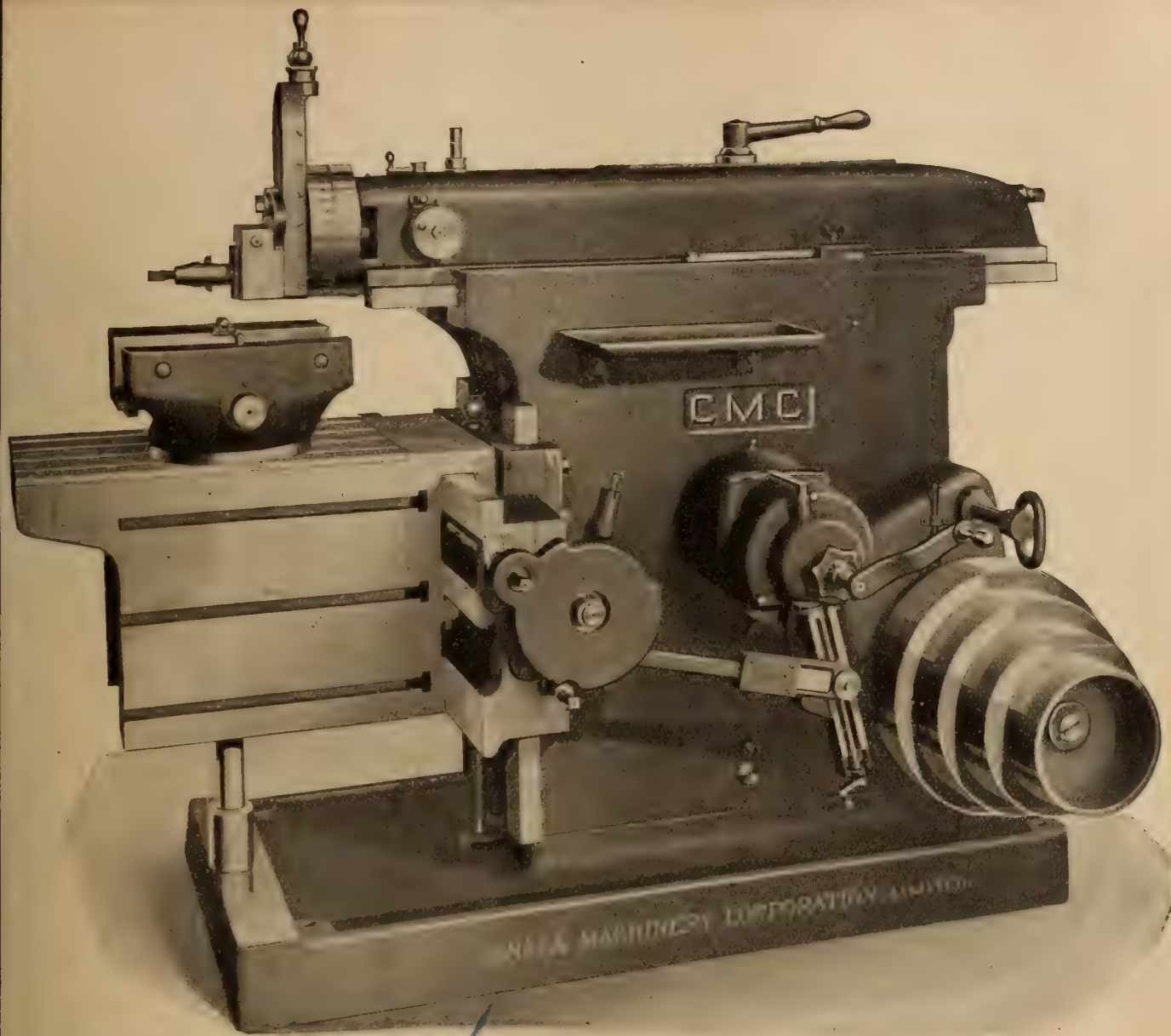
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TRAILER CARS

SPRINKLER CARS

PASSENGER CARS

DUMP CARS

FREIGHT CARS

SNOW PLOUGHS

ET CETERA

Canadian Car & Foundry Company, Limited

General Offices
307 Craig Street W.
MONTREAL



Steel Frame Trailer Car. 100 built 1923 for Toronto Transportation Commission.

RAILWAY TRACK MATERIAL

**Angle Bars
Tie Plates
Spikes
Bolts
Nuts**



THE
STEEL
COMPANY
OF
CANADA
LIMITED

HAMILTON MONTREAL



This One Thing We Do

With capital to finance a number of publications and with an organization that has no superior in Canada, we have yet resisted resolutely, every temptation to engage in publishing by wholesale.

For 24 years we have concentrated the efforts of a trained staff on just **one** publication:

CANADIAN RAILWAY AND MARINE WORLD

From the chief executive down to the humblest worker, there is just one duty, one task, one ambition: To make this **one** monthly magazine as nearly perfect as lies in our single purposed power.

To us, the publication of a technical magazine, that wields so vast an influence in so vital a field as the land and water transportation of Canada, involves a responsibility too great to permit us to allow a moment of our thought or an ounce of our strength to be diverted into any other channel.

Every one of us is proud of his and her part in making this one magazine the recognized authority, the acknowledged leader, the valued guide and the text-book of Canadian transportation, in all its varied phases.

And we have been richly rewarded for our intensive devotion to the single "cause" of Canadian transportation, by a universally recognized supremacy in this field; and by the 100% good-will of the big, capable, far-seeing men who have made, and are making, a Greater Canada.

CANADIAN RAILWAY AND MARINE WORLD

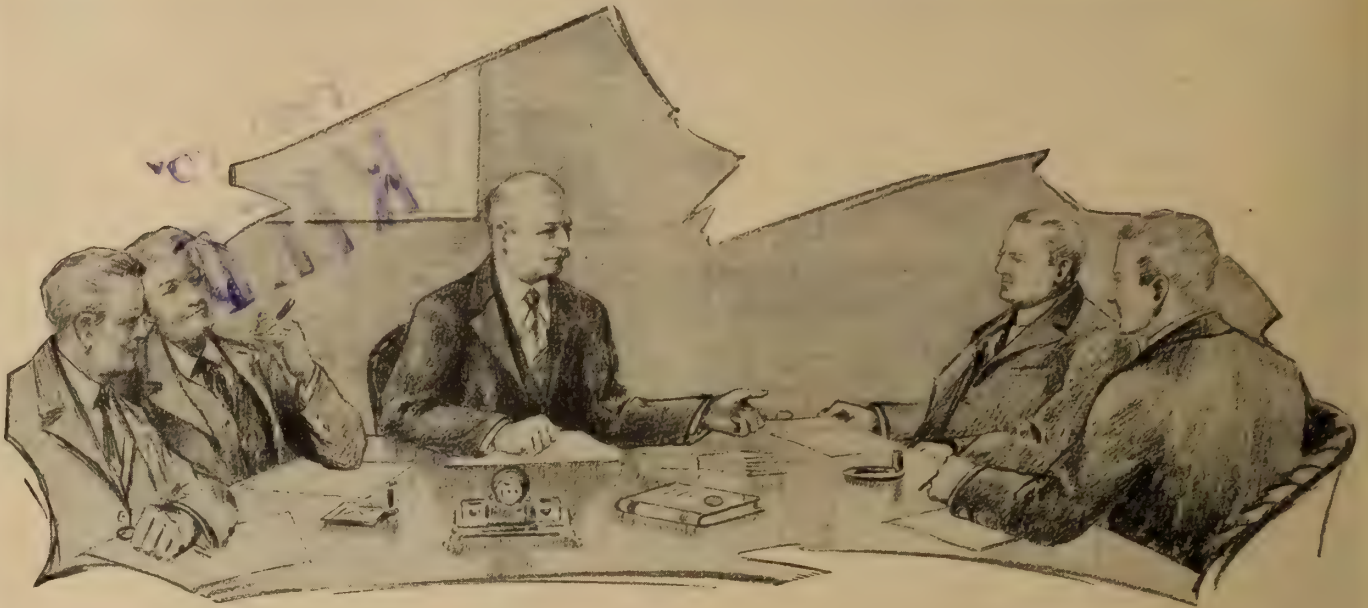
Toronto

Member of

Canada

*Audit Bureau of Circulations, Associated Business Papers,
Business Newspapers Association of Canada,
Canadian National Newspapers and Periodicals Association,
Canadian Press Association.*





Above All—Efficiency!

Experienced railroad executives know that the first and most important point in the selection of lubricants is efficiency—the ability to render satisfactory service under the ever-changing conditions of operating service.

The attraction of “lower price per gallon” has sometimes induced the use of lubricants that are physically incapable of bearing the strains of railway work.

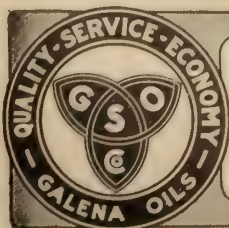
The results secured are always the same—trouble, hot boxes and driving journals, carbonization in cylinders, constant renewal of cylinder packing, delays, repairs and heavy depreciation in equipment.

Compared with the small saving in the first cost of the oils, the additional expenses arising from the use of inferior lubricants makes the item insignificant—shows it in its true light in relation to actual or final cost of lubrication.

Recently a large railroad made a complete service check on refinery lubricants, claimed to be “good as Galena.” A full year’s test on locomotives and cars permitted the fairest and most thorough observance of the oil’s service qualities. At its conclusion Galena lubrication was adopted as being not only much more efficient, but for its ultimate economy.

Wherever similar tests have been made the results have been the same. Service provides the one reliable means of determining lubricating values. It registers the actual efficiency of lubricants and marks the distinction between “cost of oils” and “cost of lubrication.”

*“When Galena Oils go in—
Lubrication troubles go out!”*

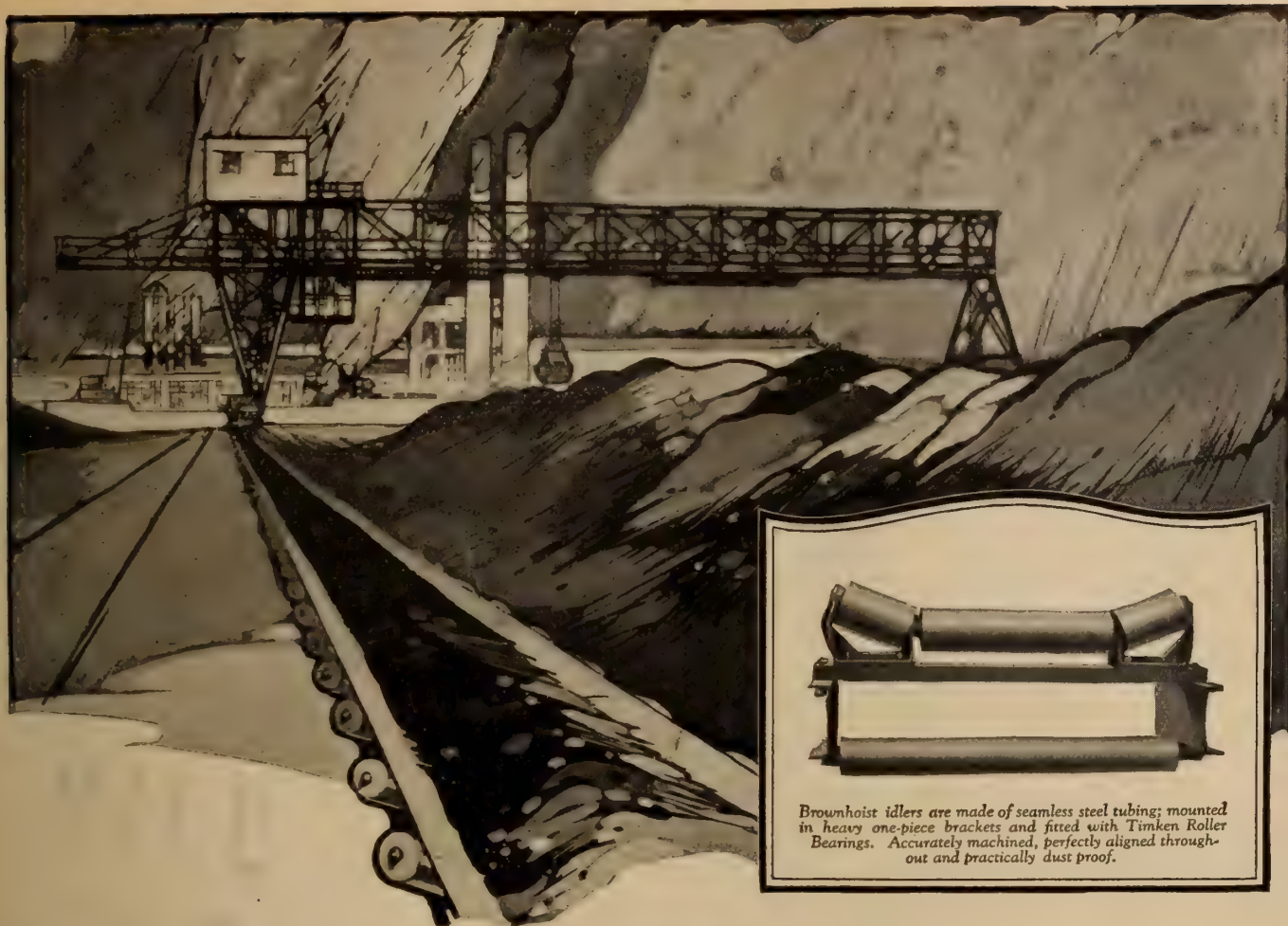


Galena-Signal Oil Company

Toronto of Canada, Limited

Montreal





Brownhoist idlers are made of seamless steel tubing; mounted in heavy one-piece brackets and fitted with Timken Roller Bearings. Accurately machined, perfectly aligned throughout and practically dust proof.

Built To Reduce Conveying Costs

Brownhoist Products

*Heavy Dock Machinery
Locomotive Cranes
Monorail Trolleys
Concrete Bunkers
Chain Conveyors
Belt Conveyors
Coal Crushers
Bridge Cranes
Buckets*

Literature on request

The first cost is of course important in choosing belt conveyor equipment. But, because that cost is spread over a long period of service, up-keep is a more important factor.

Realizing this, Brownhoist Belt Conveyors have been designed to reduce up-keep cost to a minimum.

Up-keep in belt conveyors is measured by wear on the belt and on the idlers and by power requirements. Brownhoist idlers are designed to give perfect alignment and a minimum of frictional resistance. Timken Roller Bearings are standard in all Brownhoist idlers and each bearing is greased by means of a high pressure lubrication system.

These features undoubtedly make the Brownhoist idlers last longer and assure longer life for the conveyor belt.

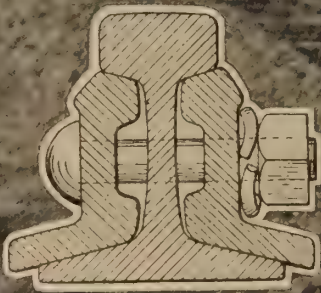
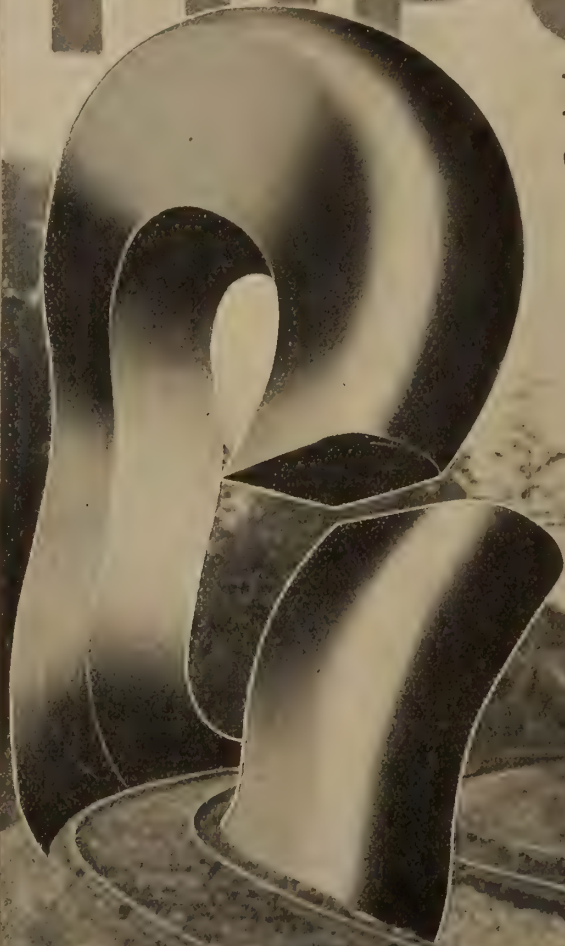
The Brown Hoisting Machinery Co., Cleveland, Ohio
Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

BROWNHOIST

M A T E R I A L H A N D L I N G E Q U I P M E N T

HIPOWER

Raise Your Standards
of Track Maintenance



THE NATIONAL LOCK WASHER CO.

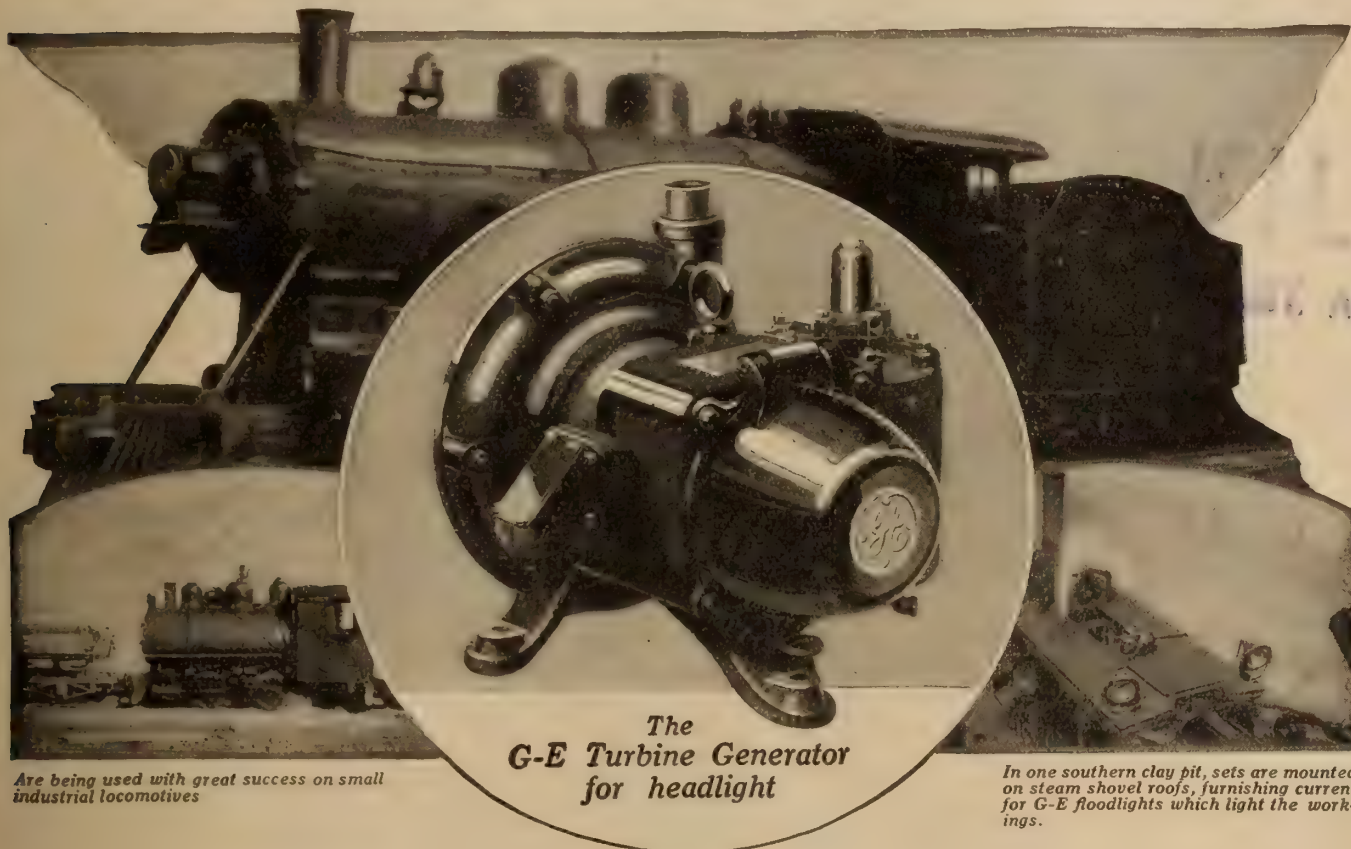
NEW YORK
NASHVILLE
RICHMOND

Established 1886
NEWARK, N. J.

CHICAGO
SAN FRANCISCO

DETROIT
ST. LOUIS
DENVER

An accurate maintenance record tells the unvarnished truth about a machine. It can always be consulted with confidence



Are being used with great success on small industrial locomotives

*The
G-E Turbine Generator
for headlight*

In one southern clay pit, sets are mounted on steam shovel roofs, furnishing current for G-E floodlights which light the workings.

Over Three Years in Operation Upkeep Only 37 Cents a Month

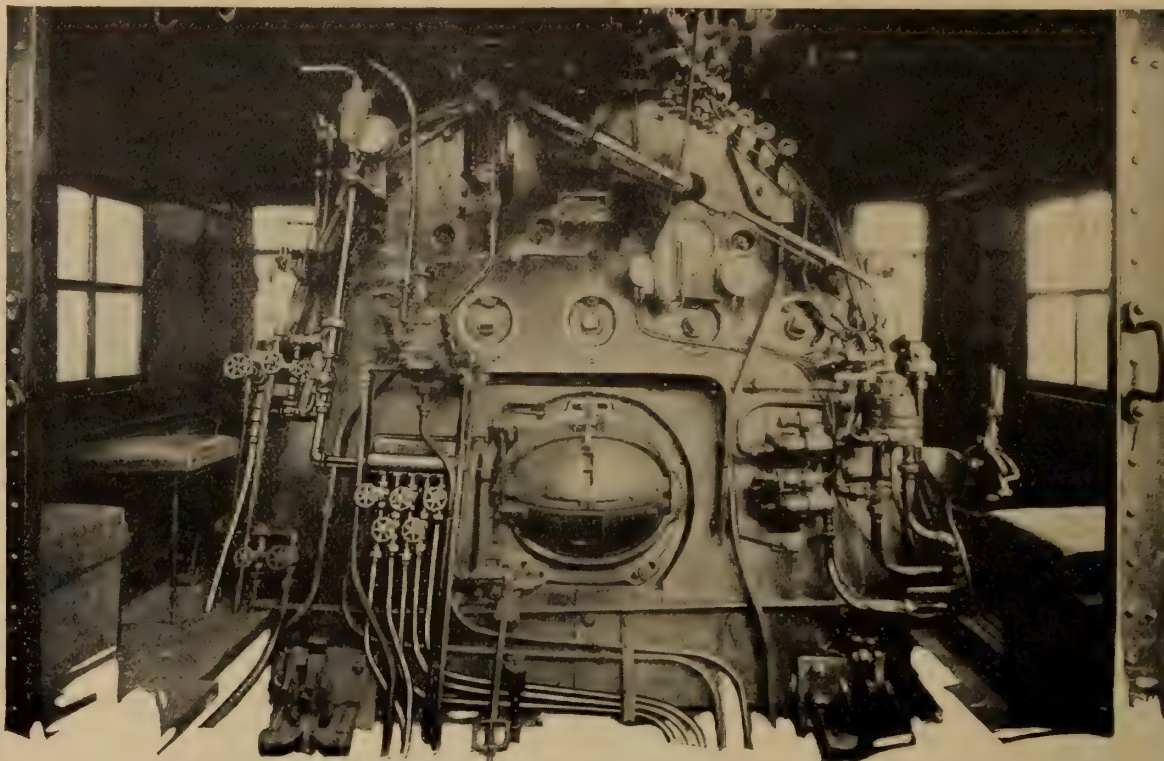
On one American railroad more than 250 G-E Headlight Turbine Generator Sets have been in operation for over three years. A carefully kept maintenance record shows but 37 cents a month per machine for spare parts. This exceedingly low upkeep, coupled with the dependability of this sturdy lighting set, accounts for its increasing popularity with engineers and executives.

The severe tests of four years' service and the manufacturing experience the General Electric Company has had with turbines great and small, combine to make G-E Headlight sets reliable. They are strong, highly efficient and can be closely regulated.

Canadian General Electric Co., Limited

HEAD OFFICE  TORONTO

Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Sherbrooke, Ottawa, Hamilton, London, Windsor, Cobalt, South Percupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.



Note how little the Stoker
adds to the back head

APPLICATION

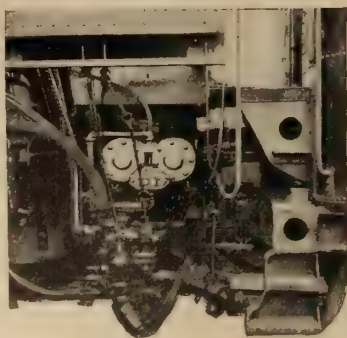
of the DUPONT-SIMPLEX STOKER to either new or old power is simple and inexpensive.

There is no rearranging of the back head or further congestion of the various appliances.

Only the distributing valves are located on the back head, all other parts are under the tension deck, out of the way, yet easily accessible.

This not only reduces the application cost, but also insures low maintenance costs.

Let us send you actual APPLICATION figures for both new and old power.



STANDARD STOKER COMPANY, INC.

Grand Central Terminal, New York, N. Y.

McCormick Bldg., Chicago, Ill. duPont Bldg., Wilmington, Del.

Foundries and Works, Erie, Pennsylvania.

DUPONT-SIMPLEX STOKER

Scientific Treatment of Boiler Feed Water



Dearborn

Dearborn Scientific Treatment Cannot Injure Metal

You can place a piece of iron or steel in Dearborn Treatment and it will not be affected in any manner. The Treatment may be concentrated, or diluted to the point recommended for your boilers. It may be hot or cold. The metal may be left in the solution indefinitely.

We make this statement in reply to the question sometimes raised relative to the treatment attacking the metal.

In other words, if you should use too much, you would waste part of the treatment, but it would in no way harm the metal. This we guarantee.

The Action of Dearborn Treatment

In making up Dearborn Treatment, the harmful salts in the water that cause pitting and corrosion are always provided for, as this feature is of great importance, even though the outstanding trouble may be scale or foaming. Dearborn Treatment takes care of *all* injurious action the water may have.

Proven in Practice

A large percentage of the railroads in America are now using Dearborn—conclusive evidence of its superiority over soda ash and other methods of treating water. Dearborn first placed water treatment on a scientific basis by the method of laboratory analysis and constant laboratory and service control.

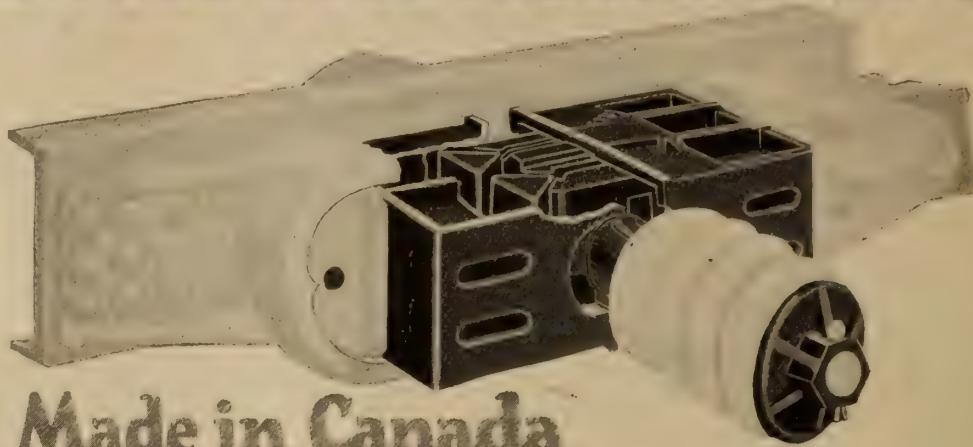
We invite every railway not using Dearborn to investigate—to give Dearborn a trial under their own service conditions.

*Gallon samples of water supplies required.
Analysis and recommendations made for you without obligation.*

Dearborn Chemical Company Limited

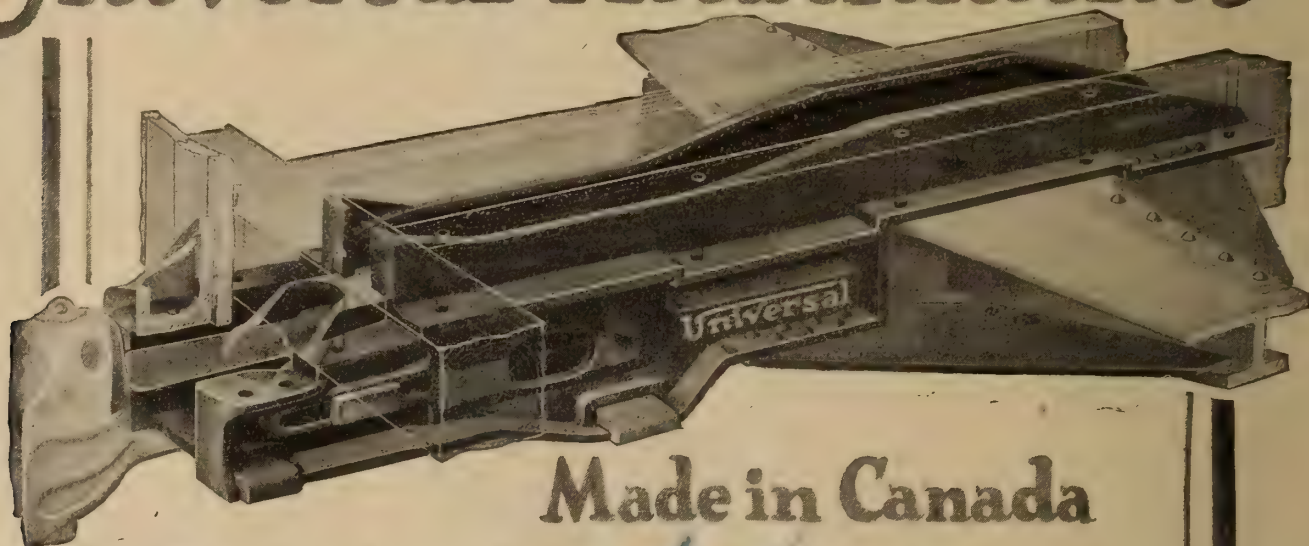
2454-2464 Dundas St. W. TORONTO, CANADA

Cardwell Friction Draft Gear



Made in Canada

Universal Attachments



Made in Canada

Reinforcing Draft Arms
Tandem Spring Draft Arms
Twin Spring Draft Rigging
Frictionless Side Bearings
Draft Lugs or Plates
Cast Steel Yokes

WEBB. G. KRAUSER
TRANSPORTATION BLDG. MONTREAL

"You Know Where to Find the Man"

"We want a man who
has specialized for that
position."



"Get the right man for the place from among those whom we already employ," were the President's instructions. "Pick out those who have not only been doing their work well, but have been studying in spare time getting ready for advancement. Among these you will find the right man."

Are you in the enviable position of that Executive Head when you wish to find the right man for the vacant place in your organization? Have you encouraged your employees to study? Have you let your employees know that trained competent men do not need to look elsewhere for promotion? Have you developed real, upstanding men who can fill positions of increased responsibility?

You cannot afford to overlook this vital factor in the success of your enterprise and of those associated with you.

The trained-man problem has been solved. All over this Continent business concerns, large and small, and in every line of trade and industry, have found in the International Correspondence Schools a medium of training and a source of trained men that has simplified one of the greatest problems in the building of an efficient organization.

For thirty-one years the I. C. S. has been training men for advancement, covering every technical trade and every phase of business—accountancy, salesmanship, advertising, traffic management, foreign trade, production, marketing, financing, drafting, electricity, engineering, shop practice and many others.

For a long time the I. C. S. worked only for the individual student. Then employers looking for men with certain qualities—ambition, industry, perseverance, special knowledge—suddenly made a discovery—these were the very characteristics of the I. C. S. trained man. Recognizing this, they began to seek out the men in their employ who were taking I. C. S. courses and to encourage others to enroll. Thus, there has developed a great co-operative plan through which the I. C. S. is serving over one thousand industrial concerns and three hundred railroads, solving the training problems for both employer and employee.

Some employers buy Courses for selected men. Some assist their men to pay for Courses. Others reimburse their men for the price that is paid for their Courses when they have completed them. Still others simply recommend I. C. S. Courses and then encourage those who take them. The I. C. S. offers a simple arrangement whereby employers are kept informed of the progress of employees who receive training from the Institution. **THE DEFINITE EDUCATIONAL ACHIEVEMENT OF THE I. C. S. STUDENT MAKES SUCH SERVICE DIRECTLY VALUABLE TO THE EMPLOYER WHO IS LOOKING FOR MEN FOR LARGER RESPONSIBILITIES.** An I. C. S. Course is a systematic, scientific, comprehensive and connected arrangement of specially prepared texts, easily studied, easily remembered and easily applied. From the day of his enrolment to the completion of his final examination, the I. C. S. Student is directed step by step, through every difficulty and helped over every obstacle.

Judgment, initiative, logical thinking, patience and application, so invaluable in every calling, are carefully cultivated in I. C. S. training. Not only is the I. C. S. Student put in possession of valuable knowledge of his chosen branch of commerce or industry, but the personal, practical, problem-solving method of instruction is the making of a trained mind and the building of sound character.

To build an efficient organization you must have trained men, and you cannot depend on finding them in other organizations. No matter how small or how great your needs, the I. C. S. can help you. You may have a single promising employee whom you want specially trained, or you may have ten or a hundred or a thousand employees in your plant or office who are good workers but lacking that special skill you like them to have.

Help them to equip themselves for better jobs and bigger responsibilities. Make them more valuable to you. The I. C. S. is ready with a practical way to do it.

Address: Industrial Service Division

International Correspondence Schools Canadian Ltd.
MONTREAL, CANADA

THE STANDARDS OF PRACTICE to which BUSINESS NEWSPAPERS ASSOCIATION OF CANADA members are required to conform

B. N. A. Standards of Practice

The members of this Association shall dedicate their best efforts to the cause of business and public service, and to this end shall pledge themselves:

- (a) To consider first the interests of the subscriber.
- (b) To work for truth and honesty in all departments.
- (c) To eliminate, in so far as possible, their personal opinions from their news columns, but be leaders in thought in their editorial columns and make their criticisms constructive.
- (d) To refuse to publish puffs, free reading notices, or paid write-ups, to keep their reading columns independent of advertising considerations and to measure all news by the standard "Is it real news?"
- (e) To decline any advertisement which has a tendency to mislead, or which does not conform to business integrity.
- (f) To solicit subscriptions and advertising upon the merits of the publication.
- (g) To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements, subject to proper authentic verification.
- (h) To co-operate with all organizations and individuals engaged in creative advertising work.
- (i) To avoid unfair competition.
- (j) To determine what is the highest and largest function in the field which they serve and then to strive, in every legitimate way, to promote that function.

It will be conceded that the working principles of the B.N.A. are unsurpassed in the field of advertising and publishing. They are not just a set of "dreamy hopes." Member publications must be dedicated to the true service of industry, must have high editorial standards, and their circulation methods and claims must be audited by the Audit Bureau of Circulations and be like Caesar's wife, "above reproach."

Only publications that are willing and able to live up to these high standards are members of the Association.

Adherence to these standards makes B. N. A. publications leaders in their respective fields.

B.N.A. membership to a business paper is what the "Sterling" mark is to silver.

WAST AD.

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CANADIAN AUTOMOTIVE TRADE
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CANADIAN FOUNDRYMAN
CANADIAN GROCER
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& BUSINESS MANAGEMENT
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Association Offices - - 70 Lombard Street, Toronto

St. John Drydock & Shipbuilding Co., Limited

DRYDOCK AND MARINE SLIPWAY

St. John, New Brunswick, Canada

Ship Repairs of All Kinds
To
Hull and Machinery

Drydock

1150 Feet Long With 42 Feet
Draught Over Sill Can Be
Used As One Dock or Two
Separate Docks 650 Ft. and
500 Ft. Each.

Marine Slipway

All Steel Construction
Capable of Hauling
Out Vessels up to
1800 Tons.

Ready For Operation October 1st. 1923
Both Drydock and Marine Slipway Fully Equipped
For Temporary and Permanent Repairs

Equipped With

Large Dock Crane, Machine Shop, Boiler Shop, Plate
Shop, Locomotive Cranes, Pattern Shop, Joiner Shop

Towing and Salvage

St. John, N.B.

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Towing and Marine Salvage Work of All Kinds Undertaken

Tugs

"Gopher"

"Margaret A. Hackett"

"Florence"

"J. H. Hackett"

"Katherine K"

Owners

St. John Drydock & Shipbuilding Co., Limited



Line Material

The O-B list of fittings for trolley line suspension covers practically everything from the support at the pole to the trolley wire. Long and intimate contact with electric railway construction has rounded out our line to take care of every need.

Exclusive O-B features for Cross-Span, Pole Bracket and Catenary trolley suspension show that O-B leads—is not a trailer.

As manufacturers we ever hold five essentials to the front. Practicality, Ease of Installation, Endurance, Appearance and Engineering Service to the User. Our organization earnestly keeps these aims in mind.

If you are not fully familiar with all O-B line material products let one of our Specialists carefully go over the list with you. This is part of our Service and places you under no obligation.

Dominion Insulator & Mfg. Co., Limited

(Manufacturing Ohio Brass Co. Products)

Niagara Falls

Ontario





Any Job That Calls for **WIRE ROPE**

Calls for **"DOMINION"**

THE RECOGNIZED STANDARD

All Sizes and Constructions in stock

The Dominion Wire Rope Company, Limited

Head Office: MONTREAL

Branches: TORONTO and WINNIPEG

The Improved Hart Convertible Car



Old Level Floor Car. Note Ballast Left by Plow.

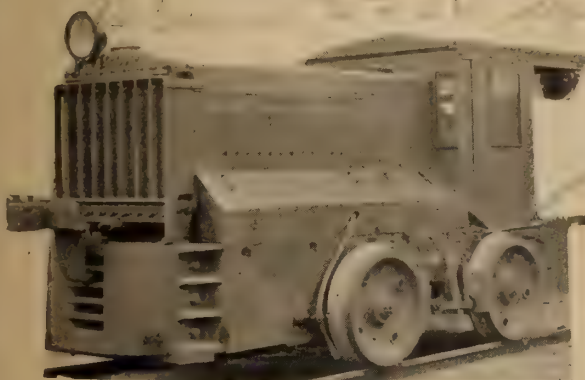
For
Ballasting
Center
Dump
or
Side Dump

For Coal
or General
Service



Improved Car Unloaded by Top Plow. Has no Ballast to be Shovelled out by Hand.

The Car With Gravity Discharge Pockets
The HART-OTIS CAR CO., Limited, MONTREAL



"PLYMOUTH" Gasoline Locomotives

When you put a "Plymouth" on the rails, service begins. Low upkeep is noticeable. Increased volume of material is moved.

Tell us the type of haulage in which you are interested, and we will mail literature.

"Marion" Steam Shovels

"Industrial Works" Cranes

Branch:
108 Mail Building
TORONTO

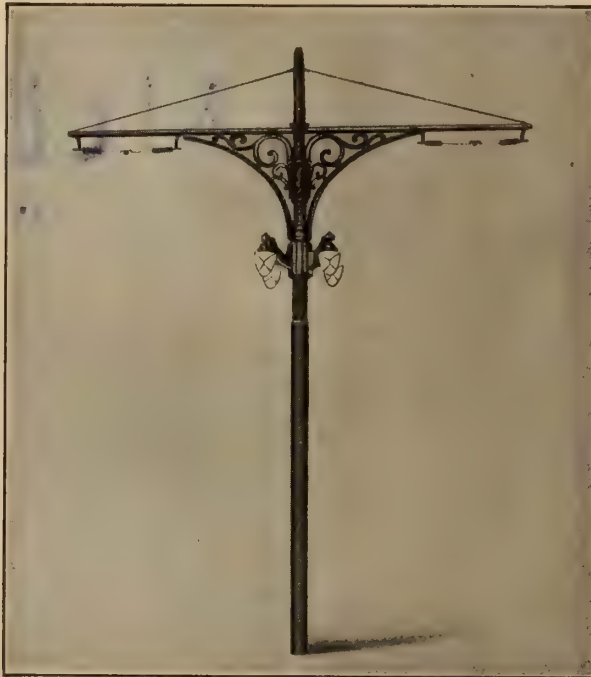
F. H. Hopkins & Co.
Limited

Head Office:
MONTREAL

PAGE-HERSEY TUBULAR POLES

MADE IN CANADA

FROM P&H PIPE



All sizes and weights
for the various purposes required and
to suit all styles of fittings.

NEAT — UNIFORM — ORNAMENTAL
DURABLE — STIFF — STRONG
ENDS CHAMFERED TO SHED
WATER

Ideal for
ELECTRIC LIGHT—POWER
TELEPHONE—TELEGRAPH
AND STREET RAILWAY LINES
AND FLAG POLES

PAGE-HERSEY TUBES, LIMITED Head Office: 100 Church Street - Toronto, Canada

Buffalo Brake Beam Company

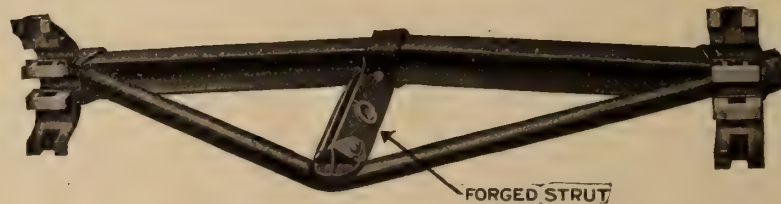
BUFFALO BEAMS ARE BEST BEAMS

Offices:

NEW YORK
32 Nassau Street

ST. LOUIS
Syndicate Trust
Bldg.

MONTREAL
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Works:
BUFFALO,
N. Y.

Canadian Works: HAMILTON, ONT.

Brake Beams for all Classes of Cars, Locomotives and Electric Equipment

The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO and KINGSTON—ONTARIO—CANADA

Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



S.S. CANADIAN WARRIOR

Two Dry Docks
and
Shops

EQUIPPED TO
OPERATE

Day or Night
on
Repairs

Gasoline Rail Car



A paying
proposition
for branch
line service

LEDOUX JENNINGS LIMITED

Builders of
Automotive Equipment

93 OSBORNE STREET

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MONTREAL

For Railroad, Hotel and Steamship Upholstery CHOOSE "CHASE" MATERIALS



The trade mark "Chase" stands for seventy-five years' leadership in manufacturing.

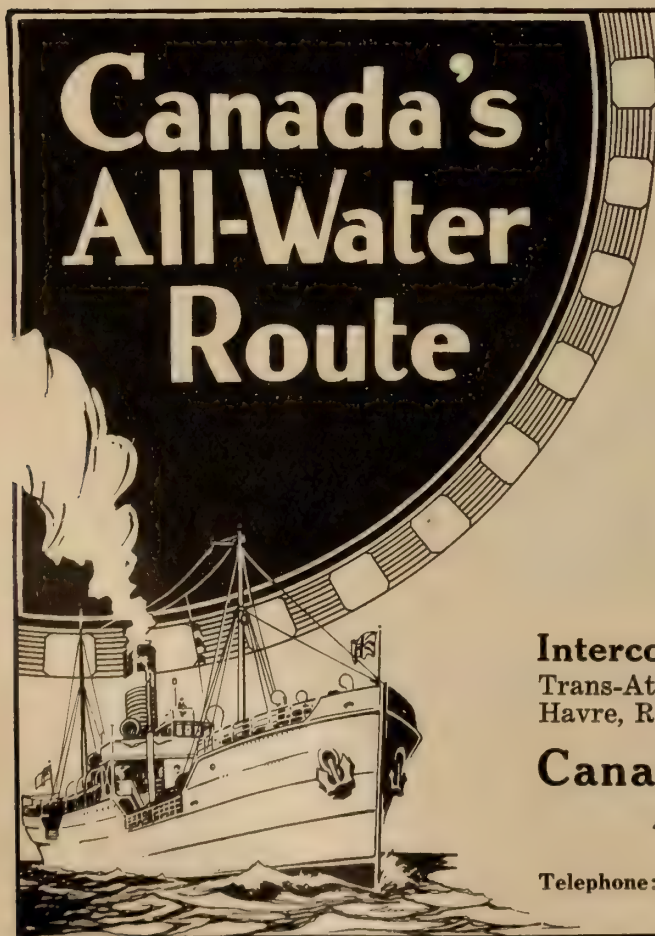
CHASE GOAT BRAND CAR PLUSH: This product, made from the fleece of the Angora Goat, has been the choice of railroads and steamship lines for over thirty years. It is **DURABLE—FAST IN COLOR—RICH APPEARING—MOST SANITARY.**

Recently there was exhibited a car seat upholstered with our Mohair Plush, and the seat had already been in service twenty-five years.

CHASE LEATHERWOVE: The modern, leather-like upholstery material for use where flexible toughness is the one thought.

For cleaning Plush and other upholstery fabrics choose **CHASE PLUSH RENOVATOR**—That remarkable liquid cleanser which does not start the dyes or injure the fabric. **GUARANTEED** effective, but **NOT HARMFUL.** Write for samples.

L. C. CHASE & CO., BOSTON, New York, DETROIT, Chicago, San Francisco



Ship Your Freight by Water —Save Time and Money

We operate the following Freight Services:

From Montreal, Toronto and Hamilton, connecting with C.P.R. at Fort William and C.N.R. at Port Arthur for all points in Western Canada—2 sailings weekly.

From Toronto and Hamilton to Montreal—2 sailings weekly.

From Montreal to Toronto and Hamilton—3 sailings weekly.

Between Montreal and St. John's, Nfld.—3 sailings monthly.

Between Montreal, Sorel, Three Rivers and Quebec—sailings daily.

Between Quebec and Saguenay River Ports—2 sailings weekly.

Between Hamilton and Toronto—2 sailings daily.

Intercontinental Transport Services Limited
Trans-Atlantic Steamers operating between Montreal, London, Havre, Rotterdam and Hamburg.

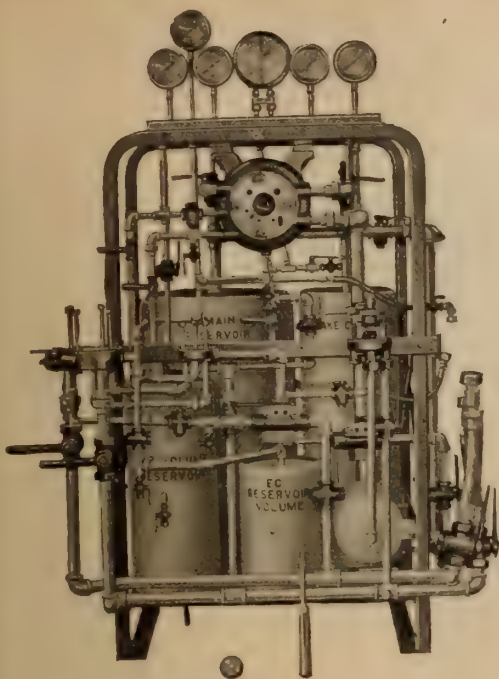
Canada Steamship Lines Limited

Head Office: Victoria Square, MONTREAL

Toronto Office, 32 Front Street West

Telephone: Adelaide 4200

Toronto Ticket Office: 46 Yonge Street



Westinghouse

No. 6 ET Test Rack

Keep Air-Brake Equipment at
The Peak of Efficiency

To enable our Air Brake customers to determine promptly and accurately whether the valves of the Westinghouse No. 6 ET Engine and Tender Equipment are up to the proper standard of efficiency, we recommend the No. 6 ET Test Rack.

By using this rack you know immediately whether any part of the equipment needs repairs, where and how to make them, without guess-work or lost time.

No repair shop is complete without the No. 6 ET Test Rack. We furnish full instructions as to its use and maintenance.

OTHER TESTING APPARATUS FOR
ALL TYPES OF AIR BRAKE EQUIPMENT

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Bank of Hamilton Bldg.
HALIFAX, 105 Hollis Street
CALGARY, Canada Life Bldg.

MONTREAL, 285 Beaver Hall Hill
FORT WILLIAM, Cuthbertson Block
VANCOUVER, Bk. of Nova Scotia Bldg.

OTTAWA, Ahearn & Soper, Ltd.
WINNIPEG, 158 Portage Ave. E.
EDMONTON, 211 McLeod Bldg.

Repair Shops:

MONTREAL—113 Dagenais St.
WINNIPEG—158 Portage Ave. E.

VANCOUVER—1090 Mainland St.

TORONTO—366 Adelaide W.
CALGARY—316 Third Ave. E.



The Star Brass Works

Largest Exclusive Trolley Wheel Makers in the World.

Kalamazoo

Michigan

Canadian Representatives:

Northern Electric Company, Limited

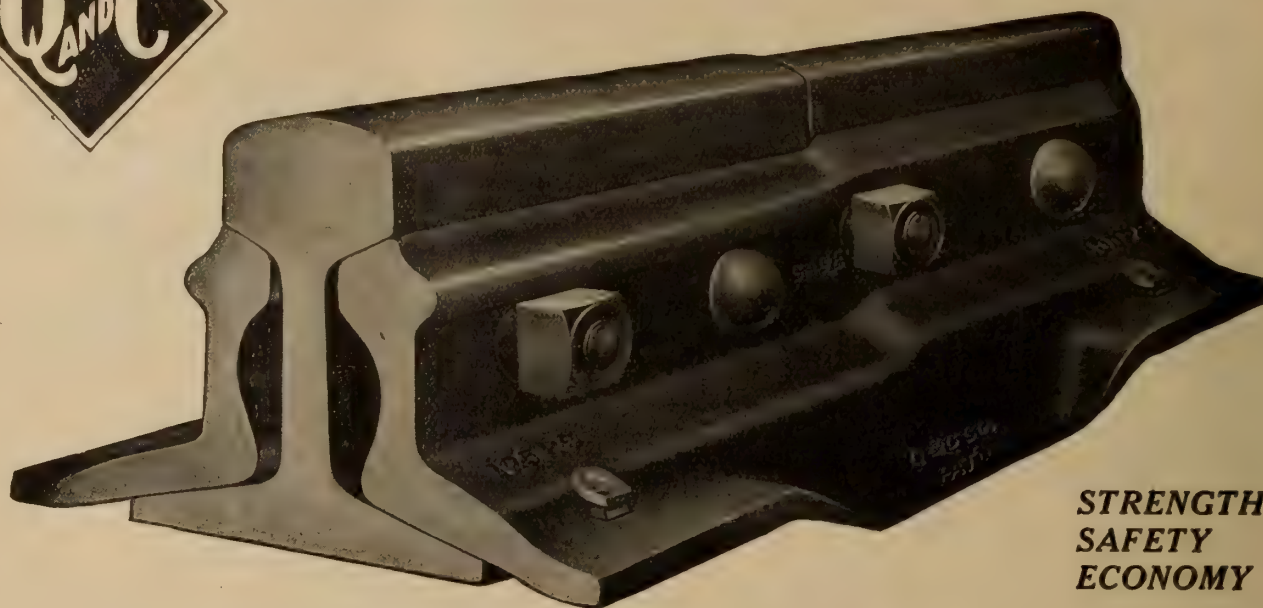
Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal
352 Donald St., Winnipeg**





Q & C Rolled Steel Step Joints



**STRENGTH
SAFETY
ECONOMY**

The General Supply Co. of Canada, Limited

356 Sparks Street, Ottawa

Montreal

Toronto

Vancouver

North Bay

Moncton

Winnipeg



Why
you should
install
FAIRBANKS
Globe
Valves

1. Renewable Disc can be replaced in less than one minute.
2. Rounded Seat prevents sediment from lodging on it.

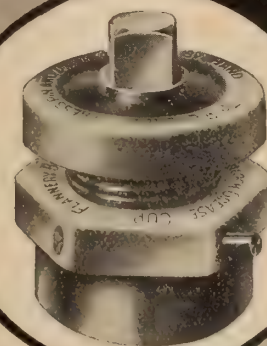
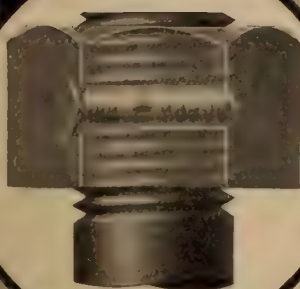
3. No locknuts to stick fast.
4. No obstructions to prevent a free flow.
5. Greatest number of engaged spindle threads.

These five convincing reasons are described in detail in our Valve Circular. It shows why this famous Bronze Valve really surpasses all other similar Valves in durability, service and adjustment. Write our nearest branch for it.

The Canadian FAIRBANKS-MORSE Company, Limited

St. John, Quebec, Montreal, Ottawa, Toronto, Windsor, Winnipeg, Regina, Calgary, Vancouver, Victoria

FLANNERY SPECIALTIES



INCLUDE

F. B. C. Welded Flexible Staybolts
Tate Threaded Flexible Staybolts
Forged Crown Stays (Taper or Button Head Type)
Rigid Water Space and Radial Stays
Realock Nuts—Realock Grease Cups

FLANNERY BOLT COMPANY
Vanadium Bldg.—PITTSBURGH, PENNA.



Newfoundland Dockyards Limited

Proprietors

(REID NEWFOUNDLAND COMPANY LIMITED)

St. John's

610 Feet Graving Dock

WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

PNEUMATIC TOOLS, ELECTRIC AND
ACETYLENE WELDING PLANT
IN OPERATION

SHEER LEGS AND WHARFAGE AT
DEEP WATER PIER

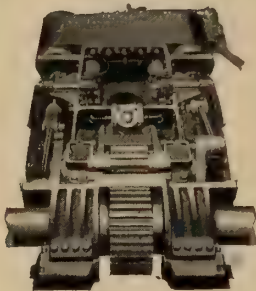
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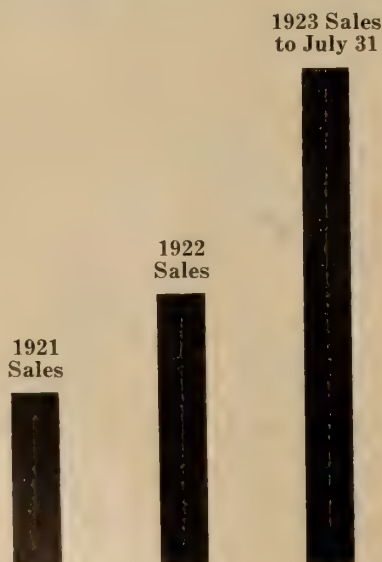
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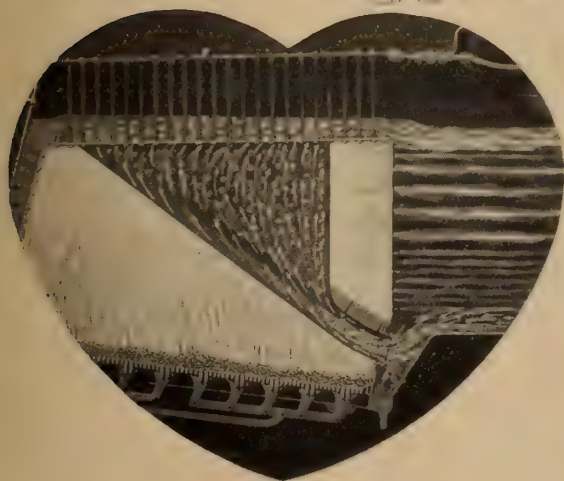
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Canada has become the World's second greatest grain-producing country.

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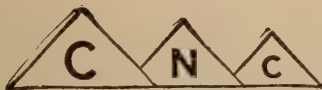
Atlanta	Chicago	Des Moines	Indianapolis	Los Angeles	New Orleans	Philadelphia	Salt Lake City	St. Louis
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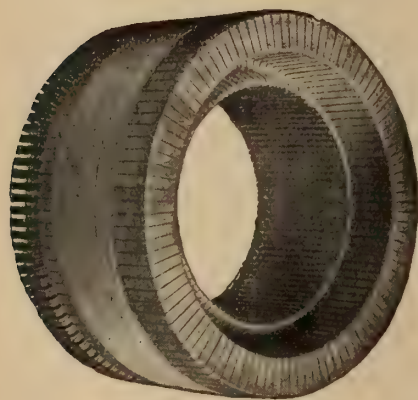
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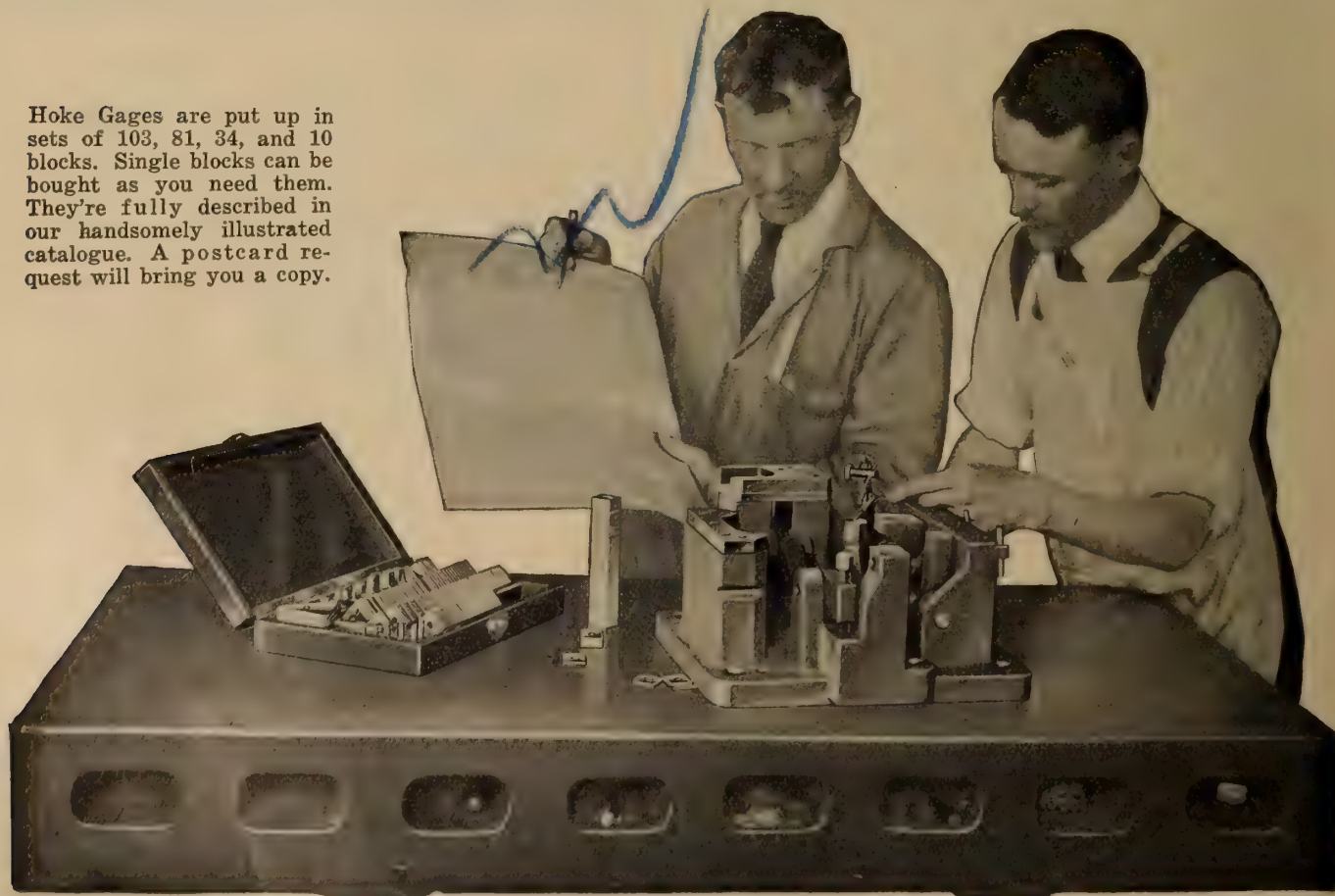
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Canadian Railway and Marine World

September, 1923

British Columbia and Alberta's Appeal on Rate Equalization.

British Columbia and Alberta's appeal to the Dominion Government from the Board of Railway Commissioners' decision in the equalization of rates case was heard in Ottawa on Aug. 9, 10, 13 and 14. Particulars of the circumstances leading up to the appeal were given in preceding issues of Canadian Railway and Marine World. The case's history may be briefly summarized as follows: The Dominion Government, on Oct. 6, 1920, dealing with an appeal from the Manitoba and Saskatchewan Governments, various cities, and boards of trade, directed the Board of Railway Commissioners to institute an enquiry into the question of equalization of rates as between Eastern and Western Canada. (See Canadian Railway and Marine World for Nov., 1920, pg. 591.) The Board commenced hearings Nov. 22, 1920, and held sittings at practically every important point in the country. With the exception of the western rates case, which was terminated in 1914, after three years' investigation by the Board, the enquiry was the most exhaustive in Canadian freight rates history. General order 366, issued June 30, 1922, specified, among other things, that a new Pacific standard mileage tariff should be introduced, by applying to the prairie standard tariff $1\frac{1}{4}$ miles for one mile, with distributing rates from recognized distributing centers in B.C., except Vancouver and New Westminster, constructed from the new standard mileage tariff, and with commodity mileage rates applying between stations in Pacific territory, and on interchange traffic between Pacific and prairie territory, reduced so as to bear the same relationship to the new standard mileage tariff as they did to the preceding one, which was based on $1\frac{1}{2}$ miles to 1 mile on the prairie scale. The Board's judgment was given in full in Canadian Railway and Marine World for Aug., 1922, the portion of it applying to British Columbia appearing on page 398. Not satisfied with the reduction thus afforded in rates applying to B.C. territory, Premier Oliver of British Columbia, and business interests of that province generally, and of Vancouver in particular, began an agitation for the removal of the complete differential as between prairie and mountain rates, which led to an appeal to the Dominion Government.

Canadian Railway and Marine World has given, in preceding issues, the arguments advanced by British Columbia as to why the mountain differential should be removed, and the railways' arguments as to why it should not be; also the Winnipeg Board of Trade's contention, that what British Columbia really sought was the introduction of a rate system that would enable Vancouver to take away from Winnipeg that city's distributing trade in the western prairie territory, and Alberta's contention, which is, chiefly, that rates are higher from eastern points to Alberta centers than they are to the Pacific coast, and that Alberta farmers are called upon to pay higher rates on grain than they would have to

if westbound grain rates were on a parity with eastbound rates. While the arguments at the hearing of the appeal before the Government by representatives of all parties were similar to those advanced on former occasions, the matter is of sufficient importance to repeat them, and they are, therefore, summarized in the following account of the appeal's progress.

The appeal, beginning Aug. 9, was heard by Premier King, Minister of Finance Fielding, Minister of Agriculture Motherwell, Postmaster-General Murphy, and other members of the Government. F. H. Chrysler, K.C., appeared for the Railway Association of Canada; E. P. Flintoft, Assistant General Solicitor, for the C.P.R.; Gerard Ruel, K.C., Vice President and General Counsel, for Canadian National Railways; G. G. McGeer, K.C., for British Columbia; Frank Ford, K.C., for Alberta, and Isaac Pitblado, K.C., for Winnipeg Board of Trade and Manitoba Government. Premier Oliver of British Columbia was present but did not participate in the argument.

Mr. McGeer, in opening argument for British Columbia, is reported to have stated that he relied on the Railway Act, 1919, sec. 314, s.s. 4, which states that "No toll shall be charged which unjustly discriminates between different localities." Basing his argument on the broad general principle that British Columbia is entitled to the same treatment as concerns railway rates as other parts of the country, he claimed that the agreement by which B.C. entered confederation provided for this and that the present rates constitute a violation of that agreement. He claimed that B.C. manufacturers are discriminated against and cannot market their products in the middle west in competition with eastern manufacturers, who, he said, are favored by the present rate structure. Mr. McGeer contended that the mileage rates out of St. John, N.B., are the lowest in the country; that those out of Montreal are higher than those out of St. John; that those out of Winnipeg are higher than out of Montreal, but that those out of Vancouver are the highest of all. He claimed that this in itself is unfair to the Pacific territory. As to the railway argument of higher cost of construction in B.C., Mr. McGeer said that B.C. had met her obligations in this regard by the subsidies given the C.P.R. by that province. He contended that the fact of water competition existing in the east should not allow the railways to make the western rates such that B.C. manufacturers cannot get into the prairie market. As an example, he called attention to conditions in the canning industry, pointing out that the rate on canned goods from Vancouver to Regina is \$1.37 $\frac{1}{2}$ per 100 lb., compared with a rate from Windsor, Ont. to St. Leonards, of 66c. He claimed that the differential in rates on canned goods runs from 41 to 100%. As a further example, he pointed out that the rates are such that a Montreal sugar manufacturer can keep the Vancouver manufac-

turer out of the Winnipeg market, and said: "The mountain rates are not higher due to higher operating costs in the Pacific territory, but are higher because of the desire to make every ton of freight produce the maximum number of ton miles." He claimed the present rates are designed to force grain through Fort William to export markets, and that is bad, because people in the Peace River country, and in Alberta generally, cannot afford to move wheat east at present rates, while the high rates prevailing on the westbound haul afford them no relief. As to operating costs, he contended that the grades on the Canadian National Rys. through the Yellowhead Pass to Vancouver are much more favorable than those on either the Canadian National or C.P.R. between Edmonton and Calgary, and Fort William. He said that the grades on the C.P.R. to Vancouver are not so good, but the same rates are charged on the C.N.R. as on the C.P.R., and in his opinion it did not much matter whether the Canadian National had adopted the C.P.R. rates voluntarily, or had been ordered to do so by the Board of Railway Commissioners. He stated that the C.P.R. had agreed to build through the Yellowhead Pass, but chose the Kicking Horse, and that it was making B.C. pay for its mistake. He argued that the cost of operation is no higher on the mountain section than elsewhere, and he quoted a statement to the effect that the cost of operation on the Canadian National between Edmonton and Vancouver is the lowest of any road on the continent. He also said that heavy construction cost is no argument; as the cost is borne so as to make possible reduced operating cost, and he pointed out that the Canadian National Montreal-Ottawa line cost much more to build than the line through the Fraser River canyon. On Gerard Ruel objecting to this, he admitted that the Ottawa-Montreal line costs were due largely to terminal construction. As to grain rates, Mr. McGeer claimed that 100,000,000 bushels of Canadian grain are now going through U.S. ports annually, a large part of which should go through Vancouver. Comparing rates on an 880-mile haul to Vancouver and to Fort William, he showed that the Vancouver rate is 27 $\frac{1}{2}$ c., compared with a 20c. rate to Fort William. He also claimed that the differential on the local grain rates to B.C. points is imposing an annual tax of \$375,000 on B.C.'s flour consuming populace. He also claimed that lumber rates are unreasonable, and said that lumber can be shipped from Pacific coast ports to Boston, via the Panama Canal, for \$8 a thousand feet, while the rate to Manitoba points, is \$15. He said that the only reason that Mr. Pitblado was at the hearing was because the Winnipeg Board of Trade was afraid that Winnipeg might lose the trade monopoly which the present rates give it, and he expressed the opinion that while the removal of the mountain scale might make the railways suffer some temporary financial loss, this would be nothing to the rev-

enues they would enjoy from the larger traffic due to hastened western development, made possible by equalized rates. He touched on the transcontinental rate situation to the extent of explaining how it costs more to send goods from Montreal to Alberta cities than it does to Vancouver; Mr. Flintoft objected to this matter being introduced, but Mr. Ford suggested that the Government could hear argument upon it, and, if thought advisable, order the Board of Railway Commissioners to make an investigation. This was agreed to.

During Mr. McGeer's argument, the Minister of Finance asked how westbound rates in Canada compared with those in the U.S. Mr. Flintoft showed that the Canadian rates are lower, but Mr. McGeer produced a map designed to show that there could be no comparison due to differences in physical conditions. Mr. Chrysler submitted that this was new evidence which should not be submitted in appeal.

Frank Ford, K.C., representing Alberta, read a statement from Premier Greenfield of that province, pointing out the disadvantage the Alberta farmers are at because of the relationship between eastbound and westbound grain rates; they have to pay the maximum rate in either direction. As to transcontinental rates, Mr. Ford stated that the rate from Montreal to Edmonton and Calgary is 25% higher than from Boston and other Atlantic points to Spokane, and that he did not think this condition fair.

Isaac Pitblado, K.C., presented his argument on Aug. 10 and is reported to have stated that B.C. was not after a legitimate rate reduction, but was seeking an equalization which is entirely unwarranted by conditions. In his opinion, the result of ignoring railway costs in the mountainous and sparsely settled portions of B.C. would be to raise rates all over the country. He contended that nature had favored the Pacific coast cities with water transportation, making ship competition possible and producing rate conditions very favorable to B.C. He maintained that the B.C. appeal represented an attempt to retain all the advantages it had, and to insist on all its disadvantages being removed, at the expense of her sister provinces. He considered that the Board of Railway Commissioners' decision in regard to B.C. rates was a just and equitable one. The Commission had considered cost of construction, cost of operation, originating traffic, diversity of traffic and all other relevant factors, and the Government would be ill-advised to interfere with the Board's ruling for the reason that the Board had evidence on which to base its judgment which the Government had not time to collect. At this point the Postmaster General interrupted and said that the Railway Act gave the Government power to deal with a question arising from the Board's decisions, if it was satisfied that the Board had not dealt with the matter in accordance with the principles laid down in the Act. Continuing, Mr. Pitblado explained why operating costs are twice as high in B.C. as on the prairies. He said the railways could do almost three times as much business in Manitoba as in B.C. for the same expense. He claimed that a 100% locomotive (C.P. rating) hauled an average train of 618 tons in Manitoba in 1920, compared with 538 in Saskatchewan, 471 in Alberta, and only 373 in B.C. He also called attention to higher fixed charges due to higher construction costs

in B.C., to the lower traffic density on B.C. lines compared with the prairie lines, and to the fact that B.C. originates less traffic per mile of line than any other province. He pointed out that 85% of B.C.'s tonnage is carried on commodity rates, and stated that the real reason for the appeal is to deprive prairie distributing centers of their natural areas of distribution for B.C.'s benefit. He made it clear that he was not opposing the B.C. argument on selfish grounds, but it seemed to him and those whom he represented that B.C. was "trying to make Vancouver a second Montreal at the expense of Winnipeg." He pointed to the rapid and substantial growth and development which B.C. is experiencing as evidence of the reasonableness of existing rates.

F. H. Chrysler, K.C., presented his argument on Aug. 13, and is reported as first wanting to know just how far Parliament had intended to authorize appeals to the Government from the Board of Railway Commissioners; he wondered if opposing counsel contended that the Government should have the authority to say that, though the Board had acted within the terms of the Railway Act, for other reasons the Board's ruling should be upset. If so, he argued, such a contention would have the effect of substituting the Government for Parliament, which alone could amend the act. He traced the history of rate making in Canada in such a way as to show the futility of Mr. McGeer's argument to the effect that rates should be on a similar basis in all localities. He pointed to the Railway Act of 1903, which originally gave authority to the Board of Railway Commissioners to approve more than one standard mileage tariff, evidence in itself that Mr. McGeer's argument was unsound. As to the contention that the Canadian National cost of operation in B.C. is less than that of the C.P.R. he pointed to the fact that although the C.N.R. line from Edmonton to Vancouver is 128 miles longer than the C.P.R. from Calgary to Vancouver, the charges for transportation thereon are on the same basis. As to construction costs, he quoted C. A. Hayes, formerly Vice President, Traffic, Canadian National Rys., to the effect that fixed charges on the C.N.R. mountain sections are 3½ times what they are on the prairie sections. As to the contention that B.C. is entitled to special consideration by reason of implications related to the covenants contained in the agreement between British Columbia and Canada at the time the former entered confederation, he argued that these had no foundation in fact. The agreement was only to the effect that a railway should be built to connect with the Canadian railway system, and it contained no provisions as to equality or inequality of tolls. As to Mr. McGeer's argument based on the C.P.R. relocation from the Yellowhead to the Kicking Horse Pass, he said that the B.C. Government had offered no objection at the time, and that if the line had not been built through the Kicking Horse Pass, development of British Columbia's southeastern valleys would not have been possible. He argued further on operating costs and traffic density in such a way as to demonstrate that there is ample justification for the present rate arrangement.

Gerard Ruel, K.C., occupied only about as many minutes in his argument as other counsel had taken hours. He is reported to have stated that as a previous

Government direction to the Board of Railway Commissioners had stated that no attention was to be given to Canadian National Rys. financial requirements in adjusting rate levels, the C.N.R. was not as vitally interested in the matter as the C.P.R. He thought that the appeal represented an attempt to tell the members of the Government in a few hours what the Board had considered for years, and that the Government should interfere only on two possible occasions, either where there had been an error in principle in a decision by the Board, or where a constitutional right was involved. He did not think the B.C. appeal involved any constitutional question.

F. Ford, on Aug. 14, in order to save time, agreed to allow Mr. McGeer to conduct rebuttal argument on behalf of both B.C. and Alberta. Mr. McGeer presented his concluding argument on that date, his representations being of the same nature as those presented by him before. This concluded the proceedings. Premier King assured Premier Oliver of B.C. that a decision would be arrived at as soon as all conditions would permit.

Freight Car Condition and Supply.

The Railway Association of Canada reports that on Aug. 1 there were 203,841 freight cars on Canadian lines, of which 14,018 were in bad order, this number being equivalent to 6.9 per cent. The bad order percentage at July 1 was 7.6, and at June 1 was 7.7, so that there is some improvement. A shortage of 543 cars was reported as of Aug. 1, compared with a shortage of 750 at July 1 and 350 at June 1.

In the U.S., at July 15, there were 188,621 freight cars in need of repairs, this being 8.3 per cent of the number on line, and the smallest percentage since Dec., 1920. On July 1 the number of bad order cars on U.S. lines was 190,411, equivalent to 8.4 per cent of the total. Despite the fact that the loading of revenue freight on U.S. roads for the week ended July 21 totalled 1,028,927 cars, the largest number in railway history, there were on hand on July 22 on those roads 79,710 surplus freight cars in good repair.

According to the transportation efficiency programme adopted by U.S. lines on April 15, the number of bad order cars is to be reduced to 5 per cent of the total by Oct. 1. From the figures given above it is evident that between July 15 and Oct. 1 the roads will have to repair 3.8 per cent of the total cars on line, in addition to doing current maintenance, if the programme is to be carried out.

The American Railway Association's operating rules committee met in Montreal, Aug. 14, and following days. On Aug. 14 they were entertained at the Windsor Hotel by the Canadian National Rys. and the C.P.R., and in the evening they left on the Canada Steamship Lines s.s. Montreal for Quebec, where they were entertained at luncheon at the Chateau Frotenac by the C.P.R., on Aug. 15, returning to Montreal by train.

Sir Henry Thornton at Winnipeg.—A Winnipeg press dispatch of Aug. 25 said it was officially announced that Sir Henry Thornton, President, Canadian National Rys., had established a personal office in the Fort Garry station, and that he would be there at regular intervals of five weeks.

The Wawa Hotel Disaster and the Relief Work.

While the deepest sympathy is felt universally for the relatives of the eight victims who perished, and for the others who were injured in the terrible fire at the Wawa Hotel, Lake of Bays, Ont., on the night of Aug. 18-19, that of transportation people goes out especially to C. G. Bowker, General Manager, Central Region, Canadian National Rys., in the loss of his younger daughter, Margaret Mary, aged 14; also to the Canada Railway News Co., of which T. P. Phelan, of Toronto, is President, which owned the splendid hotel, at which it gave a most satisfactory service and which steadily grew in popularity as the years went by. J. D. Warde, the company's Secretary Treasurer, who was staying in a cottage near the hotel, rendered great service in aiding the nearly 200 guests who escaped, and in facilitating their return to their homes. Too much cannot be said of the tremendous aid given by C. O. Shaw, President Anglo-Canadian Leather Co. of Huntsville, who is also President of the Huntsville and Lake of Bays Navigation Co., and proprietor of the Bigwin Inn, which is but a short distance from the Wawa. He acted with great promptitude in dispatching launches and other available small craft, which ran for several hours carrying as many of the burned out people as possible to his hotel, where he generously provided them with food and accommodation, and many of them with money, and made splendid arrangements for their conveyance by his steamboats and short portage railway to the G.T.R. Toronto-North Bay line at Huntsville, 145.9 miles north of Toronto.

Miss Margaret Bowker's death was particularly sad. Mr. Bowker, who, with his wife, son and two daughters, were in a suite on the ground floor, got out with all of them to safety, but, for some unexplained reason, in the terrible excitement which prevailed, Miss Margaret Bowker went back into the hotel, possibly, it is said, thinking her mother had not got out, and perished near the room she had been occupying.

Directly the news of the disaster reached W. E. Weegar, Superintendent, Allandale Division, Central Region, Canadian National Rys., at Allandale, early on the morning of Aug. 19, he had a special relief train made up, consisting of a baggage car, 5 passenger cars, and a sleeping car, and, accompanied by W. S. Thompson, Director of Publicity, C.N.R., Montreal, he went on it to Huntsville, 83.2 miles, where it awaited the arrival of the steamboats carrying the refugees from the Lake of Bays. Another special train was dispatched as quickly as possible from Toronto, consisting of 5 passenger cars to replace those taken from Allandale, so as not to disturb the regular service, a parlor car, a dining car, hastily but well provisioned, and Assistant General Manager Kingsland's car Kaien. C. S. Moore, General Superintendent of Transportation, Central Region, and C. E. Horning, District Passenger Agent, Toronto, went on this train. R. H. Fish, General Superintendent, Southwestern Ontario District, C.N.R., Toronto, who was at Parry Sound, rushed to Huntsville, 61.3 miles, on his business car 2901, which was added to the cars sent from Allandale, and the relief train thus made up left Huntsville on Aug. 19, at 6.10 p.m. standard time. At Martins, 4.4 miles south of Huntsville, it met the special train from Toronto,

from which the parlor car, dining car and business car Kaien were switched on to it. Everything that the C.N.R. officials could do for the refugees' comfort was willingly performed. They were made as comfortable as possible, and, in addition to being carried free, were served with free meals in the dining car, the crew of which deserve great credit for the way in which they worked. At 11.15 p.m., standard time, the train reached Toronto union station, where excellent arrangements had been made for the transfer of the injured in ambulances to the hospitals, and numerous motor cars took the others to hotels, private houses, etc. The Toronto arrangements were made under the direction of A. L. Smith, Superin-

bie, Chief of Transportation; W. A. Kingsland, Assistant General Manager, Central Region; R. H. Fish, General Superintendent, Southwestern Ontario District; W. R. Davidson, General Superintendent, Montreal District; G. T. Bell, Executive Assistant to Vice President, Traffic Department; G. C. Jones, General Manager, Telegraph and Telephone Department; Major F. L. C. Bond, Chief Engineer, Central Region; C. R. Moore, General Superintendent of Transportation, Central Region; J. Coleman, General Superintendent Car Equipment, Central Region; J. C. Garden, General Superintendent of Motive Power, Central Region; W. S. Wilson, Superintendent of Transportation, Southwestern Ontario District; W.



Miss Margaret Bowker's Funeral.

The coffin being placed on C.N.R. business car Quinte at Toronto Union Station, en route to Shamokin, Pa., where the burial took place.

tendent, Union Station, who gave orders from his house, where he was laid up owing to having been knocked down by a train in the station a few days before. A second relief train took the balance of the refugees to Toronto on Aug. 20.

Miss Margaret Bowker's Funeral.

A requiem mass for Miss Bowker was celebrated at St. Peter's Roman Catholic Church, Toronto, on Aug. 21, by Rev. Monseigneur McKeown, of London, Ont., all the Paulist priests in the city being in the sanctuary. In addition to Mr. Bowker and his remaining family, the large congregation contained, among others, the following C.N.R. officials: S. J. Hungerford, Vice President, Operation and Construction Department; D. Crom-

E. Weegar, Superintendent, Allandale Division; M. S. Blaiklock, Assistant Chief Engineer, Operation Department; J. B. McLaren, Comptroller, Central Region; Lorne MacDonald, Assistant Freight Traffic Manager; L. L. Grabill, General Baggage Agent, Central Region; L. W. Buller, Assistant Superintendent, Nipissing Division; C. E. Horning, District Passenger Agent; G. A. Stokes, Superintendent, Toronto Terminals, and E. W. Burns, Chief Clerk to General Manager, Central Region. U. E. Gillen, General Manager, Toronto Terminals Ry., and a number of C.P.R. officials were also present. After the service, Miss Bowker's remains were taken to Toronto Union Station, placed in the C.N.R. business car Quinte and taken to Shamokin, Pa.

Railway Operating Revenues, Expenses and Other Statistics for May.

The following comparative table for May, 1923 and 1922, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are not in all cases the same as reported in 1922.

The column headed "Canadian National" gives the figures for the combined steam railways in Canada, under the

Canadian National Ry. Co's directors' management, including the former Canadian Northern System, the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Province Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, nor lines west of the Detroit and St. Clair Rivers.

The column headed "Canadian Pacific"

includes also the Montreal & Atlantic and Esquimalt & Nanaimo Rys.

The first six items under the heading "Operating revenues" include rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, baggage, parlor cars, etc.

	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
(1) Operating Revenues						
Freight	\$26,454,815.92	\$24,394,847.55	\$12,798,518.09	\$11,792,584.24	\$9,647,601.13	\$9,291,525.00
Passenger	6,416,676.45	5,909,584.60	2,666,120.22	2,246,259.58	2,808,990.68	2,802,094.14
Mail	594,859.55	627,024.27	258,100.00	280,943.61	286,840.00	297,709.91
Express	1,544,795.71	987,481.90	983,038.00	1,028,855.86	446,285.92	388,227.96
Other freight train	1,301.50	1,977.41			278.80	1,377.07
Other passenger train	582,910.63	581,765.09	236,967.87	186,912.68	322,871.20	325,482.83
Water line	264,204.24	251,355.50			171,357.26	178,090.43
All other	1,380,091.11	1,098,215.56	608,782.68	510,554.92	598,652.28	648,881.89
Total railway operating revenues	\$37,239,655.11	\$33,802,251.88	\$17,551,526.86	\$16,046,110.89	\$14,282,877.27	\$13,933,389.23
(2) Operating Expenses						
Maintenance of way and structures	\$7,331,551.73	\$6,611,584.71	\$3,376,810.28	\$3,376,945.11	\$3,023,595.21	\$2,514,216.99
Maintenance of equipment	7,117,811.51	6,981,726.80	3,633,335.40	3,681,077.11	2,533,275.95	2,340,487.80
Traffic	1,109,047.70	1,025,055.08	364,323.62	336,483.18	675,572.05	609,438.89
Transportation	15,913,608.02	13,954,148.61	8,365,678.77	7,330,350.36	5,834,796.03	5,545,014.03
Miscellaneous operations	535,717.97	404,583.58	281,617.80	289,699.94	211,171.55	209,647.45
General	1,006,675.40	929,374.44	573,328.76	471,956.06	288,849.26	306,243.57
Transportation for investment	Cr. 11,044.85	Cr. 40,397.46	Cr. 8,003.83	Cr. 40,043.52		
Total railway operating expenses	\$33,003,367.48	\$29,866,075.76	\$16,587,090.80	\$15,446,468.19	\$12,567,260.05	\$11,525,048.73
(3) Operating Income						
Net operating revenue	\$4,236,287.63	\$3,936,176.12	\$904,436.06	\$599,642.70	\$1,715,617.22	\$2,408,340.50
Railway tax accruals	562,669.00	573,272.66	193,405.35	215,616.05	266,060.34	243,588.86
Uncollectible revenues	376.30	2,202.68		2,056.36		
Hire of equipment	Cr. 686,527.36	Cr. 172,059.38	Cr. 462,841.53	Cr. 218,916.38	Cr. 537,268.99	Cr. 195,904.38
Joint facilities rents	142,498.69	93,495.16	Cr. 6,793.99	Cr. 52,280.24	Cr. 1,913.75	4,760.43
Operating income	4,217,271.00	3,439,265.00	1,240,666.23	653,166.91	1,988,739.62	2,355,895.59
(4) Operating Statistics						
Average miles of road operated	38,480	38,805	20,455.25	20,646.21	13,919.9	13,877.2
Tons carried (revenue freight)	9,359,341	7,191,333	3,972,256	2,957,138	2,402,981	2,186,958
Tons carried one mile (revenue freight)	2,451,016.474	1,954,698.960	1,271,153.920	992,483.539	856,154.554	743,884.616
Tons carried (all freight)	10,909,819	8,235,101	4,632,570	3,449,063	3,109,341	2,633,916
Tons carried one mile (all freight)	2,754,692.586	2,151,584.114	1,403,963.000	1,085,285.067	1,018,419.970	840,380.816
Revenue passengers carried	3,293,598	3,366,141	1,612,361	1,710,075	1,196,816	1,186,954
Revenue passengers carried one mile	202,726.785	198,773.110	75,780.967	81,279.727	98,879.595	92,980.364
*Freight train miles	50,530,840	4,197,364	2,664,740	2,445,397	1,814,977	1,464,501
*Passenger train miles	3,862,233	3,729,670	1,752,168	2,004,994	1,655,680	1,635,840
Total train miles (revenue and non-revenue)	9,368,108	8,177,019	4,651,324	4,671,252	3,660,637	3,184,281
Freight car miles—loaded	113,656,615	92,197,424	57,312,144	53,553,485	41,326,622	34,073,110
Freight car miles—empty	58,276,809	44,781,926	33,322,729	29,084,567	18,197,300	12,559,056
Passenger train car miles	23,231,973	25,239,492	8,361,256	12,702,905	11,692,744	11,396,714
Total amount of payroll	\$20,207,821.93	\$18,613,435.56	\$10,818,819.30	\$9,943,083.58	\$7,672,256.71	\$7,012,084.07
Number of employees	168,227	153,336	90,152	82,049	65,570	59,199
(5) Daily averages per mile of road operated						
Operating revenue	\$31.22	\$28.10	\$27.68	\$25.07	\$33.10	\$32.39
Operating expenses	\$27.67	\$24.83	\$26.16	\$24.13	\$29.12	\$26.79
Tons moved one mile (revenue freight)	2,055	1,625	2,005	1,551	1,984	1,729
Tons moved one mile (all freight)	2,309	1,789	2,214	1,696	2,360	1,953
Revenue passengers carried one mile	170	165	120	127	229	216
(6) Averages per freight train mile						
Freight revenue	\$5.24	\$5.81	\$4.80	\$4.82	\$5.32	\$6.35
Tons of freight (revenue freight)	485.1	465.7	477.0	405.9	471.7	507.9
Tons of freight (all freight)	545.2	512.6	526.8	443.8	561.1	573.8
Loaded freight cars	22.5	22.0	21.5	21.9	22.8	23.3
Empty freight cars	11.5	10.7	12.5	11.9	10.0	8.6
(7) Averages per passenger train mile						
Passenger train revenue	\$2.37	\$2.16	\$2.37	\$1.87	\$2.33	\$2.38
Passengers carried	52.5	53.3	43.2	40.5	59.7	56.8
Passenger cars	6.0	6.8	4.8	6.3	7.1	7.0
Average operating expenses per train mile	\$3.52	\$3.65	\$3.57	\$3.31	\$3.43	\$3.62
Average length of haul (revenue freight), miles	261.9	271.8	319.9	335.6	356.3	340.1
Average passenger journey, miles	61.6	59.1	47.0	47.5	82.6	78.3
Average tons per loaded freight car	24.2	23.3	24.5	20.3	24.6	24.7
Average freight receipt per revenue ton mile	1.079c	1.248c	1.007c	1.188c	1.127c	1.249c
Average passenger receipt per passenger per mile	3.165c	2.973c	3.518c	2.768c	2.841c	3.014c
Ratio of payroll to operating revenues	54.3%	55.1%	61.6%	62.0%	53.7%	50.4%
Ratio of payroll to operating expenses	61.2%	62.3%	65.2%	64.4%	61.0%	60.9%
Ratio of operating expenses to revenue	88.62%	88.36%	94.50%	96.26%	87.99%	82.72%

*Contains a proportion of mixed train miles.

Railway Operating Revenues, Expenses and Other Statistics.

The table on the preceding page gives the operating revenues, operating expenses, net earnings and other operating statistics for Canadian railways as a whole for May, and separately for the Canadian National and Canadian Pacific. Tables on another page give the Canadian National and Canadian Pacific results for June. All the tables show that traffic conditions on Canadian railways continue to improve, and the individual tables show that in June the railways were able to handle the large traffic offering with expenses that made the net earnings more favorable than in June, 1922.

Analyzing first the table on the preceding page, which gives the May results for all roads, collectively, and the two larger roads, individually, perhaps the most striking thing about the results secured, next to the expansion in business done, as indicated by the operating revenue, operating expense and traffic figures, is the fact that although the operating ratio for May, 1923, was slightly greater than for May, 1922, the net earnings for May, 1923, were more than \$300,000 greater than for May, 1922. This brings home in a realistic manner the fundamental principle that the operating ratio in itself is not the most important factor in the railways' business; and that on a small volume of business, with a favorable operating ratio, the earnings on invested capital may not be nearly so good as with a larger volume of business and a somewhat less favorable operating ratio. A favorable operating ratio applied to a large business is what the railways need.

Bearing in mind the rate relationship between May, 1922, and May, 1923, the average receipt per revenue ton mile having declined from 1.248c. in May, 1922, to 1.079c. in May, 1923, the increase in freight traffic indicated by the increase in operating revenues, and shown by the ton mileage statistics to have taken place, shows greater activity in the country's economic life this year than last. The passenger earnings, also, despite the average rate per passenger mile having increased over May, 1922, indicate an increase in travel, which the number of revenue passengers carried one mile shows actually took place. This is another indication of the economic trend. Operating revenues for all railways in May, 1923, were better than for May, 1922, in all the main earning divisions; the increase in operating revenues being 10.2 per cent over May, 1922, and 4.7 per cent over April, 1923. Freight earnings were 8.4 per cent. more than in May, 1922, and passenger earnings 8.6 per cent. more.

Operating expenses were 4.7 per cent more in May than in April, 1923, and 10.5 per cent more than in May, 1922. They increased in all departments compared with May, 1922. The chief increase was in transportation expenses, amounting to \$1,959,460, and examination of the payroll figures indicates that most of this increase was for additional wages. The increase in operating expenses, in relation to that secured in operating revenues, produced an operating ratio for May, 1923, of 88.62, compared with 88.36 in May, 1922. The operating ratio for April, 1923, was 88.66, almost the same as for May.

Attention was directed above to the

betterment in net earnings, despite the increased operating ratio; this betterment was carried through to the operating income, and a comparison of the income for May, 1923, compared with May, 1922, shows that the improvement was substantial. The operating income for April, 1923, was \$3,943,417.09, so that an improvement is also evident in May, compared with the preceding month.

Analysis of the operating statistics having to do with traffic handled, and the way in which it was handled, shows the causes of the increased operating revenues, operating expenses, net earnings and operating income. The increase in the number of ton miles of revenue freight handled, from 1,954,000,000 to 2,451,000,000 represents an improvement of more than 25 per cent. While the increase was not so great in the number of revenue passenger miles, it was, however, when combined with a slight increase in the average passenger rate, sufficient to produce a substantial increase in earnings from passengers. It is also noteworthy, in connection with passenger business, that the increase in the number of passenger train miles was not so great, on a percentage basis, as in the number of revenue passengers carried, while the number of passenger train car miles operated decreased by 8 per cent from May, 1922. It is encouraging to passenger traffic men to know that the "increasing and decreasing returns" part of their business works both ways, i.e., when passenger traffic is falling off, it is difficult to make reductions in service that will reduce expenses proportionately to the loss in revenues suffered, but, on the other hand, when business is picking up, additional revenues will flow in to the railways' coffers without proportionately increased expenditures having to be made. Preliminary reports for weeks in July and the first part of August indicate that passenger business has been picking up well; and, as this end of railway traffic has been in a more or less depressed condition for some time, the betterment is encouraging and it is to be hoped that it will continue.

Train and car loading figures show that there was better train loading in May, 1923, than in May, 1922, the average revenue trainload being 19.4 tons heavier in May, 1923. This came about not only from a betterment in car loading (24.2 tons a car in May, 1923, compared with 23.3 in May, 1922), but also from a higher average number of loaded cars per train. Although the reduction in the average receipt per revenue ton mile was too large for the increase in the average train load to make freight revenues per freight train mile as good a figure as in May, 1922, the small increase in the average passenger rate, combined with the increased average number of passengers per passenger car mile, produced better passenger earnings per passenger train mile. The figures showing operating results indicate increased efficiency in handling both freight and passengers; the relative differences in earnings as between freight and passenger train miles was brought about solely by the rate changes.

The increased traffic handled necessitated the addition of a large number of employees. The roads as a whole had 14,891 more employees in May, 1923, than in May, 1922, and the payroll in-

creased by \$1,594,386.37.

On the Canadian National Rys., including the Canadian Northern, Intercolonial, Prince Edward Island, National Transcontinental and other Government railways the Hudson Bay Ry., the Grand Trunk Ry in Canada, and the Grand Trunk Pacific Ry., and 36.16 miles of the G.T.R. in the U.S., viz., Champlain and St. Lawrence Ry., 1.21 miles, United States and Canada Ry., 22.18 miles, Vermont & Province Line Ry., 9.77 miles, and the Black Rock Terminal, but not other U.S. Grand Trunk lines nor the Central Vermont Ry., in May there were increases in both operating revenues and operating expenses, the greater increase being in operating revenues, with the result that the operating ratio improved from 96.26 to 94.50. Operating revenues increased 9.4 per cent, and operating expenses 7.4 per cent. Freight earnings increased 8.5 per cent, and passenger earnings 18.7 per cent. Revenue ton mileage increased 28.1 per cent, and average train loading increased from 443.8 to 526.8 tons. The Canadian National Rys. contribution to the increase in employes and wages for all roads as stated was 8,103 in employes and \$875,736 in wages, compared with May, 1922. The C.N.Rys. financial results for May were commented upon in our August issue, pg. 389.

The Canadian Pacific Ry., including the Montreal & Atlantic and the Esquimalt & Nanaimo Rys., financial results for May were also commented upon in our August issue. While it had a 2.5 per cent increase in operating revenues, it also had a 9 per cent. increase in operating expenses, due largely to an increase of 20.3 per cent in maintenance of way and structures expense. While revenue ton mileage and revenue passenger mileage had gains, compared with May, 1922, of 15.1 and 6.3 per cent, respectively, both train and car loading fell off. The C.P.R. payroll for May was \$651,173 more than for May, 1922, and the number of employes was 6,371 more. The larger increase in operating expenses than in operating revenues increased the operating ratio from 82.72 in May, 1922, to 87.99 in May, 1923.

By examining the results secured by the two largest systems in June, it is seen that the C.P.R. operating revenue was \$14,943,918, an increase of \$1,133,471 over June, 1922; and operating expenses, \$12,521,918, were \$1,073,783 more, which resulted in net earnings of \$2,422,001, being \$59,687 more than in May, 1922. The increase in net obtained in June was not, however, sufficient to bring the net for the first 6 months up to that for the first 6 months of 1922. At the end of May the C.P.R. was \$307,398 behind in its net, compared with the first 5 months of 1922; and the June results left it still \$247,711 behind, despite an increase in gross of \$4,550,135 in the first six months of 1923, compared with the same period of 1922. The increase in operating expenses for the 6 months was \$4,797,845.

The Canadian National Rys. June operating revenues were \$20,475,149, compared with \$18,308,716 in June, 1922; and operating expenses were \$19,354,677, compared with \$18,432,527, which resulted in net earnings of \$1,120,471, compared with an operating deficit of \$123,812 in June, 1922. For the first

6 months of 1923, operating revenues were \$116,778,673, an increase of \$14,208,039 over the first 6 months of 1922; and operating expenses, \$115,266,441, were \$9,769,810 more, which gave net earnings of \$1,512,232 for the first 6 months of this year, compared with an operating deficit of \$2,925,997 in the first 6 months of 1922.

From the May figures as given in the table on the preceding page and as analyzed above, and from the June results as also mentioned, it is evident that the railways are operating on a pretty narrow margin. They are moving heavy traffic and doing it efficiently; if the traffic was not heavy, or if they were not moving it efficiently, they would not be able to break even. The operating ratios they are obtaining are not what they should be; they are exceptionally good, however, with conditions as they are. A falling off in traffic would, with rates remaining as they are, make the operating ratio more unfavorable than it is, and cut the net earnings to the vanishing point. While traffic remains good the railways are sorely beset by employees who want more wages, and by patrons who want rates reduced, through direct reduction and so-called equalization. It does not require much imagination to see that the railways are not getting results to put them in a position to afford either wage increases or rate reductions.

Self-Propelled Cars on Steam Railways.

Previous issues of Canadian Railway and Marine World have contained descriptions and illustrations of the numerous self propelled cars acquired by the Canadian National Rys. (including a large gasoline car ordered by the G.T.R., before the amalgamation), Greater Winnipeg Water District Ry., Quebec Central Ry. (including the car operated by the C.P.R. on its LaSalle Loop Subdivision), and Quebec, Montreal & Southern Ry., each car having been described as it was acquired. Most of the cars are in operation on the runs specified in previous issues, but some redistribution has been effected on the Canadian National Rys., as follows: No. 15,800, formerly a gasoline-electric car operating between Winnipeg and Transcona, Man., is being converted into a storage battery car at the Niagara, St. Catharines & Toronto Ry. shops at St. Catharines, Ont. At the time of writing (Aug. 15) this work is nearly completed, and on being finished the car will be returned to its former run. No. 15,801, a storage battery car bought from the Storage Battery Car Co., is operating between Toronto and Beaverton, Ont.; 15,802, the larger of the 2 storage battery cars bought from the Cambria & Indiana Rd., is operating between Bathurst and Campbellton, N.B.; 15,803, the other storage battery car bought from the Cambria & Indiana Rd., is operating between Brockville and Westport, Ont.; 15,804, steam car, has been taken out of service and returned to the builders; 15,810, a small gasoline driven car built on a Winton chassis, operating formerly between Souris and Elmira, P.E.I., has been taken out of service and replaced by steam train service; 15,811, a small gasoline car built by Ledoux, Jennings, Ltd., formerly in operation between Cross Creek and Stanley, 5.74 miles, on the Nashwaak and Stanley Subdivisions, Ed-

mundston Division, Atlantic Region, is now being operated between Dalhousie and Dalhousie Jct., 6.21 miles, on the Dalhousie Subdivision, Campbellton Division, Atlantic Region, service between Cross Creek and Stanley being now given by steam trains 27 and 28, which en route from Newcastle to Fredericton and vice versa, on the Nashwaak Subdivision, operate from Stanley Jct. to Stanley and return; 15,812 and 15,813, gasoline cars built by Ledoux, Jennings, Ltd., are operating between Victoria and Milne's Landing, 26.6 miles, on Cowichan Subdivision, Vancouver Island Lines, British Columbia District; 15,814, a Service gasoline car, and 15,815, a Ledoux, Jennings gasoline car, are operating between Trenton, Picton and Napanee, Ont.; 15,816, the large gasoline car ordered by the G.T.R. from National Steel Car Corporation, and described in Canadian Railway and Marine World for February, is not yet completed. In addition the Canadian National Rys. have had 2 small gasoline cars built at the Fort Rouge shops, Winnipeg, and these have been numbered 15,700 and 15,701.

Toronto Viaduct Situation.

While there has been a considerable amount of discussion lately with respect to what is likely to be done about the construction of a viaduct along the Toronto waterfront by the railways and the city, the matter is no nearer a settlement. R. P. Gough, one of the Canadian National Rys. directors was reported to have said in July: "A meeting of the C.N.R. directors will be held in Toronto on Aug. 20 when various matters of interest to the people of Toronto will be considered by the board, and particularly the question of grade separation on the waterfront, together with such steps as can be taken to open for public travel as soon as possible the new union station. It would be premature for me to express any opinion with respect to the action of the board in advance of this meeting, however I feel that I am not going too far when I say that the board is anxious to carry out any obligations into which it has entered, and I believe that the policy which it will eventually determine upon will be satisfactory to the people of Toronto. I have the interests of Toronto very much at heart, and in addition to fulfilling my full responsibility as a director of the C.N.R., I am always anxious to do whatever will best serve the interests of the city. Toronto is one of the most important cities on the C.N.R. lines; we derive a very large annual traffic from it, and we consider the goodwill of the community to be one of our most valuable assets."

In preparation for this meeting there was talk of a conference of civic officials with the directors. The mayor said he believed Sir Henry Thornton, President, C.N.R., would declare himself to be in favor of building the viaduct, and the city would work in harmony with him. T. L. Church, M.P. for North Toronto, was authorized by the Toronto Harbor Commissioners to arrange for a conference of all parties interested. The Minister of Railways, who was apparently invited to the conference, is reported to have informed Mr. Church that it would not be wise for him to interfere with a matter that could be dealt with by the railways and the city. Aug. 20 came and went, but the mayor and other Toronto officials were not invited to meet the C.N.R. directors, and R. P. Gough was

only able to attend the meeting for a short time, having business elsewhere, probably in connection with the inspection of the Home Bank, of which he was Vice President, and apparently the viaduct question was not dealt with. Following the meeting, Sir Henry Thornton was reported to have said that the question was one for settlement by the Toronto Terminals Ry. Co., that he believed that the C.P.R., as well as the C.N.R., is anxious to have it settled so that the new union station may be opened; but the matter is a big one and requires a great deal of deliberation before any conclusion can be reached. Within a year it would probably be possible to say what the railways would do.

Railway Earnings.

Canadian National Railways.

Canadian Railway and Marine World is again unable, as in August, to publish its usual comparative monthly table of C.N.R. earnings, owing to changes which have been made in the form in which they are furnished. The following figures have been supplied by the C.N.R. Publicity Department for the "Amalgamated System." Apparently they include the total revenue and expenses of some of the subsidiary companies which were not included formerly.

	Earnings	Expenses	Net	Increase
May	\$20,992,772	\$19,092,414	\$1,900,358	\$ 925,126
June	20,475,149	19,354,678	1,120,471	1,244,282

For 6 months ended June 30	\$116,778,673	\$115,266,441	\$1,512,232	\$4,438,229
Increases	\$14,208,039	\$ 9,769,810	\$4,438,229	.....

Another statement issued by the C.N.R. Publicity Department states the gross revenues for the Canadian National Rys., including the Central Vermont Ry., for June were \$21,216,499.11, operating expenses, \$20,039,053.85, net revenue, \$1,177,445.26.

The C.N.R. Publicity Department states that the Canadian National Rys. gross earnings for July were \$20,976,770, against \$19,333,721 in July, 1922; that for the 3 weeks ended Aug. 21 they were \$14,772,289, against \$13,682,333 for the same period in 1922, and that from Jan. 1 to Aug. 31 they were \$152,559,185.90, an increase of \$16,967,497.18 over same period in 1922.

Operating ratios—	1923	1922
January	102.57	110.46
February	116.55	107.71
March	102.10	98.92
April	89.93	107.09
May	90.95	94.72
June	94.53	100.68
For 6 months ended June 30	98.71	102.85

The C.N.R. official figures, as reported to the Dominion Bureau of Statistics for May, for practically Canadian lines only, are given on pg. 420 of this issue.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross.	Expenses.	Net.	Increase or Decrease
Jan.	\$13,148,914	\$12,428,888	\$ 720,026	* 236,549
Feb.	11,159,865	10,664,371	495,494	*158,994
Mar.	13,585,763	11,606,049	1,979,714	*440,793
April	13,651,494	11,700,615	1,950,879	*402,107
May	14,355,539	12,357,292	1,998,247	*346,266
June	14,943,919	12,521,918	2,422,001	59,687

\$80,845,493	\$71,279,133	\$9,566,360	*\$247,711
Incr. \$ 4,550,135	\$ 4,797,846	.....	.....
Decr.	\$ 247,711	.....	.....

Approximate gross earnings for July, \$15,118,000 and for three weeks ended Aug. 21, \$10,581,000, against \$13,940,000 and \$10,165,000 for same periods in 1922.

Allan Cameron, Oriental Manager, C.P.R., Hong Kong, China, writes: "I have been a subscriber to Canadian Railway and Marine World for many years, and enjoy it immensely."

Railway Rolling Stock Orders and Deliveries.

Belgo-Canadian Paper Co. has received 12 forestry cars from Canadian Car and Foundry Co.

Selmet Solvay Co. has received 1 four wheel (0-4-0) switching locomotive, with cylinders 14 x 22 in. from Montreal Locomotive Works.

Quebec Development Co. has received 3 four-wheel (0-4-0) switching locomotives, with cylinders 14 x 22 in. from Montreal Locomotive Works.

The C.P.R., between July 15 and Aug. 16, received 36 vans, 2 single truck steel snow ploughs and 1 steel underframe box car 36 ft. long, from its Angus shops, Montreal; 9 steel baggage and express cars from National Steel Car Corporation, and 4 Pacific (4-6-2) type locomotives, with cylinders 25 x 30 in. from Montreal Locomotive Works.

Canadian National Railways.

Canadian National Rys. have received 500 automobile cars and 12 first class passenger cars from Canadian Car and Foundry Co.

The Canadian National Rys. have ordered 1,000 forty-ton steel frame automobile cars from Pressed Steel Car Co., Chicago, Ill.

Canadian National Rys., between July 12 and Aug. 17, received 9 mountain type locomotives from Canadian Locomotive Co.

Canadian National Rys. have received 3 Mikado (2-8-2) locomotives, with cylinders 27 x 30 in. from Montreal Locomotive Works.

Canadian Railway and Marine World for July stated that the C.N.R. had ordered 44 locomotives from American Locomotive Co., for use on lines in the U.S., all of which are being built at Schenectady, N.Y. Following are the chief details of each type:

Consolidation

Number ordered	16
Service	Central Vermont Ry.
Cylinders, diar. and stroke	24 x 32 in.
Tractive power	50,000 lb.
Factor of adhesion	4.0
Wheel base, driving	17 ft.
“ “ total engine	25 ft. 10 in.
“ “ total engine and tender	59 ft. 1 1/4 in.
Weight in working order	227,000 lb.
Weight on drivers	200,000 lb.
“ on engine truck	270,000 lb.
“ engine and tender	387,000 lb.
Boiler, type	extended wagon top
“ diar. inside first ring	72 11/16 in.
“ working pressure	200 lb.
Firebox, length and width	102 1/2 x 75 1/4 in.
Tubes, no. and diar.	229 2 in.
Flues, no. and diar.	36 5 1/2 in.
Tubes and flues, length	15 ft.
Heating surface, tubes	1,803 sq. ft.
“ “ flues	755 sq. ft.
“ “ firebox	175 sq. ft.
“ “ arch tubes	28 sq. ft.
“ “ total	2,761 sq. ft.
Superheater surface	630 sq. ft.
Grate area	53.4 sq. ft.
Wheels, driving, diar.	63 in.
“ driving, material	cast steel
“ engine truck	rolled steel, 30 in.
“ tender truck	rolled steel, 33 in.
Journals, driving, main	10 1/2 x 14 in.
“ other	9 1/2 x 12 in.
“ engine truck	6 x 12 in.
“ tender truck	6 x 11 in.
Journal boxes	cast steel
Tank, type	water bottom
Water capacity	8,000 gals.
Coal capacity	16 tons

8-Wheel Switching

Number ordered	13
Service	8 for Central Vermont Ry., 5 for Grand Trunk Western.
Cylinders, diar. and stroke	22 x 28 in.
Tractive power	45,200
Factor of adhesion	4.45
Wheel base, total engine	14 ft. 6 in.
“ “ engine and tender	50 ft. 0 1/4 in.
Weight in working order	200,000 lb.
“ engine and tender	332,000 lb.
Boiler type	extended wagon top
Boiler, diar. inside first ring	73 in.
“ working pressure	200 lb.

Firebox, length and width	95 15/16 x 75 1/4 in.
Tubes, no. and diar.	210 2 in.
Flues, no. and diar.	32 5 1/2 in.
Tubes and flues, length	15 ft.
Heating surface, tubes	1,653 sq. ft.
“ “ flues	687 sq. ft.
“ “ firebox	165 sq. ft.
“ “ arch tubes	26 sq. ft.
“ “ total	2,531 sq. ft.
Superheater surface	580 sq. ft.
Grate area	50 sq. ft.
Wheels, driving type and diar.	cast steel, 54 in.
“ tender truck type and diar.	cast iron plate, 33 in.
Journals, driving	main 10 x 12 in.
“ “ other	9 1/2 x 12 in.
“ tender truck	5 1/2 x 10 in.
Journal boxes	cast steel
Brakes	Westinghouse American
Tender frame	cast steel
Tank, type	water bottom
Water capacity	6,000 gals.
Coal capacity	9 tons

Pacific

Number ordered	10
Service	Grand Trunk Western
Cylinders, diar. and stroke	25 x 28 in.
Tractive power	40,700 lb.
Factor of adhesion	4.05
Wheel base, driving	13 ft.
“ “ total engine	34 ft. 11 in.
“ “ total engine and tender	70 ft. 7 1/2 in.
Weight in working order	280,000 lb.
“ on drivers	165,000 lb.
“ on trailer	58,000 lb.
“ on engine truck	57,000 lb.
“ engine and tender	474,000 lb.
Boiler, type	Conical Conn.
“ diar. inside first ring	74 1/2 in.
“ working pressure	200 lb.
Firebox, length and width	114 1/8 x 84 1/4 in.
Tubes, no. and diar.	188 2 1/4 in.
Flues, no. and diar.	36 5 1/2 in.
Tubes and flues, length	19 ft.
Heating surface, tubes	2,092 sq. ft.
“ “ flues	980 sq. ft.
“ “ firebox	242 sq. ft.
“ “ arch tubes	27 sq. ft.
“ “ total	3,341 sq. ft.
Superheater surface	794 sq. ft.
Grate area	66.7 sq. ft.
Wheels, driving, type and diar.	cast steel, 73 in.
“ engine truck type and diar.	rolled steel 33 in.
“ trailing truck, type and diar.	cast steel, 43 in.
“ tender, type and diar.	rolled steel, 36 in.
Driving journals	main 11 x 13 in.
“ other	10 x 13 in.
Journals, engine truck	6 1/2 x 12 in.
“ trailing truck	9 x 14 in.
“ tender truck	6 x 11 in.
Journal boxes	cast steel
Brakes	Westinghouse American
Air signal	Westinghouse
Engine and trailing truck	Commonwealth constant resistance
Tender frame	cast steel
Tank type	water bottom
Water capacity	10,000 gals.
Coal capacity	16 tons

Mikado

Number ordered	10
Service	Grand Trunk Western
Cylinders, diar. and stroke	26 x 30 in.
Tractive power	54,700 lb.
Factor of adhesion	4.18
Wheel base, driving	16 ft. 9 in.
“ “ total engine	36 ft. 1 in.
“ “ total engine and tender	71 ft. 5 1/2 in.
Weight in working order	304,000 lb.
“ on drivers	28,500 lb.
“ on trailer	54,500 lb.
“ on engine truck	21,000 lb.
“ engine and tender	494,000 lb.
Boiler, type	Conical Conn.
“ diar. inside first ring	76 1/2 in.
“ working pressure	200 lb.
Firebox, length and width	114 1/8 x 84 1/4 in.
Tubes, no. and diar.	216 2 1/4 in.
Flues, no. and diar.	40 5 1/2 in.
Tubes and flues, length	19 ft.
Heating surface, tubes	2,407 sq. ft.
“ “ flues	1,090 sq. ft.
“ “ firebox	253 sq. ft.
“ “ arch tubes	27 sq. ft.
“ “ total	3,777 sq. ft.

500 70-ton steel hopper coal cars.

500 “ “ “ “ “ “

500 “ “ “ “ “ “

500 “ “ “ “ “ “

15 Steel passenger cars

30 “ “ “ “ “ “

45 “ “ “ “ “ “

5 Steel combination passenger and baggage cars.

5 Steel combination passenger and baggage cars, suburban type.

5 Steel baggage cars

25 Consolidation locomotives

Total

Superheater surface	882 sq. ft.
Grate area	66.7 sq. ft.
Wheels, driving, type and diar.	cast steel, 63 in.
“ “ engine and tender truck, type and diar.	rolled steel, 33 in.
“ “ trailing truck, type and diar.	cast steel, 43 in.

Journals, driving	main 11 x 13 in.
“ “ other	10 x 13 in.
“ engine truck	6 1/2 x 12 in.
“ trailing truck	9 x 14 in.
“ tender truck	6 x 11 in.
Journal boxes	cast steel
Brakes	Westinghouse American
Air signal	Westinghouse
Tender frame	cast steel
Tank type	water leg
Water capacity	10,000 gals.
Coal capacity	16 tons

The Canadian National Rys. single sheathed box cars, 60 tons capacity, 750 of which have been ordered from Canadian Car and Foundry Co. and 250 from National Steel Car Corporation, as mentioned in our last issue, will be equipped with steel underframes of fish belly center sills type, arch bar type of trucks, 5 1/2 x 10 in. journals, Camel door fixtures, Westinghouse air brakes, KC 1012, etc. Of the total number of cars, 500 will be equipped with Miner A-2-S draft gear, with Farlow 2-key attachment, and 500 with Cardwell draft gear; 3 different types of side bearings will be used, viz., Laughlin, Stucki, and Woods; 3 different types of journal boxes will also be used, viz., National, McCord, and Symington; Hutchins all steel flexible 16 g. steel roofs will be used on 750 of the cars, and Chicago Cleveland Car Roofing Co's Viking outside metal roofs on 250. The chief dimensions are as follows:

Capacity	120,000 lb.
Length inside	40 1/2 ft.
Width inside	8 1/2 ft.
Height, floor to bottom of carline	9 ft.
Width of side door opening	6 ft.
Height of side door opening	8 ft. 7 15/16 in.
Height, rail to floor	3 ft. 8 in.
Height, rail to bearing surface of center plates	2 ft. 1 1/4 in.
Center to center of bolsters	31 ft.
Height, rail to top of running board	13 ft. 10 in.

United States Orders

U.S. locomotive builders shipped more locomotives in July, 1923, than in June, 1923, or in July, 1922, but there were fewer unfilled orders on hand at the end of July, 1923, than at the end of June, 1923, although there were more than twice as many as there were at the end of July, 1922. In July, 1923, 239 locomotives were shipped from the builders' plants, compared with 232 in June, 1923, and 128 in July, 1922. In the first seven months of 1923 1,644 were shipped, compared with 490 in the corresponding period of 1922. At the end of July, 1923, there were on hand unfilled orders for 1,738, compared with 1,958 at the end of June, 1923, and 811 at the end of July, 1922. Of the 1,738 unfilled orders on hand at the end of July, 1923, 1,652 were for service in the U.S. and 86 for export.

The Interstate Commerce Commission has authorized the Philadelphia and Reading Ry. to issue equipment trust certificates from the proceeds of which the following rolling stock which has been received, is to be paid for:

	Unit price.	Total cost.
500 70-ton steel hopper coal cars.	\$2,072.45	\$1,036,224.33
500 “ “ “ “ “ “	2,135.37	1,067,682.72
500 “ “ “ “ “ “	2,067.82	1,033,908.33
500 “ “ “ “ “ “	2,075.58	1,037,790.50
15 Steel passenger cars	18,710.62	280,659.30
30 “ “ “ “ “ “	18,723.19	561,695.76
45 “ “ “ “ “ “	17,189.97	778,548.44
5 Steel combination passenger and baggage cars.	17,550.97	87,754.84
5 Steel combination passenger and baggage cars, suburban type.	16,702.12	83,510.60
5 Steel baggage cars	17,241.68	86,208.41
25 Consolidation locomotives	38,192.00	954,800.07
Total		\$7,003,783.30

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Board of Railway Commissioners.—W. R. FOLLIS, heretofore passenger locomotive man, C.P.R., running between Toronto and Hamilton, has been appointed Inspector of Railway Safety Appliances, with office at Toronto, vice L. D. Gillett, deceased.

Canadian National Rys.—D. E. BROWN.—Sir Henry W. Thornton, President, has issued a circular as follows: "Until further notice, the accounting and financial departments will be under the direction of D. E. Brown, Chief Assistant to Financial Vice President. The appropriate officers in those departments will report to and receive instructions from him, and he will, in turn, report directly to the President, in all matters relating to accounting and finance." Office, Montreal.

MAJOR J. L. CHARLES, heretofore Resident Engineer, Neebing Yard, Fort William, Ont., has been appointed Terminal Engineer, there vice S. B. Wass, appointed Engineer in charge of construction, Toronto Eastern Ry., Oshawa, Ont. It is not anticipated that the position of Resident Engineer, Neebing Yard, will be filled.

A. DEVINE, heretofore Master Mechanic, Campbellton, N.B., has been appointed Master Mechanic, Edmundston, N.B., vice H. D. Mackenzie, appointed Master Mechanic, Campbellton, N.B.

R. GILMOUR, heretofore Superintendent, Montreal Terminals, has been appointed Assistant to General Superintendent, Montreal District, Central Region. Office, Montreal.

J. B. HERON, heretofore on location and construction work between Ottawa and Capreol, Ont., has been appointed Resident Engineer, Toronto Eastern Ry. Office, Oshawa, Ont.

GEO. C. JONES, heretofore Assistant Manager, Central Region, Canadian National Rys., Montreal, has been appointed General Manager, Telegraph and Telephone Department, C.N.R., including Canadian National Telegraphs, Geo. D. Perry, Vice President and General Manager, Canadian National Telegraphs, having retired after long and faithful service. Office, Toronto.

H. L. McCaughey, heretofore City Passenger Agent, Chicago, Ill., has been appointed General Agent, there, vice C. G. Orttenberger, appointed General Western Passenger Agent, Chicago, Ill.

J. H. McDIARMID, heretofore Assistant Superintendent, Fort William Division, Manitoba District, Sioux Lookout, Ont., has been appointed Yardmaster, Transcona, Man.

H. D. MACKENZIE, heretofore Master Mechanic, Edmundston, N.B., has been appointed Master Mechanic, Campbellton, N.B., vice A. Devine, appointed Master Mechanic, Edmundston, N.B.

Y. MOODY, Assistant Superintendent, Sleeping, Dining, Parlor Cars, and Railway Restaurants, Central Region, has been appointed acting Superintendent, of that department, Toronto, while E. W. Smith is acting General Superintendent at Montreal.

W. S. MURPHY, heretofore Assistant Chief of Wage Bureau, Montreal, has been appointed by S. J. Hungerford, Vice President, Operation and Construction, as General Time Supervisor, with jurisdiction

over all steam lines. It will be his duty to reorganize the timekeeping service, supervise the same, and take up with the proper territorial officers, any matters relating thereto, and he will also give special attention to matters relating to economical operation. Office, Montreal.

J. NEWMAN, heretofore in charge of yard, Stratford, Ont., has been appointed Roadmaster between Paris Jct. and Goderich, Goderich Subdivision, and of Otterville Subdivision, Stratford Division, Southwestern Ontario District, Central Region, vice C. J. Carey deceased. Office, Stratford, Ont.

C. G. ORTTENBERGER, heretofore General Agent, Chicago, Ill., has been appointed General Western Passenger Agent, with jurisdiction in Chicago, Ill., and the State of Ohio. Office, Chicago.

C. PRICE-GREEN, heretofore Commissioner, Industrial and Resources Department, Toronto, has been appointed Commissioner, Colonization and Development Department, reporting to W. D.



H. E. Whittenberger,
General Manager, Grand Trunk Western Lines,
Canadian National Railways.

Robb, one of the Vice Presidents. Office, Montreal.

R. C. RENNIE has been appointed acting Assistant Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, Central Region, Toronto, while Y. Moody is acting Superintendent of that department.

F. A. RUTHERFORD, heretofore Passenger Trainmaster, Southwestern Ontario District, Central Region, Toronto, has been appointed Superintendent of Transportation, Montreal District, Central Region, vice C. M. Walton, appointed Superintendent, Montreal Terminals. Office, Montreal.

E. W. SMITH, Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, Central Region, Toronto, has been appointed acting General Superintendent of that department, during the absence of J. M. Grieve, who has been

granted 3 months sick leave. Office, Montreal.

J. P. TOBIN has been appointed City Passenger Agent, Chicago, Ill., vice H. L. McCaughey, appointed General Agent, Passenger Department, there.

H. L. VERCOE, at one time in the Engineering Department, has been appointed Special Engineer on Electric Lines. Office, Toronto.

W. WALKDEN, heretofore Assistant Bridge Engineer, Western Region, Winnipeg, has been appointed Bridge Engineer, Western Region, vice J. G. LeGrand, deceased. Office, Winnipeg.

C. M. WALTON, heretofore Superintendent of Transportation, Montreal District, Central Region, Montreal, has been appointed Superintendent, Montreal Terminals, Montreal District, Central Region, vice R. Gilmour, appointed Assistant to General Superintendent, Montreal District, Central Region. Office, Montreal.

H. E. WHITTENBERGER, heretofore Manager, Michigan District, Central Region, has been appointed General Manager, all lines west of the Detroit and St. Clair Rivers, which has been detached from the Central Region and are designated "Grand Trunk Western," for operating purposes. Office, Detroit, Mich. He reports to S. J. Hungerford, Vice President, Operation and Construction, Montreal, instead of to C. G. Bower, General Manager, Central Region, as heretofore. The Manager of Car Ferries, (C. H. Nicholson), reports to the General Manager, Grand Trunk Western, in respect to Lake Michigan ferries, and to the General Manager, Central Region, in respect to Detroit River and Lake Ontario ferries, and Canada Atlantic Transit Co's services.

R. WRIGHT, heretofore Division Agent, Toronto, has been appointed Passenger Trainmaster, Southwestern Ontario District, Central Region, Toronto, vice F. A. Rutherford, appointed Superintendent of Transportation, Montreal.

Canadian Pacific Ry.—**J. M. CAMPBELL**, heretofore Division Engineer, Portage Division, Manitoba District, Winnipeg, has been appointed Division Engineer, Moose Jaw Division, Saskatchewan District, Moose Jaw, vice C. S. Moss, appointed Division Engineer, at Nelson, B.C.

T. MARTIN, heretofore Division Engineer, Nelson Division, British Columbia District, Nelson, has been appointed Division Engineer, Portage Division, Manitoba District. Office, Winnipeg.

C. S. MOSS, heretofore Division Engineer, Moose Jaw Division, Moose Jaw, Sask., has been appointed Division Engineer, Nelson Division, British Columbia District, vice T. Martin. Office, Nelson, B.C.

A. SWANSON has been appointed Roadmaster, from mile 68 to Neudorf, Lanigan Subdivision, Saskatoon Division, Saskatchewan District, vice O. Hibbert, transferred. Office, Lipton, Sask.

Newfoundland Railway.—**H. J. RUSSEL**, heretofore Superintendent, Eastern Division, and Assistant to General Manager, has been appointed acting General Manager, R. C. Morgan, General Manager, having resumed his former position with the C.P.R. at Winnipeg, as announced in a previous issue. Office, St. John's, Nfld.

Toronto Eastern Ry.—See Canadian National Rys.

The Canadian National Rys. Car Buying in the United States.

In connection with complaints about the Canadian National Rys. having ordered cars in the United States, recently, Sir Henry Thornton, President, is reported to have said: "A thousand automobile box cars have been ordered to be built in the U.S. for the Canadian National Rys., and they are going to stay ordered. The time has come when it must be clearly laid down that a dissatisfied contractor cannot come in and take charge of running this railway system. Tenders were originally called for these cars in Canada. Later, it was brought to my notice that as the cars were to be almost exclusively used on the C.N.R. in the U.S., they would be subject to 30% duty on entering the U.S., if manufactured in Canada. This duty would have added \$1,000,000 to the cost, and rendered it impossible to place the order in Canada. Either they had to be made in the U.S. or not at all. Some of the people whom I invited to show me how I could give the order in Canada, and who admitted they did not see how it could be done, have now started to agitate, apparently with the idea of hampering the C.N.R. They went to Mr. Smith, the head of the Canadian Manufacturers' Association, and he came to see me. After I had put the facts before him he declined to interfere any further in the matter. I can tell you that neither the Canadian Car & Foundry Co. nor the Eastern Car Co. are in on this agitation. I spoke with Mr. Wolvin about this matter and while regretting that the order should go out of Canada, he agreed that there did not seem to be any other alternative. Incidentally, I may add that we are saving a big sum of money on the tenders, and that is to be spent among Canadian firms in additional equipment, which I could not otherwise have bought."

The National Steel Car Corporation's Stand.

The Montreal Star published an interview with R. J. Magor, President, National Steel Car Corporation, on May 21, crediting him with saying as follows: "All we hear from one end of this country to the other is the slogan, 'Buy in Canada,' but when we come down to realities and purchases are actually being made, we find that all kinds of reasons are given by the purchaser why it is necessary that items required should be bought outside of this country. The slogan, 'Buy in Canada,' does not seem to hold water when the test comes, and in consequence both labor and industry, which are the backbone of the country, suffer. Several U.S. railways operating in Canada never buy any equipment in this country, and a definite policy should be outlined by the authorities in Ottawa in order to determine what percentage of U.S. equipment used here on U.S. owned railways should be purchased in this country. Having just returned from spending the week-end in the Laurentian Mountains, I did not see, until you showed it to me, the article which appeared in the Star of Aug. 18, in reference to the purchase of 1,000 cars by C.N.R. in the U.S., and I am naturally not in a position to say what Sir Henry had in mind when he gave this interview. We, of course, were anxious to secure our share of this business, and naturally would be very severely criticized by our directors and stockholders if we did not put forth every effort to secure orders to keep our factory operating, particularly when orders

here in Canada are so scarce. Last March apparently the same condition existed, in connection with the last 1,000 automobile cars which were purchased by the C.N.R. The Canadian Manufacturers' Association and car companies and other manufacturers interested, were active in keeping this business in Canada, and the final decision was favorable, as our plant is now producing a share of this order.

"However, I do not think the problem is reduced to any one specific order, but on account of the many ramifications of this complicated matter, a determined stand should, in my opinion, be taken by the C.N.R., the manufacturers and all interested, in securing a ruling from Ottawa as to just where they all stand.

"We have at present a condition where the C.N.R. are operating 1,000 or more miles of railway in the U.S., and U.S. railways operating even a greater mileage in Canada, and on the one hand, the Canadian railways in the U.S. are forced, as in this particular instance, to buy there, whereas on the other hand, I have never heard of our Government taking any stand in forcing the U.S. lines in Canada to purchase a proper percentage of their equipment up here. This practice, if carried far enough, could absolutely ruin this country, as it is a known fact that the railways are the biggest buyers in practically any country, and prosperity is usually gauged by their buying activity; so, if our railways buy in the U.S., and the U.S. lines do not purchase here, it means a constant flow of money across the border, accentuating the already adverse financial and trade conditions that exist. It means reduced employment in this country, which will tend to accentuate the migration of our population across the border. This reduces our bank deposits, and lessens the quantity of commodities that have to be transported by our railways. It means increased producing costs of manufactured products in this country, as the smaller the demand, correspondingly higher is the cost of production. It further means that, with the low price (on account of having to pay no duty or tax), of U.S. freight equipment, in use on U.S. lines in this country, competing against the higher price of Canadian equipment purchased here, and on which duty and tax have been paid to the Canadian Government, that a condition exists where the income from the respective cars is the same, and the earnings therefore on the higher priced Canadian equipment is securing a smaller return on the money invested, so that it seems to me that the railway and manufacturing interests should strenuously take up this matter.

"We hear continually the slogan, 'Buy in Canada,' and I have before me an article headed 'Produced in Canada Campaign, 1923'; but the process of permitting such conditions as I have outlined above to exist, absolutely holds up to ridicule this all-important slogan I have just quoted, as assuredly this country cannot possibly be successful and attain the position in the world that it is entitled to, unless we give up this penny-wise and pound-foolish idea, in other words, we make all our five-cent purchases in Canada, and our dollar purchases elsewhere. In talking this matter over with the officials of the Canadian Manufacturer's Association, they have advised me that this specific matter is under investigation, and they are secur-

ing data relative to the tonnage being moved by U.S. lines in Canada, and when they have it completely compiled, they propose to use their good offices by endeavoring to secure the passing of proper regulations that will ensure the purchase in Canada of a proper percentage of this U.S. equipment, and I certainly trust that they will secure the results which this problem deserves, but, in order to secure these results, the closest kind of co-operation between all interests is essential."

Tie Creosoting Contract Negotiations.

Canadian Railway and Marine World for July stated that Major General Alex. McDougall, C.B., formerly of Ottawa, and latterly of London, Eng., was representing Calders Limited of London, in negotiations with the Canadian National Rys. for creosoting ties, and that it was proposed to establish two plants, one near Cochrane, Ont., and the other near Quebec, Que.; that the proposed contract would be for 10 years from Aug. 1, 1924, subject to renewal, and would provide for the treatment of a minimum of 300,000 ties a year at the Cochrane plant and a similar number at the Quebec plant. We also stated that negotiations were going on with the Timiskaming & Northern Ontario Ry., for tie treatment at the Cochrane plant, and with the C. P.R. for tie treatment at the Quebec plant. We understand that the negotiations with the Canadian National Rys. and the T. & N. O. R. are still going on, but that up to Aug. 21 no agreement had been entered into. The giving of a contract by the C.N.R. for treating at Cochrane appears to be dependent on the T. & N. O. Ry. also giving one, so that a lower price may be secured for the larger number to be treated, and in this connection we are advised the T. & N. O. R. negotiations are for the treating of from 150,000 to 200,000 a year.

We are also advised that Calders, Canada, Limited has been formed to operate creosoting plants, that it will erect them at Cochrane and Quebec, that the chairman will be either John J. Calder, or Sir James Calder, C.B., of London, and that Major General Alex. McDougall will be Managing Director.

The Pacific Great Eastern Railway's Future.

Montreal press dispatch, Aug. 24.—It is reported here that an agreement is practically completed whereby the C.P.R. will take over the operation of the Pacific Great Eastern Ry. from the British Columbia Government. The contract is said to cover 10 years and to provide for the acquisition of the 422 miles of line at the end of that time if the company so desires. It will likely be linked up with the Edmonton, Dunvegan and B.C. line, now operated by the C.P.R. It is declared here that plans call for Vancouver being the terminal for Peace River grain shipments when the line is completed to link up with the E.D. and B.C. and eventually with the Alberta Great Waterways Ry. running to Fort McMurray.

A subsequent Montreal press dispatch credited E. W. Beatty, K.C., President, C.P.R., with stating that there was no foundation for the press dispatch quoted and that no negotiations had taken place.

Traffic Orders by Board of Railway Commissioners.

Demurrage on Lumber from United States.

33,938. July 27.—Re application of Canadian National Ry. Co. for an order restricting the time during which carloads of lumber and forest products shipped from the United States to Canada shall be held without demurrage charges at rate-basing points, awaiting reconsignment instruction, from 48 hours (as required under order 22,237, July 18, 1914) to 24 hours. Upon the report and recommendation of its Chief Traffic Officer, the complainants under order 22,237 having been advised of this application and having made no objection thereto, the Board orders that order 22,237, dated July 18, 1914, be amended by striking out paragraph (3) of the operative part thereof, and substituting the following therefor: "3. Demurrage be charged and collected in accordance with Canadian Car Demurrage Rules upon any such cars delayed at said rate-basing point over 24 hours free time awaiting reconsignment instructions." That this amendment be effective from Aug. 1, 1923.

Release Form for Empty Cream Cans

33,956. July 5. The Express Traffic Association of Canada's application under the Railway Act, 1919, sec. 365, for an order approving a form of release for empty cream cans left on station platforms. Upon hearing the application at Edmonton and Calgary, Alta., on June 26 and July 10; at Regina, Sask., on July 12, and at Winnipeg, on July 16, in the presence of counsel for the Traffic Association, the Alberta Dairymen's Association, the United Farmers of Alberta and the Saskatchewan Co-operative Creameries, Ltd., and upon the evidence offered and what was alleged. The Board orders that the application be dismissed.

Supplement to Express Classification.

33,961. Aug. 1. Re the Express Traffic Association of Canada's application for approval of Supplement E to Express Classification for Canada, no. 5. Upon reading what has been filed in support of the application, and on behalf of the Canadian Manufacturers' Association, the Montreal and Toronto Boards of Trade, and upon the report and recommendation of its Chief Traffic Officer, the board orders that the said supplement be approved.

Windsor, Essex and Lake Shore Rapid Ry. Freight Tariff.

33,966. July 31. Re Windsor, Essex and Lake Shore Rapid Ry's application under the Railway Act, 1919, sec. 330, for approval of its standard mileage freight tariff C.R.C., 307. Upon reading the application and what is filed in support thereof, no objection to the proposed tariff having been filed, the board orders that the said tariff be approved.

Great Northern Railway's Log Tariff.

34,021. Aug. 10. Re A. J. Farquharson's application for a revised minimum shipping weight on carloads of logs shipped from his spur at mile 65 of the Great Northern Ry. Co. to Fernie, B.C. Upon hearing the application at Fernie on July 9, 1923, in the presence of the applicant and a representative of the Great Northern Ry. Co.; the evidence offered and what was alleged, and upon the report and recommendation of its Chief Traffic Officer, the board orders that the G.N.R. revise its tariff on logs shipped in carloads from the applicant's

spur, to provide for a minimum for carloads of 8,000 ft. a car, except that the minimum will be 7,000 ft. a car, where cars of 60,000 lb. capacity or less are furnished; such revised tariff to be filed for the Board's approval, and to become effective two weeks from this date.

Express Classification Supplement Approved.

34,037. Aug. 13.—Re Express Traffic Association of Canada's application for approval of Supplement F to Express Classification for Canada, no. 5. Upon reading what has been filed in support of the application, and on behalf of the Canadian Manufacturers' Association and the Montreal and Toronto Boards of Trade, and upon its Chief Traffic Officer's report and recommendation, the Board orders that the said supplement be approved.

Abolition of Halifax Export and Import Arbitrary.

At the time of the extension of the Intercolonial Ry's service to Montreal some years ago, when running rights were secured over the G.T.R. from Ste. Rosalie to Montreal, an agreement was made between the Dominion Government and the G.T.R., establishing the rates on export and import traffic from and to overseas British and foreign countries at 1c per 100 lb. over St. John, N.B. We are officially advised that it has now been agreed between the Government and the Canadian National Rys. management that the clause of the agreement will be suspended, and in consequence the C.N.R. tariffs will be amended on or about Oct. 1, by eliminating the differential mentioned. The change will put Halifax on a parity with other Atlantic ports for handling export and import business.

In this connection J. E. Dalrymple, Vice President, Traffic Department, C. N.R., telegraphed the Halifax Board of Trade on Aug. 15 as follows: "Am pleased to advise you that we are preparing tariffs eliminating the so-called one-cent arbitrary rate on export and import traffic to and from European and continental ports via Halifax. This change does not apply to furtherance, nor Newfoundland, business. The new arrangement will be effective about Oct. 1 next."

Canadian Railways and United States Grouping Plans.

In connection with the proposals for the grouping of railways in the United States, now under consideration, the Boston Chamber of Commerce committee issued a report, Aug. 18, upon the Storrow committee's proposals for the unification of the New England railways. The Chairman of Commerce Committee recommends the rejection of the proposals to consolidate the New England lines with one of the great trunk roads, and urges the consolidation of the New England lines, with the exception of the Boston and Albany Rd., and the Grand Trunk Ry., into the New England system. The report says in part:—"The Canadian rail routes are far more important than appears from the percentage of New England traffic which they handle. The differential rates via these routes attract sufficient business at all times to keep them open, and in time of embargo and congestion, which have occurred so frequently, traffic via Canadian lines largely increases and it often happens

that the Canadian routes are the only open channels of communication between New England and the west. The experience of the past six months indicates the vital necessity to New England industry of keeping alive and increasing in efficiency every line and every gateway reached by New England rails. To us it seems clear that trunk line control would practically end all advantages which New England now enjoys by these differential routes, and by many of the gateways now open to New England industries. Obviously the main reason for trunk lines acquiring control of New England railroads would be to control the routing of freight. This would mean, as has been pointed out, the speedy destruction of the rail differential routes."

Buffalo and Fort Erie Bridge Co.

The Dominion Parliament has incorporated the Buffalo & Fort Erie Bridge Co., with authorized capital of \$500,000, and office at Fort Erie, Ont., to build a general traffic bridge, with accommodation for electric railway cars, across the Niagara River, between Walnut St., Fort Erie, and Hampshire St., Buffalo, N.Y., the provisional directors being W. F. Wilson, W. Douglas, R. Cooper, W. M. German, M.P., L. B. Duff, of Welland, Ont.; D. McGillivray and C. Steele, of Port Colborne, Ont. The company is reported to have obtained the New York State Land Board's approval for the erection of the bridge, and a similar application is before the War Department. An organization meeting is reported to have been held in Fort Erie, Aug. 9, and to have elected the following directors: W. M. German, M.P., President; D. McGillivray, Vice President; W. Douglas, Fort Erie, Secretary; W. F. Wilson, Fort Erie, Treasurer; J. C. Duffin, L. B. Spencer, Welland; W. G. Wilson, M.L.A., Ridgeway, C. E. Steele, Port Colborne; H. H. Greene, New York. The company, it is said, proposes to issue \$3,000,000 of 7% bonds at 96½. A meeting of shareholders was called, to be held at Fort Erie, Aug. 23, to arrange for amalgamation with the U. S. company, and for other purposes.

Railway Finance, Meetings, Etc.

Canadian Pacific Ry.—The directors, on Aug. 13, declared the following dividends: On preference stock, 2% for half year ended June 30; on common stock, 2½% for quarter ended June 30, from railway revenues and special income. Both dividends are payable on Oct. 1 to stockholders of record Aug. 31.

Canadian National Rys.—There has been deposited with the Secretary of State at Ottawa a first mortgage made between the Canadian National Rys. as mortgagors, the Minister of Finance and Receiver General as trustee and the Dominion of Canada as guarantor, securing an issue of \$22,500,000 of C.N.R. 5% serial guaranteed bonds in connection with Equipment, Series G, 1923. Particulars of the sale of the bonds to a Toronto syndicate were given in Canadian Railway and Marine World for August, pg. 380.

Pennsylvania Rd. and Pere Marquette Ry.—We are officially advised that the Pennsylvania Rd. Co. has not made any overtures whatever to the P. M. Ry. Co. for running rights over the latter's lines in Canada, as stated recently in the daily newspapers.

Mainly About Railway People Throughout Canada.

Mrs. Baker, wife of W. R. Baker, C.V.O. ex Secretary, C.P.R. Co., who has been spending some months in Austria and Germany, has returned to Montreal.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, left Ottawa, Aug. 9, for New York, whence he sailed for England, on railway business. He will, later, join the Minister of Railways and Canals, at a meeting of the League of Nations at Geneva, Switzerland.

David R. Bell, one of the most widely known conductors on the C.P.R., died at Guelph, Ont., Aug. 5, from pneumonia. He was born at Toronto, July 19, 1862, entered C.P.R. service Aug. 11, 1884, as freight conductor, and subsequently was passenger conductor. For a short while he was Superintendent at Toronto, but at his own request was returned to passenger service as conductor.

Mrs. M. S. Blaiklock, wife of M. S. Blaiklock, Assistant Chief Engineer, Operation Department, Canadian National Rys., Montreal, who spent a portion of the summer at Metis, Que., went to her summer home at Sonnevill, Que., early in August, for the balance of the season.

C. G. Bowker, General Manager, Central Region, Canadian National Rys., Toronto, and R. Muirhead, Yardmaster, Don station, Toronto, had a narrow escape while fishing on the Lake of Bays, during the third week of August. In attempting to land a fish, Mr. Bowker stumbled in the boat which capsized, but both he and Mr. Muirhead being good swimmers, they managed to keep afloat until another guest at the Wawa Hotel rescued them.

E. R. Bremner, of W. C. Edwards Co., wholesale lumber, Ottawa, formerly Assistant General Freight Agent, Canada Atlantic Ry., Ottawa, and afterwards Division Freight Agent, G.T.R. there, is one of the directors of Ottawa and Hull Power Co., which has been formed to acquire the Ottawa and Hull Power and Manufacturing Co.

Sir George McLaren Brown, European General Manager, C.P.R., London, Eng., has been re-elected President of the Canadian Chamber of Commerce there.

Stuart B. Brown, who has been appointed Manager, Transportation Department, Canadian Manufacturers' Association, Toronto, was born at Ottawa, Ont., Jan. 14, 1891, and entered transportation service July 1, 1906, since when he has been, to Sept. 1, 1907, clerk, local freight department, Ottawa & New York Ry., Ottawa; Sept. 1, 1907, to May 1, 1908, clerk, General Freight Department, same road, Ottawa; May 1, 1908, to Nov. 10, 1911, clerk, Tariff Bureau, New York Central Rd., New York; Nov. 10, 1911, to July 15, 1912, in private business; July 15, 1912, to Jan. 17, 1919, Assistant to Manager, Transportation Department, Canadian Manufacturers' Association, Toronto; Jan. 17, 1919, to June 28, 1923, Assistant Manager, same department, C.M.A., Toronto.

H. V. Caldwell, District Passenger Agent, Canadian National Rys., Liverpool, Eng., arrived in Canada, Aug. 6, and spent a short time in the Maritime Provinces, before proceeding to the Pacific Coast, on a tour of the Dominion, in the company's interests, to obtain first hand information for prospective

immigrants and tourists from Great Britain.

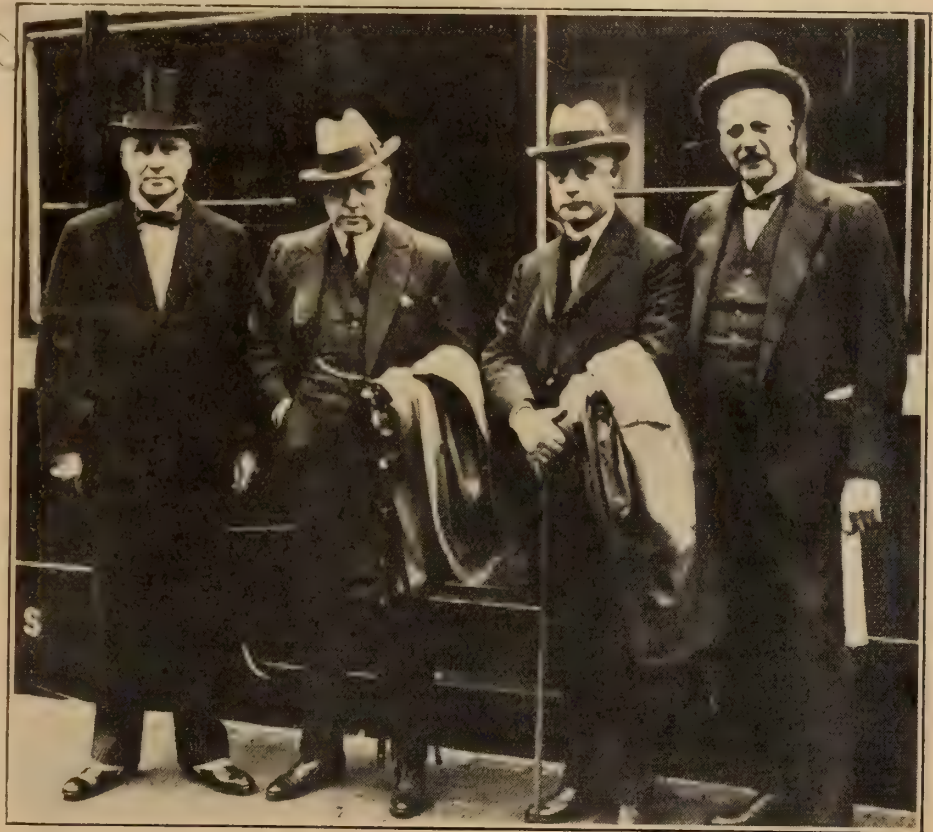
C. J. Carey, Supervisor of Track, Canadian National Rys., Stratford, Ont., died there suddenly, Aug. 7, aged 52. He entered G.T.R. service in 1885 and prior to his appointment at Stratford, was Roadmaster at Brantford, Ont.

Granville Carlyle Cunningham, formerly of Canada, and now living at Farnham Common, Buckinghamshire, Eng., celebrated his 'golden wedding' there, Aug. 14, having been married at St. James Cathedral, Toronto, Aug. 14, 1873. He was born at Edinburgh, Scotland, April 27, 1847, and is a son of the late Alexander Cunningham, Secretary to the Commissioners of Northern Lighthouses, (Great Britain), his mother being a daughter of the late R. P. Crooks,

sulting engineer. He is a member of the Institution of Civil Engineers, England, and Engineering Institute of Canada.

H. R. Charlton, Manager, Advertising Bureau, Canadian National Rys., Montreal, was in France early in August, in connection with the Canadian exhibition train at Dijon and other points, and returned to London, Eng., Aug. 17, to place contracts for the erection of a C.N.R. building at the Empire Exhibition at Wembley.

J. E. Dalrymple, Vice President, Traffic, Canadian National Rys., Montreal, returned east from Winnipeg, early in August, and was met in Toronto by Mrs. Dalrymple, who accompanied him to Buffalo, Chicago and Pittsburgh, prior to returning to Montreal.



E. W. Beatty, K.C., President, C.P.R., leaving London, Eng., for Canada, recently. Left to right—Sir Hamar Greenwood; E. W. Beatty; Senator Smeaton White, Montreal; Sir George McLaren Brown, K.B.E., European General Manager, C.P.R.

barrister, Toronto. He was educated in Edinburgh, and from 1870 to 1871 was engaged in surveying for a railway in Honduras; 1871 to 1874, in railway work in Ontario; 1874 to 1875, on preliminary surveys for C.P.R.; 1875 to 1879, engineer in charge, Prince Edward Island Ry., and of harbors on the island; 1879 to 1881, on Canada Southern Ry.; 1881 to 1883, Chief Engineer, same railway; 1884 to 1886, General Assistant to Manager of Construction, Rocky Mountain Division, C.P.R.; 1886 to 1889, railway contractor in Lower Canada; 1889 to 1892, Assistant City Engineer and City Engineer, Toronto; 1892 to 1897, General Manager and Chief Engineer, Montreal St. Ry.; 1897 to 1899, Managing Director, City Tramways, Birmingham, Eng.; 1899 to 1911, General Manager, Central London (Tube) Ry., London, Eng., since when he has acted as a con-

F. O. Finn, General Agent, Chicago, Milwaukee and St. Paul Ry., Victoria, B.C., left recently for London, Eng., on a holiday.

C. O. Foss, formerly District Engineer, National Transcontinental Ry., and Chief Engineer, St. John Valley Ry., and latterly Chief Engineer, New Brunswick Hydro Commission, has resigned, and has removed to New Hampshire.

Hon. G. P. Graham, Minister of Railways and Canals, left Ottawa, Aug. 22, for Montreal, and sailed on Aug. 25 for Europe, to represent Canada at the League of Nations meeting at Geneva, Switzerland, and at the Imperial Economic Conference in London. He was accompanied by Mrs. Graham and his private secretary, Miss Hazel Sherritt.

H. C. Grout, General Superintendent, Ontario District, C.P.R., Toronto, spent

part of his holidays in August, in St. John, N.B., where he was General Superintendent formerly, and at Westfield, N.B. Mrs. Grout accompanied him.

Mrs. Grant Hall, wife of the Vice President, C.P.R., returned to Montreal, early in August, after spending a month at Guelph, Ont.

W. A. Hendry, Chief Engineer of Highways for Nova Scotia, who died at Halifax, N.S., July 29, was engaged at one time in the construction of the Cape Breton Ry., from Port Hawkesbury to Sydney, N.S., and also with the building of the Sydney and Louisburg Ry., the electrification of the Halifax Tramways, the building of the Halifax and South-western Ry., and survey work for the Halifax and Eastern Ry., the last two now forming portions of the Canadian National Rys.

Edward C. Lalonde, Senior Inspector of Railway Operation, Board of Railway Commissioners, Ottawa, died suddenly, at the Canadian National Rys. station, Moncton, N.B., Aug. 1, aged 63, while waiting for a train on which he was going to St. John. He had been in Moncton on business during the day, and had just left the office of the Superintendent, of the Moncton Division, and was proceeding to the train, when he collapsed, and died before a doctor could be summoned. He entered railway service at the age of 16, in the general offices of the old Canada Central and Brockville and Ottawa Rys., now part of the C.P.R. In 1881 he was appointed secretary to A. B. Chaffee, then Manager, South Eastern Ry., Montreal, and when that railway was absorbed in the C.P.R., he remained, and was later appointed Superintendent of the South Shore Ry., then owned by the Beaucehem interests, of Sorel, Que. On that line being acquired by the Delaware & Hudson Co., he was appointed an inspector under the Board of Railway Commissioners, retaining the position until his death. He lived at Longueuil, Que., for about 40 years, and was an alderman there for 21 years and mayor for 2 years.

George McCallum, station agent, Canadian National Rys., Galt, Ont., who has retired after 40 years of service there, with the company and its predecessors, was presented with a purse of money and an address, recently, by a number of local business men.

F. H. McGuigan, of Toronto, formerly Fourth Vice President, G.T.R., was appointed by the Minister of Labor, recently, to represent the Toronto Hydro Electric Commission, on the board of conciliation dealing with the dispute between the Commission and its employees, regarding wages and working conditions. He is also representing the Algoma Steel Corporation on a similar board, regarding wages and conditions of labor of that company's employees.

Mrs. C. E. McPherson, wife of the Assistant Passenger Traffic Manager, Western Lines, C.P.R., Winnipeg, spent part of the summer at St. John, N.B.

A. D. MacTier, Vice President, Eastern Lines, C.P.R., Montreal, and Mrs. MacTier, have announced the engagement of their only daughter, Adeline W., to D. A. White, of Ottawa, son of the late Lieut.-Col. Frederick White, C.M.G., formerly Commissioner of the Royal Northwest Mounted Police. Mrs. MacTier left Montreal, Aug. 6, to spend the remainder of the summer at Murray Bay, Que.

C. D. Manuel, formerly Inspector of Bridges and Buildings, Western Lines, C.P.R., Winnipeg, died at Brockville,

Ont., Aug. 7, aged 79. He retired from active service on pension several years ago. W. H. Manuel, Travelling Auditor, Western Region, Canadian National Rys., is a son.

Charles James Milligan, who has been appointed Regional Counsel, Atlantic Region, Canadian National Rys., Moncton, N.B., was born at St. John, N.B., Jan. 15, 1870, and is a B.A. and M.A. of the University of New Brunswick. He became a barrister in Sept. 1892, and practised at St. John, N.B., until April 1908, when he was appointed Master of Titles and Inspector of Legal Offices, for Saskatchewan, at Regina, with the rank of a deputy minister, which position he held to July 1, when given his present appointment. By an unfortunate mistake Mr. Milligan was referred to in our last issue as Mulligan.

Tom Moore, one of the Canadian National Rys. directors, and President of Canadian Trades & Labor Congress, has been named by the latter's executive council to represent Canadian labor at the International Labor Conference in Geneva, Switzerland, and will probably start from Ottawa early in October.

G. A. Mountain, Chief Engineer, Board of Railway Commissioners, Ottawa, and Miss Mountain, spent August at Moose Lake.

Robert Cooper Rennie, who has been appointed acting Assistant Superintendent, Sleeping and Dining Car Department, Canadian National Rys., Toronto, was born in Ayrshire, Scotland, Oct. 20, 1884, and entered transportation service in 1900, since when he has been, to 1905, ticket clerk, Glasgow and South Western Ry.; 1906 to 1908, in Auditor of Disbursements office, G.T.R., Montreal; 1908 to Apr. 1, 1923, chief clerk, Dining and Parlor Car Department, G.T.R., Toronto; Apr. 1 to Aug., 1923, chief clerk, Sleeping and Dining Car Department, Canadian National Rys., Toronto.

Senator J. D. Reid, formerly Minister of Railways and Canals, and Mrs. Reid, have announced the engagement of their daughter, Miss E. E. Reid, to Aemilius Jarvis, Jr., Toronto, the wedding to take place in September.

T. E. Roberts, who has been appointed Assistant Manager, Colonization and Development Department, C.P.R., London, Eng., was born in England, Dec. 3, 1887, and entered the company's service June 6, 1910, as accountant in the Land Department, and acted as a conductor for several land seeking parties arranged by the C.P.R. He was in military service from June 13, 1916, to Sept. 1, 1919, in connection with the Transport Department, and on his return to civil life re-entered C.P.R. service as Chief Assistant, Colonization and Development Department, London.

T. J. Riggs, who retired from active service as Superintendent, Blacksmith Shop, Pennsylvania Rd., Buffalo, N.Y., recently, has been placed on the company's honor roll, for long and faithful service. He was presented by his fellow employees with a diamond ring and a mahogany chair. He was born at Warsaw, Ont., July 8, 1853, and entered railway service in 1868 as apprentice blacksmith, Great Western Ry. (now Canadian National Rys.), Hamilton, Ont., and later served at Niagara Falls and Toronto.

A. L. Smith, Superintendent, Toronto Union Station, had a rib broken and was rather severely bruised, Aug. 2, when he was struck by a shunting passenger

train in the station. He resumed duty Aug. 20.

Sir Campbell Stuart, Managing Director of the Times, London, Eng., who visited Canada, during August, is a grandson of the late C. J. Brydges, who was appointed Managing Director of the Great Western Ry. of Canada in 1853, General Manager of the Grand Trunk Ry. in 1864, one of the commissioners of the construction of the Intercolonial Ry. in 1868, and subsequently General Superintendent of Canadian Government Railways.

J. G. Sullivan, consulting engineer, Winnipeg, formerly Chief Engineer, C. P.R., read a paper on transportation as related to national development, recently in Chicago, before the American Society of Civil Engineers, of which he is a member.

J. G. Sullivan, formerly Chief Engineer, C.P.R., has been elected President of the recently organized Canadian Engineering and Construction Co., Ltd., in Winnipeg, which intends undertaking general engineering and construction work, and has a contract for the erection of 51 miles of high tension line for the Manitoba Power Commission.

Sir Thomas Tait, President, Fredericton Ry. and Coal Co., Montreal, narrowly escaped serious, and possibly fatal, injury, Aug. 12, when the motor car, in which he was being driven from his summer home at St. Andrews, to Minto, N.B., crashed through a bridge in Sunbury County.

Charles Baultimas Trites, who has been appointed Assistant Superintendent of Pensions and Relief, Canadian National Rys., Moncton, N.B., was born there, Dec. 26, 1877, and entered railway service, May 5, 1892, since when he has been, to May, 1893, messenger, Intercolonial Ry.; May, 1893, to July 20, 1907, clerk, I.R.C.; July 20, 1907, to Dec. 1, 1915, chief clerk, I.R.C.; Dec. 1, 1915, to April 1, 1917, Assistant General Secretary, Intercolonial and Prince Edward Island Rys. Employees Provident Fund; April 1 to May 29, 1917, acting General Secretary, and from May 29, 1917, to Nov. 1, 1921, General Secretary, same organization; Nov. 1, 1921, to May 16, 1923, General Secretary, same organization, and Staff Recorder, Canadian Government Rys., all at Moncton, N.B.

William Walkden, who has been appointed Bridge Engineer, Western Region, Canadian National Rys., Winnipeg, was born at Alderley Edge, Cheshire, Eng., June 1, 1885, and served as an indentured pupil and assistant with P. Pierce & Son, Architects and Engineers, Stockport, Eng., from Oct., 1902, to July, 1907. He entered transportation service in Nov., 1907, since when he has been, to July, 1909, draftsman, Engineering Department, Canadian Northern Ry.; July, 1909, to May, 1912, draftsman and Assistant Engineer, Bridge Engineer's Department, same road; May to Nov., 1912, chief draftsman, same road; Nov., 1912, to Feb., 1917, Assistant to Bridge Engineer, same road; Feb., 1917, to Apr., 1919, acting Bridge Engineer, same road; Apr., 1919, to Sept. 1, 1920, Bridge Engineer, G.T.P.R., Winnipeg; Sept. 1, 1920, to July 3, 1923, Assistant Bridge Engineer, Western Region, Canadian National Rys., Winnipeg.

Mrs. Wallace, wife of J. J. Wallace, formerly General Freight Agent, Intercolonial Ry., at Moncton, N.B., died at Vancouver, B.C., July 28, and was buried at Moncton.

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The Inland Water Freight Rates Act's Injurious Effects.

The Marine Department of this issue contains, on pg. 454, full particulars of the undesirable and threatening situation which has developed consequent on the coming into operation of the Inland Water Freight Rates Act, 1923, the complete text of which was given in our August issue. The most noticeable thing about the situation is that the flood of complaints concerning it is coming, not from the ship owners, to discipline whom the act was passed, but from the grain trade, many members of which were most vociferous in their demands for the legislation. The serious aspect of the situation is that the act's operation threatens a grain blockade of unprecedented proportions, with consequent loss to all connected with the production and sale of Canada's grain crop, and injurious effect on the whole country's economic welfare. It will be a most regrettable thing if the situation which threatens comes about; the low prices prevailing for grain provide sufficient discouragement for farmers, without their financial returns being further reduced, indirectly, but none the less surely, through possible forced transportation of their crops through uneconomic channels.

The complaints now coming from the grain trade show that the act was passed without consultation with any person familiar with the situation, and that these complaints are well founded there can be no doubt. The contention advanced by Canadian grain shipping firms that they cannot do business with a demurrage clause is well founded; on the other hand, Canadian ship owners have ample justification for their attitude, which is, briefly, that they have no desire to again place rates on a level which would, at least partly, compensate them for losses caused by delays in unloading their ships, and have everybody shrieking "profiteer" at them from the housetops, when a demurrage clause similar to that applied to the railway business would protect them. The grain shipping firms' contention that the section of the act requiring brokers to post up details of preceding days' business will leave them open to exploitation is no doubt founded on fact. Their greatest apprehension, however, is to be found in U.S. ship owners' refusal to file tariffs in compliance with the act, or to carry Canadian grain to U.S. ports under the act's operation. The reason for this is that if Canada's western grain crop is to be moved expeditiously and through the most economic channels, with a consequent maximum return to the producer, it is necessary for some of that crop to be carried by U.S. ships to U.S. ports. There is no necessity for the carriage of Canadian grain by U.S. ships to Canadian ports; there are enough, and more than enough, Canadian ships to match the facilities the Canadian ports provide, but not enough to move the balance of the grain to U.S. ports, chiefly Buffalo. Last year, while Vancouver was handling to capacity, Canadian ships took from the head of Lake Superior, between Sept. 1 and the close of navigation, 389 cargoes, and U.S. ships took 432 cargoes, the average U.S. ship cargo being larger than the average Canadian one. In that period, 72,666,304 bush. of grain were sent to Canadian ports, and 115,843,757 to U.S. ports. During the 1922 navigation season, 123,870,583 bush. went to Canadian ports, and 150,226,044 to U.S.

ports. From these figures, the desirability of having U.S. ships participate in the movement to U.S. ports of the 1923 crop should be evident without further explanation.

A great deal has been said to the effect that Canadian Government Merchant Marine ships, by being placed in the lake trade, could obviate the necessity of having U.S. ships participate. The facts of the matter are that the 10 C.G.M.M. ships that have been on the lakes all summer could carry about 14,000,000 bush. between Sept. 1 and the freeze-up. These ships, Canadian Trader, Canadian Adventurer, Canadian Sailor, Canadian Sower, Canadian Pathfinder, Canadian Engineer, Canadian Signaller, Canadian Warrior, Thomas J. Drummond and J. A. McKee, have been working on the lakes all summer, with the exception of two laid up part of the time. The two last named ships have recently been sold, but presumably they will remain in the lake grain trade. Seven other C.G.M.M. ships, Canadian Gunner, Canadian Beaver, Canadian Farmer, Canadian Observer, Canadian Rover, Canadian Coaster and Canadian Logger, all of which are more or less fit for the carriage of grain, but are not now on the lakes, could be taken from their present employment, if they are now employed, and pressed into lake grain service, but the C.G.M.M. ships would not be a material factor in the situation which threatens to develop.

The chief reason given for U.S. ship owners' refusal to file tariffs and participate in the Canadian grain trade is their fear that by so doing they would greatly weaken their position as concerns certain prominent U.S. politicians' desires to have lake rates controlled by the Interstate Commerce Commission. If the public had more complete knowledge of the brand of regulation that Commission extended to U.S. railways prior to the passing of the Transportation Act, resulting in a threatened physical and financial railway breakdown, which influenced the U.S. Government to take over and operate the U.S. railways for more than two years, at a loss to the U.S. people of about two billion dollars, in addition to the direct transportation charges paid at high rates, U.S. ship owners certainly would not be blamed for wanting none of it. But there is another reason for U.S. ship owners' attitude, and that is the possibility of diverting a substantial portion of the Canadian grain crop to Duluth, which has elevator capacity for some 38,000,000 bush. for lake furtherance. A move to have this done is under way. It will certainly be a regrettable thing if all the business and revenue incidental to the movement of, say, 50,000,000 bush. of grain through Fort William and Port Arthur are lost to Canada, and gained by the U.S., through movement via Duluth, on account of the workings of the act.

The recent journey of Leslie Boyd, Chairman of the Board of Grain Commissioners, to Cleveland, for the purpose of endeavoring to secure participation by U.S. ships in the 1923 crop movement, does not tend to breed much confidence in the reported statement of the then Dominion Minister of Trade and Commerce, Mr. Robb, that the act would be enforced, and that if U.S. ships refused to come in the only result would be that they would lose so much trade.

The arrangement discussed in Winnipeg, which in effect was to allow the law to be winked at through requiring ship owners to file only copies of contracts made, instead of tariffs, was most undesirable; if laws are made they should be enforced, and if any law is such that the injuries worked by it far outweigh its benefits, it should not be in the statutes. It is greatly to be deplored that the Canadian Government should so humiliate itself as to say, in effect, to U.S. ship owners: "For Heaven's sake, come in, even with the law as it is, and we will make it as easy as we can for you," and to be turned down at that. While Mr. Boyd was reported, in a Winnipeg press dispatch of Aug. 21, as saying that he expected at least 50 U.S. ships to participate in the 1923 movement under the act, we were informed on Aug. 23, by a person intimately in touch with the shipping business, that when he was in Cleveland on Aug. 22, he met only one owner, out of many, who expressed himself as willing to let his ships enter the Canadian Great Lakes grain trade while the act is in force.

One of the strongest things in connection with government interference in the shipping industry was its action in placing suspension of the coastal laws in its own hands, so as permit it to let foreign ships come in and compete with Canadian ships in Canadian port-to-port trade, without Canadian ships having any opportunity to compete in foreign port-to-port trade, whenever it felt such action desirable, and then following that with legislation which has the effect of keeping U.S. ships out altogether. But apart from this feature of the Government's action, the wisdom of its course in extending to itself Parliament's power to suspend the coastal laws is seriously open to question. The effect that this would be liable to have on the Canadian shipping and shipbuilding industries was pointed out by Canadian Railway and Marine World in previous issues, and there is no doubt but that the action has produced much apprehension as to its ultimate effect, among shipping men and shipbuilders.

The interfering legislation recently applied to the shipping business has undoubtedly done a lot of harm. The Inland Water Freight Rates Act, which ostensibly was passed to restrict the profits of shipping companies which have been earning little enough, has created a situation wherein they, while recognizing the harmful nature of the act, stand ready to operate under it, and to assist the Board of Grain Commissioners and the Government in its administration, it has caused the grain trade to find efficient functioning difficult to the point of impossibility, and threatens serious loss to farmers and the grain trade as a whole. It is certainly to be hoped that the conditions which threaten to obtain this autumn may be avoided, and if the Government has any regard for the economic welfare of the country at large, to say nothing of its own political fortunes, it should employ all its powers to ensure that they will be. It might do that by consenting to have the law obeyed in the breach rather than in the observance. Its action last autumn in connection with the coastal law certainly establishes ample precedent for such procedure. Now that Mr. Robb has been succeeded in the Ministry of Trade and Commerce by Mr. Lowe, there is a good opportunity for the latter to reverse his predecessor's mistaken policy.

The Shop and Maintenance Men's Wage Increase Applications.

Canadian Railway and Marine World has generally refrained from commenting editorially on railway employees' wages or working conditions, because we have felt that railway officials have shown themselves very competent to safeguard the financial interests of their properties, and to fulfil their obligations to the public, which looks to them to provide freight and passenger transportation at reasonable rates, and that railway employees and their leaders, while naturally bending every effort to securing as good terms as are to be obtained, have in the great majority of cases shown good judgment and exhibited an attitude towards the railways and their officials which, fortunately, is not marked by any of the bitterness which apparently exists in the minds of railway employees on some U.S. lines. About the only departure from this policy was when certain employees threatened to seriously oppose the reduction made in their wages, consequent on the great degree of deflation which had taken place in business generally, and at that time we pointed out that by accepting the reductions proposed they would probably be farther ahead in the long run than if the reductions were not made, for the reason that transportation costs had to deflate in some measure, just like the cost of wheat and everything else, if business in the country was to become good and if unemployment was to become a thing of the past.

Exactly similar considerations prompt us to again express an opinion on the applications for wage increases made recently by railway shop employees and maintenance men. We believe, after considerable study of the matter, that this is no time to seek higher wages. Altogether apart from the railways' inability to pay more, with earnings and operating ratios as they have been, the situation in this country is that a fair start has been made in establishing the relationship as between industries which is necessary for nation-wide prosperity, and wage increases now would tend to create new disparities and increase existing ones, particularly as between agriculture and other lines of endeavor, with the effect that progress toward good times would be stopped and the creation of bad times and unemployment would be encouraged. We have no intention of indulging in any long economic discussion to prove these statements, but they can easily be demonstrated as correct; rather, we confine ourselves to the simple statement that while we thoroughly recognize that railroading is an industry in which good wages should be paid, we are of opinion that if the employees now seeking increases will be content to keep on at the wages they are receiving, they, and particularly those among them with less seniority than the others, will ultimately reap greater economic advantage than if the increases applied for were granted.

The New Zealand Government Rys. are reported to have opened for traffic a tunnel 5.3 miles long, connecting the east and west coast railways on the southern island. This is said to be the longest tunnel in the British Empire, and the seventh longest in the world. Traffic through it and on the connecting lines is operated by electricity.

British Columbia's Erroneous Contention.

An Ottawa press dispatch of Aug. 9, reported G. G. McGeer, K.C., counsel for British Columbia in its rate appeal before the Dominion Cabinet, as arguing that that province is entitled to the same treatment in regard to railway rates as other parts of the Dominion, that the Confederation agreement provided for this, and that the present rates constitute a violation of that agreement. Another Ottawa dispatch of Aug. 13 reported F. H. Chrysler, K.C., counsel for the Railway Association of Canada, which opposed the B.C. application, as arguing that the contention of Premier Oliver, of B.C., as advanced by Mr. McGeer, that B.C. is entitled to special consideration by reason of implications arising from, and covenants contained in, the agreement made by B.C. with the Dominion Government at the time B.C. was admitted into Confederation, have no foundation in fact.

Mr. Chrysler's contention that the agreement providing for B.C.'s entry into Confederation contained no provision as to transportation charges is apparently borne out by the facts. The terms on which B.C. entered Confederation are defined in the Imperial Privy Council's order of May 16, 1871, and are, so far as railway matters are concerned, simply as follows: "The Government of the Dominion undertake to secure the commencement simultaneously, within two years from the date of the union, of the construction of a railway from the Pacific toward the Rocky Mountains, and from such point as may be selected, east of the Rocky Mountains, toward the Pacific, to connect the seaboard of British Columbia with the railway system of Canada; and further, to secure the completion of such railway within 10 years from the date of the union."

The agreement also contains details of lands B.C. agreed to convey to the Dominion Government, "to be appropriated in such manner as the Dominion Government may deem advisable in furtherance of the construction of the said railway," and also specifies that in consideration of the land to be so conveyed, the Dominion Government pay to B.C., from the date of the union, \$100,000 a year, in half yearly payments in advance. The terms contain nothing as to rates to be charged upon the railways, the construction of which was provided for.

Railway Lands Patented.—Letters patent were issued during July for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres
Alberta and Great Waterways Ry.....	133.76
Canadian Northern Ry.....	2,217.15
Canadian Northern Western Ry.....	.97
Canadian Pacific Ry. grants.....	2.36
Canadian Pacific Ry. roadbed and station grounds.....	36.80
Grand Trunk Pacific Ry.....	18.82
Total.....	2,409.86

Sunday Trains in Manitoba.—The Lord's Day Alliance is reported to have filed a bond of £200 on Aug. 10, in connection with its appeal to the Imperial Privy Council against the Manitoba Court of Appeal's decision affirming the validity of the act passed by the Manitoba Legislature last season permitting the operation of trains on Sundays. It is expected that the case will be argued in London, Eng., in January next.

Publicly Owned Utilities and the Industrial Disputes Investigation Act.

Some little time ago the Toronto Hydro Electric Commission's employees applied for an increase in wages. The Commission stated that as the present wages were set in 1920, when living costs were at their peak, the employees were not entitled to an increase, but it was willing to submit to arbitration, any issues that could not be settled by direct negotiation. The employees applied for a conciliation board under the Industrial Disputes Investigation Act, which was granted, and they named J. G. O'Donoghue, Toronto, as their representative. The Commission refused to appoint a representative, taking the stand that the act does not apply to publicly owned utilities. The Minister of Labor appointed F. H. McGuigan to act for the Commission, and Judge Snider of Hamilton, Ont., was appointed chairman.

The following statement was issued on Aug. 4: "The Commission has considered the enquiry before a board under the Industrial Disputes Investigation Act, which has been established by an order of the Dominion Minister of Labor, on the request of the Canadian Electrical Trades Union, Toronto Branch. On a previous occasion, when a board was established, such a board was withdrawn, the Deputy Minister of Justice advising that it was very doubtful, indeed, if the act was applicable in such instances. The Commission has been advised that such act is not applicable to publicly owned enterprises. Having regard to the foregoing, the Commission, in the interest of public ownership in Toronto and the province, has decided to test the legality of the act as applied to public services, and has instructed its legal advisers accordingly."

The conciliation board, acting on instructions from the Minister of Labor, decided at a meeting on Aug. 20 to proceed and take evidence, the first meeting for that purpose being set for Aug. 24. E. M. Ashworth, acting general manager of the Commission, is reported to have stated, on Aug. 20, that the Commission's attitude was unchanged, and that the board's legality would be fully determined.

An Ottawa press dispatch of Aug. 20, stated that the Dominion Government had instructed Lewis Duncan, Toronto, to act on its behalf with respect to any matters that might arise in connection with the board of conciliation.

The Commission made application for a writ, which was issued at Osgoode Hall on Aug. 21. The members of the Commission are named therein as plaintiffs and the members of the board of conciliation as defendants. It asks for a declaration that the defendants are without lawful authority to act as a board of conciliation under the Industrial Disputes Investigation Act. The matter was set down for hearing on Aug. 23.

The Commission's contention that a board appointed under the act is without authority to pass upon disputes between a municipally owned enterprise and its employees is based upon its interpretation of the British North America Act, sec. 91, setting forth the matters upon which the Dominion Government may legislate, and sec. 92, stating in part as follows: "In each province the Legislature may exclusively make laws in relation to matters coming within the classes of subjects

next hereinafter enumerated, that is to say: 8. Municipal institutions in the province. . . . 10. Local works and undertakings other than such as are of the following classes: (a) lines of steam or other ships, railways, canals, telegraphs and other works and undertakings connecting the province with any other or others of the provinces or extending beyond the limits of the province; (b) lines of steamships between the province and any British or foreign country; such works as, although wholly situate within the province, are before or after their execution declared by the Parliament of Canada to be for the general advantage of Canada or for the advantage of two or more of the provinces."

On Aug. 23, at the request of the Ontario Attorney General, hearing on the injunction proceedings was postponed by Mr. Justice Orde, to Aug. 27. G. H. Kilmer, K.C., counsel for the Toronto Hydro Electric Commission, having stated that, as directed by Mr. Justice Orde, he had communicated with the Ontario Attorney General concerning the dispute, and had been advised that a few days were desired in which to consider the matter. Mr. Kilmer suggested that possibly the Attorney General wished to intervene in the proceedings or become a party to the dispute, and contest the Dominion Labor Department's assumption of legality as concerns its action in appointing a board. He also pointed out that the controversy is really based on the question of division of authority as between the Dominion and Provincial Government, Mr. Justice Orde stated that he would leave it to the members of the board of conciliation as to whether the sittings scheduled for Aug. 24 should be gone ahead with.

The board met on Aug. 24 and decided to postpone its sittings for the taking of evidence till Aug. 29. On Aug. 24, the Ontario Attorney General, Mr. Nickle, stated that the Ontario Government considered it advisable to take the stand that the Dominion Minister of Labor has no jurisdiction, under the Industrial Disputes Investigation Act, to appoint a board to deal with a dispute between a municipally owned undertaking and its employees, and that, therefore, the Deputy Attorney General would appear at the injunction hearing and argue that such action would constitute a distinct instance of attempted Federal interference with provincial rights. The Attorney General said in part: "The municipality is exercising powers delegated to it by the province; the exercise of these powers, both legislative and administrative, is in effect a right of the province under the British North America Act, with which the Dominion Parliament has no jurisdiction to interfere. From the course taken by the present board of conciliation and investigation, it is apparent that the Dominion Government have decided to test in this matter the jurisdiction of the Minister of Labor to enforce the act in the case of municipal employees or employees of a public utility carried on for a municipality."

Municipally owned electric railway managements are, of course, vitally interested in this matter, as if the Dominion Minister of Labor can appoint a board in connection with a municipally owned hydro system he would apparently also be able to appoint one in connection with an electric railway owned by a municipality.

Freight and Passenger Traffic Notes.

The Timiskaming & Northern Ontario Ry. started a dining car service on Aug. 27, which is being operated under the General Freight and Passenger Agent, A. J. Parr.

Peterborough, Ont., City Council will, a press report says, renew its application to Canadian National Rys. management to operate self-propelled cars on lines in that vicinity.

The Okanagan Valley apple crop in British Columbia is estimated at about 4,620 car loads, an increase of 20% over 1922. The Kootenay and Boundary districts' crop is estimated at about 380,000 boxes.

A delegation, headed by the Dominion Minister of Labor, interviewed the Canadian Passenger Association in Montreal, recently, and asked for a passenger rate of 1½c a mile for unemployed travelling from one center to another to seek work.

The Canadian National Rys. management is reported to have authorized a special reduction of 25% on freight for shipments of necessities into sections of Charlevoix County, Que., where crops are reported to have failed. The Quebec Government has given \$25,000 for the relief of distress there.

The shipments of grain from the prairie provinces to Vancouver, B.C., for the 1922-23 season were reported, on Aug. 7, to have practically ceased, and very little more was expected. The total shipments over the C.P.R. to Vancouver for the year to Aug. 7 are reported to have been 9,579 cars, containing 14,244,916 bush., compared with 3,433 cars containing 4,878,293 bush. for the 1921-22 season.

The Canadian National Rys. and the C.P.R. began the operation of harvest excursion special trains from the Maritime provinces, Aug. 3, and on subsequent days from different sections of Quebec and Ontario, on fixed days of the week, extending to Aug. 30. The outward rate was \$12 to Winnipeg, with ½c a mile to points beyond. Special equipment was used by each of the railways, with separate cars for women and children, and luncheon counter cars.

The C.P.R. will, on Sept. 1, discontinue operating the special train between Windsor station, Montreal, and Quebec, on the morning of the sailing of steamships for Great Britain. The service to be substituted for this special train will consist of special cars allotted for steamship passengers, to be attached to train 350, the Frontenac, leaving Windsor station half an hour earlier than the special train left. The cars will be detached at Quebec and switched to the wharf and run alongside the liners.

The C.P.R. steamships and the steamship lines working in conjunction with the Canadian National Rys. made a special rate of £12 for male laborers from any part of Great Britain to Winnipeg on ships sailing between Aug. 1 and 11, inclusive. To points beyond Winnipeg the men were given the rate of ½c a mile to points available to all harvest excursionists. Upon production of a certificate that they have worked one month harvesting, they will be given a \$20 rate to a Canadian seaport and a 25% reduction on the ocean to Great Britain. This return offer will be available to Nov. 30, and will be extended for another month if conditions require it.

Unclassified Items.

Berlin, Germany, Municipal Council is reported to have suspended the operation of its entire street car service, owing to the enormous loss sustained in running it.

Quebec Railway, Light, Heat & Power Co. has ordered 10 standard one-man safety cars with two-door, instead of one-door, vestibules, from Ottawa Car Manufacturing Co.

Canadian Stevedoring and Contracting Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$50,000 capital, and office at Vancouver, to take over any stevedoring business in the province, to carry on a general stevedoring business, and to own and operate ships, etc.

Taxation of Public Utilities.—The Ottawa city board of control is reported to have recommended that the council back up the Niagara Falls Board of Trade's request to the Ontario Government, for power to tax public utilities in the same way as privately owned ones are.

Freight Rate Reduction in Great Britain.—The London, Midland & Scottish, the London & North Eastern and the Great Western Rys. put into effect, on Aug. 7, a reduction of freight rates for coal, coke and patent fuel. The reduction is from 60% above the rates in effect Jan. 14, 1920, to 10% above them. No alteration was made in the flat rate additions.

Webster Steamship Co., Ltd.—Application has been made under the Quebec Companies Act, by the following companies, — Steamer Howard W. Ltd., Steamer Richard W. Ltd., Steamer Stuart W. Ltd., and Steamer Eric W. Ltd., for leave to surrender their charters. The companies are owned by Webster Steamship Co. and the ships named have been sold.

Grain Shipping Control Matters.—Canadian Railway and Marine World received advice, on Aug. 23, from a reliable source that the Chairman of the Board

of Grain Commissioners had, on that date, issued the following statements that the Board concedes it is without authority to order ship owners to omit demurrage clauses from contracts entered into for transportation of grain; and that the Board is without authority to prohibit shipping brokers from charging grain shippers a brokerage fee.

Esquimalt Drydock Progress.—A Victoria, B.C., press report states that the excavation and placing of cement for the drydock being built for the Dominion Government at Esquimalt is expected to be completed about the end of April next, and that the drydock should be in operation during 1924. Tenders have been asked for the electric equipment, and it is stated that the electric pumping station, which will include 3 main pumps with a capacity of 180,000 gall. a minute, will be capable of emptying the entire dock in 4 hours.

The Chief Justice of New Brunswick, on July 30, refused to grant the New Brunswick Power Co. an interim injunction against the Hydro Electric Commission of St. John, N.B., to restrain the latter from erecting poles within 4 ft. of the plaintiff's poles, and placing its wires within 3 ft. of the plaintiff's wires, and ordering the removal of the poles and wires which had been placed in position. Costs of the application were directed to be made costs of the action. The application for a permanent injunction was set down for hearing on Aug. 21.

The Great Lakes Transportation Co., Midland, Ont., has sold a \$500,000 issue of 10-year 5½% sinking fund bonds, redeemable during the first three years at 103, during the second three years at 102, during the third three years at 101, and during the last year at par. The issue is secured on the steamships Glenelg, Glenrig and Glensannox, which are insured for \$1,000,000, and are, in addition, a floating charge on the company's fixed assets. It was expected that the issue would be offered to the public on a 6.65% basis.

The C.P.R. s.s. Empress of Scotland, while running between Hamburg, Germany, and Southampton, England, Aug. 21, struck an obstruction, believed to be a submerged wreck, about three miles west of the Nab lightship, off the east coast of the Isle of Wight. She was escorted to Southampton by five tugs and arrived there, under her own steam, slightly down at the head, without any casualties. She had about 234 passengers on board, about 75 of them being for Canada. These were transferred to another ship, and the Empress of Scotland was drydocked for examination and repairs.

Norway Bay Ferry Co., Ltd. has been incorporated under the Dominion Companies Act, with \$25,000 authorized capital, and office at Ottawa, Ont., to carry on a general transportation business by land and water and to own and operate ships, vehicles, hotels, amusement resorts, for the transportation and accommodation of passengers and freight. The incorporators are,—L. W. Gates, F. T. C. Gamble, W. M. Unger, E. L. Gamble and R. V. Reaume, Ottawa, Ont. It is having a steel automobile ferry built by Canadian Vickers Ltd., Montreal.

Steamship Signal for Bridge Opening.—The Board of Railway Commissioners passed general order 383, June 12, as follows:—Re general order 124, April 30, 1914, prescribing regulations governing operation by railways of draw, swing, or bascule bridges over navigable waters.

Upon reading the draft report to Council, dated May 14, 1923, filed and the report of its Chief Engineer, the board orders that the said order be amended by striking out paragraph 3 and substituting in lieu thereof the following, viz: "3. The signal to be given by steamer to have a swing bridge opened shall be three long whistles."

The United States regulations regarding alcoholic beverages on ships entering U.S. ports, came before the British House of Commons, recently, when the Prime Minister was asked whether the Government had considered the advisability of taking retaliatory measures against U.S. ships arriving at British ports. Prime Minister Baldwin is reported to have stated that representations had been made to the U.S. Government, and the effect of the regulations on British shipping was being carefully watched, to see whether it would be necessary to resort to special measures to counteract any injury which might be inflicted by the regulations. At that time, the British authorities had received no complaint from the owners of any British ship, which, according to dispatches, had been fired on by a U.S. ship, but if they are made, and it appears that the British ship was outside the three mile limit, a protest will be made, in view of its importance as a precedent.

French Railways' Special Rates.—Paris press dispatch: The encouragement given by the state to people to have large families includes reduced fares for railway travel. For example, a couple with three children, which is regarded nowadays as quite a large family, have the privilege of travelling, when going on holidays, at reduced fares. The reductions vary with the number of offsprings under 16 years of age, from 30 to 70%. Parents who lost five sons in the war are entitled to a reduction of 50% in the regular railway passenger fare, even if they have no children living.

Northern Construction Co's Chinese Railway Contract.—Winnipeg Board of Trade is reported to have received advice that the Northern Construction Co., Vancouver, has been given a contract by the Chinese Government for the construction at an estimated cost of \$20,000,000, of 1,200 miles of railway from Canton to Cheugtu, and passing through a rather difficult country involving considerable rock work and tunnel construction. The contract was negotiated by the company's Vice President, C. V. Cummings, who returned to Canada from China recently.

The Pere Marquette Rd. Co. gave notice recently of application to the Board of Railway Commissioners for a recommendation to the Governor in council for the sanction of an agreement between the Lake Erie & Detroit River Ry. Co. and the P. M. Ry. Co., dated June 1, under which the P. M. Ry. Co. is granted the exclusive right to run its trains over all the Lake Erie and Detroit River Ry. Co's lines for 21 years from the date of the approval of the agreement by the Governor in council.

Quebec Bridge Vehicular Traffic.—A press report states that a movement has been started in Quebec City for the construction of a roadway across the Quebec Bridge, for automobile and other traffic as a part of the provincial highway system. Quebec Government highway engineers are reported to have had a consultation with Dominion Government engineers about the matter.



TENDERS

TENDERS addressed to the undersigned at Ottawa, and endorsed on the outside of the envelope "Tender for Ice Breaking" will be received up to noon of the

10th DAY OF SEPTEMBER, 1923,

for breaking ice in the Harbours of Port Arthur and Port William, Thunder Bay and Lake Superior in accordance with the specifications prepared by the Department of Marine and Fisheries. A contract will be entered into with the successful tenderer for a period of five years, but the tenderer must quote a price per annum.

Specifications covering the work required can be obtained from the Harbour Masters at Port Arthur and Port William and from the Purchasing Agent of the Marine and Fisheries Department, Ottawa. There are no special tender forms for this work.

Each tender must be accompanied by an accepted cheque on a Chartered Canadian Bank for the sum equal to 10% of the tendered price per annum in favour of the Deputy Minister of Marine and Fisheries, which cheque will be forfeited if the successful tenderer declines to enter into a contract, or fails to carry out the work in accordance with the specification prepared by the Department. Cheques will be returned to unsuccessful tenderers.

The Department does not bind itself to accept the lowest or any tender.

Newspapers inserting this advertisement without authority will not be paid for same.

A. JOHNSTON,
Deputy Minister, Ottawa.

August 18, 1923.

Canadian National Railways Construction, Betterments, Etc.

Prince Edward Island Ry. Standardization.—The standardization of gauge on the Tignish Subdivision, Island Division, Atlantic Region, between Summerside and Tignish, 67.74 miles, preparatory work for which had been in progress for over a year, was completed Aug. 13. All the 3½ ft. gauge rolling stock was removed from the subdivision on Aug. 11, and the changing of the rails from narrow to standard gauge was done on Aug. 12 and 13, in 18 hours and 20 minutes, so that, as Aug. 12 was a Sunday, there was practically no interruption of traffic. Shortly before the changing of the gauge, where rails then in use were to be retained, every other spike was drawn, ready for the moving out, and where new rails were to be used, they were laid outside the narrow gauge ones. In the standardization work, rails were used between the points mentioned, as follows:—Between Summerside and Wellington, 11.69 miles, 50 lb. rails theretofore in use. Between Wellington and Ellerslie, 11.76 miles, 67 lb. second hand rails from other C.N.R. lines. Between Ellerslie and Coleman, 13.33 miles, 50 lb. rails theretofore in use. Between Coleman and Alma 21.90 miles, 67½ lb. rails which were rolled for the old Russian government. Between Alma and Tignish, 9.11 miles, 50 lb. rails theretofore in use. The gauge of the most important sidings was changed practically simultaneously with the main line, and the others are being done as fast as possible. The standardization work was done under the direction of T. B. Grady, Superintendent, Island Division, and A. Scott, Division Engineer, J. J. Bethune, Roadmaster, being in direct charge.

The standardization of Tignish Subdivision gives a standard gauge track through from Charlottetown to Tignish, 115.17 miles. There is also standard gauge on the Borden Subdivision, 12.11 miles, between Emerald Jct., 30.30 miles west of Charlottetown, and Borden. The standardization between Charlottetown and Summerside, 47.38 miles, and also on the Borden subdivision, was completed in Aug., 1919. Out of a total mileage of 276.77 on the Island Division, the following portions are still narrow gauge: Souris Subdivision, from Royalty Jct. to Souris, 54.98 miles; Elmira Subdivision, from Harmony Jct. to Elmira, 9.85 miles; Georgetown Subdivision, from Mount Stewart Jct. to Georgetown, 24.10 miles; Montague Subdivision, from Montague Jct. to Montague, 6.33 miles; Murray Harbor Subdivision, from Charlottetown to Murray Harbor, 47.70 miles; and Vernon Subdivision, from Lake Verde to Vernon, 3.78 miles.

The three rails, providing for both standard and narrow gauge operation, have been left down between Charlottetown and Royalty Jct., on Kensington Subdivision, 5.26 miles, so that standard gauge rolling stock may be operated between those points and on west via Summerside to Tignish, and from Emerald Jct. to Borden; and so that narrow gauge rolling stock may be operated between Charlottetown and Royalty Jct. and on to Souris and Elmira, on the Souris and Elmira Subdivisions; and to Georgetown and Montague on the Georgetown and Montague Subdivisions. One of the three rails laid from Royalty Jct. west and on the Birden Subdivision, will be taken up, so that these lines will be standard gauge only.

A full description, with plans and illustrations, of the laying of the third rail between Charlottetown and Summerside, and between Emerald Jct. and Borden, so as to allow the operation of both standard and narrow gauge trains, was given in Canadian Railway and Marine World for Feb., 1922.

Halifax and Southwestern Ry. Bridges.—The Board of Railway Commissioners has authorized the replacement of the following bridges:—Mile 65.9, across the Mush-a-Mush River, Chester Subdivision; mile 52.4, across the Annapolis River, Middleton Subdivision, Bridgewater Division, Atlantic Region.

St. John Improvements.—Canadian National Rys. and the Public Works Department engineers are reported to be collaborating on plans for the development of the harbor and terminal facilities at St. John, N.B. Three different suggestions are said to be under consideration for the area at the South End, near Reed's Point, as follows:—1. That a wharf be built from the sugar refinery wharf to Reed's Point, and the area inside be reclaimed for yardage, etc. 2. That instead of closing up the gap, additional shipping be provided for, and one of two new berths be built according to a scheme which would not involve a straight line wharf. This would give the south end industries access to the harbor by water. The third scheme aims primarily at the removal of the present trestle and carrying the railway in the rear of the properties facing on Britain St.

Hardwood Ridge to Minto.—We are officially advised that a contract has been let to J. W. McMulkin and Fraser H. Fox, Upper Gagetown, N.B., for building a spur line from Hardwood Ridge, mile 58.84, Chipman Subdivision, Atlantic Region, to Minto coal mines, 4.88 miles. It will have gradients up to 1.5%, and curvatures up to 7 degrees. The only structure of any size will be an 85 ft deck plate girder span over Newcastle Creek. The work will be done under the general supervision of A. F. Stewart, Chief Engineer, Atlantic Region.

Fredericton Improvements.—A press report states that the plans for extensions at the terminals at Fredericton, N.B., include the erection of a 5-stall locomotive house, and the installation of a number of switches.

Meductic to International Boundary.—In connection with the project to build a line from Meductic, N.B., on the St. John and Quebec Ry., to the International Boundary, provision for which was included in the \$28,000,000 three year program which was rejected by the Dominion Senate last session, a press report states that United States interests have secured a right of way from the International Boundary to the projected junction with the proposed line to Bangor, Me., and are having the surveys made.

Washburn, Me., to La Fontaine, Que.—A press report states that negotiations between Canadian National Rys. officials and A. R. Gould, President Arnostook Valley Rd., in regard to the construction of a railway from Washburn, Me., on the A. V. Rd., to a connection with the National Transcontinental Ry. at La Fontaine, Que., are being gone on with, and have reached a point which makes the carrying out of the project reasonably assured. The line in Maine would be

approximately 100 miles long and would be constructed by the A. V. Rd., and the line from La Fontaine, Que., to the International Boundary near Ludwig Pond, 20 miles, would be built by the C. N. Rys. In this connection it may be pointed out that the Dominion Parliament has not made any appropriation for such a line and that it was not even included in the \$28,000,000 three years programme which was rejected by the Senate at its last session.

Quebec Station.—A Quebec press report states that plans are being prepared for a station building to be erected a few hundred yards distant from the present station on Parent Square, there.

St. Charles River Bridge.—The Board of Railway Commissioners issued a judgment, Aug. 11, giving reasons for declining to make an apportionment of the cost of rebuilding the railway bridge over the St. Charles River at Quebec. It is owned by the old Quebec and Lake St. John Ry. and the Quebec Ry., Light, Heat and Power Co., and the latter company's application was to have the cost of rebuilding apportioned between the two companies and the Public Works Department. The Board found that there was no evidence to warrant it in forming an opinion that the bridge was unsafe so far as the weight of the electric railway rolling stock was concerned.

Ottawa Cross Town Tracks.—The engineer's report in regard to the doing away with the cross town tracks in Ottawa, has been prepared, and we are advised that a proposal regarding the matter will be submitted to the city council shortly.

Abandonment of Canadian Northern Ry. between Cobourg and Brighton.—The Canadian National Rys. management decided recently to abandon the portion of the Canadian Northern Ry. Toronto-Ottawa line between Cobourg and Brighton, Ont., 22.8 miles, and the taking up of the rails was started on Aug. 6. This line which is being abandoned is part of the Orono Subdivision, Ottawa Division, Northern Ontario District, Central Region, via which Cobourg is 72.8 miles from Toronto. Parts of the Orono Subdivision line from Cobourg west will be used in connection with the management's scheme of electrification for the Toronto district. The rails being lifted are 80 lb. and in good condition, and fit for main line use elsewhere. The G.T.R. line is now being used for all C.N.R. traffic east of Cobourg.

Burlington Second Track.—The item in our last issue respecting this work was erroneously headed "Burlington Third Track." The Board of Railway Commissioners has authorized the operation of traffic over the second track with its crossing of the Hamilton Radial Ry. at Brant Ave., Burlington, Ont., the C.N.R. to pay cost of any changes required in the interlocking plant there.

Hamilton Improvements.—Following the conference between C. G. Bowker, General Manager, and F. L. C. Bond, Chief Engineer, Central Region, with the city authorities on the railway situation in Hamilton and vicinity, at which matters connected with the layout of the railway lines, the improvements desired by the city, and the necessity for an increased train service were discussed, there have been a good deal of discussion and a number of conferences. Business men favor the construction of a new

station at the corner of James and Stuart Streets, and a general plan of betterments is reported to have been prepared by the City Engineer to be sent to the C.N.R. officials for consideration.

The C.N.R.s. have applied to the Board of Railway Commissioners for approval of plans for the erection of a new station at the corner of King St. and Ferguson Ave., to replace the present Ferguson Ave. station. The plans show a building 71½ x 20 ft., with a roofed over space at the south end, 18 ft. long, the building to be of brick on a concrete foundation, 1½ stories high, with gabled roof. The city council's railway committee considered the plans on Aug. 17 and authorized the City Solicitor to protest against such approval.

Bridgeburg Interlocking Plant.—An interlocking plant is being installed at the Canadian end of the international bridge, at Bridgeburg, Ont. The interlocking machine, which was made at the railways' Toronto shops, is a 13 lever one, and is located at the station. The interlocking governs movements at the end of the yard near the bridge approach, and slow movements only are made over the switches. Four of the levers govern switches, and the balance are for the operation of dwarf signals. The installation is being made under the direction of C. H. Tillett, Signal Engineer, Central Region, C.N.R.

International Bridge, Bridgeburg.—A press report states that H. A. Stewart, Vancouver, B.C., appeared before the Bridgeburg, Ont., Town Council, Aug. 20, and stated that he had authority from the Canadian National Rys. management to build a driveway and footpath addition to the International Bridge across the river, and that a company had been formed to do the work as the railways did not have the money to carry out the project. The council is reported to have endorsed the project and to have expressed its willingness to submit a bylaw to the ratepayers to guarantee \$1,000,000 of bonds.

In connection with this report, it may be recalled that the Buffalo and Fort Erie Bridge Co., promoters' application to the Dominion Parliament at the 1921-22 session, was not agreed to owing to opposition by the then Minister of Railways, who stated that the Government was considering whether it should authorize the building of a highway section to the International Bridge as provided in the charter of incorporation. When the Buffalo and Fort Erie Bridge Co. renewed its application last session, it was stated that the C.N.R. had no intention of adding highway accommodation.

Georgetown Bridge.—We are advised in connection with the reported reconstruction of a bridge carrying the highway over the railway tracks near Georgetown, Ont., that it will be a steel and concrete structure carrying a 20 ft. highway, on a 6% approach grade, at an elevation of 23.3 ft. above the railway tracks. It is 20 ft. long, consisting of three 40 ft. spans, carried on 2 steel bents on concrete dwarf piers with buried concrete abutments at each end. The superstructure will consist of through plate girders with I-beam stringers and steel I-beam bents with sway bracing. The floor will be of concrete slab 9 in. thick, reinforced with steel nails at 9 in. centers running longitudinally. The railways will supply the materials for the concrete substructure and will make the excavations and erect the bridge complete with their own

forces. The main girders, bents and reinforcing will be supplied from the railways' own stock, and the steel I stringers will be bought locally. The work is expected to be completed about the middle of September.

Southwest Ontario District Highway Bridges.—We are advised in reference to the 6 overhead highway bridges at Main St. Harrisburg; Given Road Beverley Tp.; Concession 5 and 6 Innisfail Tp.; between lots 24 and 25 Wilmet Tp.; Queen St., Newmarket; and in Concession 1. north of Governor's Road, Beverley Tp., that they are of wood construction on frame or pile bents, and are to be replaced by permanent material as part of the yearly programme of betterments. The new structures will consist of small concrete abutments, with dwarf piers located close to the main tracks, to be carried below the frost line. The superstructures will consist of 3 spans supported by steel bents, with an approach span on each side taking support on the concrete abutments. The roadways will be rebuilt for 20 ft. horizontal clearance, and in some instances the floor system will be extended so as to provide for a sidewalk. With the exception of steel bents and rolled beams these bridges will be built from stock material and designed to carry trucks of 15 tons capacity. All the work will be done by the railway's forces.

Kitchener Grade Separation.—Kitchener, Ont., City Council is reported to have appointed James, Proctor and Redfern, consulting engineers, Toronto, to investigate and report a plan for the elimination of level crossings over the C.N.R. tracks in Kitchener.

Midland Elevator.—We are officially advised that the addition to Tiffin elevator no. 2, Midland, Ont., which will be built by Fegles Construction Co., Fort William, Ont., will consist of 30 large cylindrical bins and 20 interstice bins, having a total capacity of 2,250,000 bush., together with a movable marine tower, and a number of changes in the old house so that it can be operated in conjunction with the new storage annex. When the improvements are completed the three marine towers will have an unloading capacity of 60,000 bush. an hour. The entire plant will be operated by electricity. The plans and specifications for the annex were prepared by Canadian Stewart Co., and the construction will be supervised by them.

Beaudette Station.—Tenders were received recently for the erection of a station at Beaudette, Minn.

St. Rose du Lac to Rorketown.—Settlers in the district beyond St. Rose du Lac, Man., the terminus of a branch line, are reported to have petitioned the Dominion Government for the construction of an extension of the line to Rorketown, 22 miles.

Canadian National Rys. Elevators.—Tenders were received to July 21, by C. J. Smith, General Manager, Elevators and Warehouses, Canadian National Rys., Montreal, for leasing for three years, from Sept. 1, 1923, working elevator A, of timber construction, and working elevator B, of steel and concrete construction; with concrete and tile storage tank, contiguous thereto with steam power plant, electric substation, machine shop, office building, dryer and docks, for a total capacity of 8,750,000 bush., at Port Arthur, Ont., and the Transcona elevator, Transcona, Man., with 1,000,000 bush. capacity. A Regina press dispatch of Aug. 17 stated that the Saskatchewan

Co-operative Elevator Co. of Regina, had made tentative arrangements for leasing elevator B at Port Arthur.

Amaranth-Winnipegosis Branch.—A press report states that the soldier settlers in the Eddystone district have advised the Soldier Settlement Board that they will not make payments on account of loans until the projected Amaranth-Winnipegosis extension is completed. This is one of the branch lines which was proposed to be built under the three years building programme rejected by the Senate at its last session.

Dauphin Freight Shed.—We are officially advised that it is intended to use the railways own forces to build the new freight shed at Dauphin, Man., the tenders received recently being too high.

Hudson Bay Ry.—A Pas, Man., press dispatch of Aug. 12 stated that work was progressing satisfactorily on the improving of the line from that point, 48 men being out on the line, with another gang of 22 just arrived, and three additional gangs expected from Winnipeg. A Saskatoon, Sask., dispatch of Aug. 17 stated that the work was being retarded owing to the difficulty of getting men at the wages being offered, and through delays in the shipping in of material.

Manitoba and Saskatchewan Fencing.—Tenders were received recently for approximately 70 miles of fencing on lines in Manitoba and Saskatchewan.

Saskatchewan District Pipe Lines.—Tenders were received recently for construction of pipe lines at Clarkboro, mile 484.8 Langham Subdivision; and Flaxcombe, mile 143 Oyen Subdivision, Saskatchewan District.

Melville Branch.—A press report states that to obviate snow difficulties work is to be started near Victoria Plains, 9 miles from Regina, on the Melville branch, to widen the cuts to the full width of the right of way. The excavated material will, it is said, be used to fill in a ravine, now spanned by a pile trestle, near Pattie, 16 miles from Regina, on the Regina-Riverhurst line.

The Avonlea-Gravelbourg Extension is being operated for freight and passenger traffic from Avonlea to Gravelbourg, 80 miles, and for freight traffic from Gravelbourg to Hodgeville, at mile 105. The line is projected to be extended into Swift Current, and a press report states that a further 14 miles of track will be laid westerly this year. Ballasting is reported to be in progress on a section of the line not yet fully completed.

Edson Division Trestles.—Tenders were received recently for dismantling abandoned trestle bridges on Edson Division, Alberta District.

Peace River District Surveys.—Surveys are being made under the direction of H. A. Dixon, Chief Engineer, Western Region, for a route for an extension of the C.N.R. into the Peace River area. No information is at present available as to what routes are being surveyed.

Vancouver Island Lines.—The Board of Railway Commissioners has authorized the opening for traffic of the line from mile 52.6 to 69.4, Cowichan Subdivision. The service is operated by a gasoline motor car. (Aug., pg. 378.)

Steel Rail Order.—The C.P.R. has ordered 35,000 tons open hearth steel rails, 102 lb. C.P.R. section, from Algoma Steel Corporation, Sault Ste. Marie, Ont., delivery of which is expected to be completed by the end of September.

Canadian Pacific Railway Construction, Betterments, Etc.

St. John, N.B., Improvements.—Repairs to the company's elevator at Sand Point are reported to be nearing completion.

The St. John City Council is reported to be making extensive repairs to the trestle work at Sand Point, and when these are completed the C.P.R. will lay a new top thereon.

Mont Laurier to Ste. Anne du Lac.—A deputation from Labelle County waited on the Quebec Government recently to ask for support for the extension from Mont Laurier to Ste. Anne du Lac of the C.P.R. line, now in operation between St. Therese Jct., 24.9 miles from Montreal, and Mont Laurier, 138.2 miles from St. Therese Jct. H. A. Fortin, M.P., is reported to have said in introducing the deputation that the C.P.R. management had expressed its willingness to build an extension if the Government would provide its share under its colonization programme. The Premier promised full consideration to the request.

Lachute Subdivision Bridges.—The Board of Railway Commissioners has authorized work on bridges on Lachute Subdivision, Quebec District, as follows: Bridge 62, over La Rouge River, replacing three 150 ft. deck truss spans, with 3 spans of similar dimensions and type; bridge 84.6, over North Nation River, replacing 150 ft., 200 ft. and 100 ft. through truss spans by two 78 ft. deck plate girder spans, one 200 ft. through truss span, and two 53 ft. deck plate girder spans; bridge 89.2, over Blanche Creek, to replace span; bridge 106.1, over Blanche River, to replace span; bridge 109.4, over Blanche River, to replace present 100 ft. through truss span by a 100 ft. through plate girder span.

Westmount Station.—A press report states that considerable improvements have been completed at Westmount station, near Montreal. The work includes a new subway leading from the west side of the main entrance; the extension of the westbound platform for 100 ft.; the erection of a brick signal tower to control switches and signals for the traffic through the station and the Glen yards. The old signal tower has been removed to permit of the platform extension.

Interprovincial and James Bay Ry.—A press report of Aug. 9, stated it was expected that the extension from near Kipawa to the Quinze River Falls, and the branch to Ville Marie, would be ready for operation by Aug. 31 or early in September, to the point of divergence of the branch, and also the branch to Ville Marie was concerned. Preparations for celebrating the opening of the line were being made.

In connection with the reported probable extension of the line from the Quinze River Falls into the Rouyn gold mining area, it is reported that, as a result of a recent conference between C.P.R. officials and the Quebec Government, plans are being prepared for a 36 mile extension, and that a subsidy for the same will be submitted at the Quebec Legislature's next session.

Ignace-Kenora Track.—C. Murphy, General Manager, Western Lines, is reported to have stated recently that the relaying of the double track between Ignace and Kenora, Ont., 147 miles, with 100 lb. rails, which was started in 1922, had been completed, and that the ballasting was being rushed to completion.

Tuffnell-Prince Albert Line.—We are officially advised that a contract was let to Grant Smith and Co. and McDonnell, Ltd., Calgary, Alta., on May 26, for grading 50 miles from Tuffnell towards Prince Albert, Sask., and that on June 25, a second contract was let to same contractor for the grading of a further 45 miles. It is stated that this 95 miles of construction will carry the line to Tisdale on the Canadian National Rys., 88 miles easterly from Prince Albert. A Y is reported to have been completed at the starting point of the line, for handling of construction material, and grading is stated to be in progress. Another report states that grading is being gone on with southerly from Tisdale and that F. Millen, Battleford, has a sub-contract on it.

Lanigan to Welfort.—The line from Lanigan, Sask., is being operated to Naicam, 50 miles. A press report states that an additional 32 miles of grading is to be done and that it is expected to lay track on it this year.

Wilkie-Cutknife Branch.—A press report states that this branch is being extended northwesterly for 40 miles and that it is expected to lay track on it this year.

Milden-Empress Line.—We are officially advised that grading contracts were let in 1919 to Stewart and Welch, Calgary, Alta., for 34 miles, and in 1920 to Canadian Construction Co., Winnipeg, for an additional 25 miles on this line, which starts from the Moose Jaw-Outlook branch at Milden, Sask., and is intended to connect with the Swift Current-Bassano line at Empress, Alta. A press report states that good progress is being made with the work, and that it is expected to have track laid in the autumn to the end of the first 34 miles, where the Rosetown southeasterly branch construction was started in 1919.

Rosetown Southeasterly.—The Canadian Construction Co., Winnipeg, was given a contract in 1919 for grading 25 miles, and in 1921 for an additional 20 miles. This work started about 20 miles southeasterly of Rosetown, where the Milden-Empress line connects. Track laying is reported to be in progress on the 45 miles.

Wymark-Archive Line.—As stated in Canadian Railway and Marine World for June, pg. 277, grading for the first 25 miles of this line had been done by the J. W. Stewart Construction Co., Vancouver, B.C., under a contract let in 1919. We are officially advised that a contract for grading an additional 25 miles was let May 26, to W. A. Dutton, Winnipeg. A press report states that rails are being laid on the completed grading out of Wymark, and that the grading on the second 25 miles is being rushed. The Board of Railway Commissioners has approved the revised general location of this line between mile 68 and 77.

Leader Southerly.—This branch starts from Leader, Sask., on the Swift Current-Bassano line. The first grading contract was let in 1919, to Stewart and Welch, Vancouver, up to mile 25. A second contract for grading an additional 25 miles was let in 1920 to W. A. Dutton, Winnipeg. Grading has been done on this line into Alberta, and one mile of track was laid in 1922. A press report says that track laying is in progress and that 25 miles will be laid this season.

Consul Easterly.—Grading on the line from Consul, Sask., easterly, was started in 1919, when a contract for 30 miles was let to Stewart and Welch, Vancouver. A second contract for an additional 30 miles was let to W. A. Dutton, Winnipeg in 1920. This 60 mile stretch extends to Climax.

Drumheller-Bullpond Line.—We were officially advised recently that no contract has yet been let for the construction of the projected line between Drumheller and Bullpond, Alta.

Kipp-Retlaw Line.—We were officially advised recently that no contract had been let for further work on the Kipp-Retlaw line described in Canadian Railway and Marine World for July, pg. 219.

Field to Lake Louise Track.—C. Murphy, General Manager, Western Lines, is reported to have stated recently that the track between Lake Louise and Field, Alberta District, 20 miles, was being relaid with 100 lb. rails, and that the work would be completed in the autumn.

Mountain Subdivision Bridges.—The Board of Railway Commissioners has authorized the replacement of bridges 68.31 across Six Mile Creek, and 73.85, Mountain Subdivision, and bridge 17.7 over Eagle River, Shuswap Subdivision, British Columbia District.

Vancouver Pier.—D. C. Coleman, Vice President, Western Lines, visited Vancouver at the end of July and is reported to have stated that the delay in starting work on the new B.C. pier was due to the fact that it had been found necessary to revise the plans in some details. As soon as this was completed the work would be gone on with.

Victoria Terminal Building.—D. C. Coleman, Vice President, Western Lines, who visited Victoria, B.C., at the end of July, is reported to have had a conference with J. W. Troup, Manager, B.C. Coast Steamship Service, with regard to the erection of the building proposed to be erected on Belleville St. Plans have been prepared by F. M. Rattenbury, architect, Victoria, the estimated cost being reported at between \$150,000 and \$200,000. Tenders are reported to have been received up to Aug. 14. (Aug., pg. 374.)

Freight Car Location Statistics.

The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on Aug. 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, as follows: Number of cars owned, 210,415; home cars on Canadian foreign lines, 10,423; home cars on U.S. lines, 35,231; home cars on home roads, 164,761; Canadian owned foreign cars on home lines, 8,670; U.S. and foreign cars on home lines, 30,410; total cars on lines, 203,841; per cent on lines to total owned, 96.9; deficiency on line to total owned, 6,574; home cars in bad order, 13,535; foreign cars in bad order, 483; total cars in bad order, 14,018; per cent in bad order, 6.9; privately owned U.S. cars on line, 2,517; privately Canadian cars on line, 1,466.

Railway Wages and Working Conditions in Canada and the United States.

Trainmen.—Reports are current that general chairmen for Canadian lines, Order of Railway Conductors and Brotherhood of Railway Trainmen, who attended a meeting in Cleveland on Aug. 9, when wage matters were discussed, have stated that plans were made to attempt to get higher wages, and that any effort to secure wage increases on U.S. lines will be duplicated in Canada.

Shopmen.—The application made by Canadian railway shopmen, the majority of whom are members of the American Federation of Labor's Railway Employees' Department, Division 4, for a re-opening of negotiations with the Railway Association of Canada, was mentioned in a preceding issue of Canadian Railway and Marine World. The employees ask increases of 10c. an hour, to make the rates for mechanics 80c. an hour, freight car men 73c. and helpers 57c. The agreement providing present rates of 70c., 63c. and 47c. respectively for these three classes went into effect Dec. 1, 1922, and at that time the following decreases from former rates took effect: mechanics, 7c. an hour, car repair men 9c. and helpers 7c. The employees also ask restoration of the rules allowing time and a half for Sundays and holidays, and the abolition of paint spraying machines. Negotiations between the Railway Association's operating committee's sub-committee and the shopmen's representatives began in Montreal on July 30. The C.P.R. was represented by R. A. Pyne, Superintendent of Motive Power, Western Lines; Geo. Hodge, Assistant General Manager, Eastern Lines; J. Burns, Works Manager, Angus shops; and the Canadian National Rys. by C. E. Brooks, Chief of Motive Power; A. E. Crilly, Chief of Wage Bureau, and J. C. Garden, General Superintendent Motive Power, Central Region. The employees were represented by R. J. Tallon, President, American Federation of Labor's Railway Employees' Department, Division 4, and F. McKenna, Vice President, and Chas. Dickie, Secretary, and the following representing individual crafts: G. F. Chadburn, Winnipeg; F. Harrison, Montreal; Jos. Corbett, London; L. McKinnon and W. R. Rogers, Moncton; T. B. Riley, Calgary; C. E. Shaw, Winnipeg; A. McGuire, Stratford, and W. Lister, P. A. Jardin, and S. J. Irwin, Montreal. While no official statement has been issued as to the progress of negotiations, which took place July 30 and Aug. 6, 9 and 13, unofficial information is that the railways' representatives, basing their argument on the fact that there have been no increases of consequence in living costs since the present agreement was drafted, and that the present condition of affairs in the railway and other industries is such that wage increases are not advisable in the country's interest, refused to meet the employees' demands in whole or in part. This is apparently substantiated by an Ottawa press dispatch of Aug. 16, which stated that the shopmen had applied for a board of conciliation and investigation under the Industrial Disputes Investigation Act.

Shopmen, Canadian National Rys. Central Region.—Canadian Railway and Marine World for August gave particulars of the meeting in Montreal attended by Grand Trunk and Canadian Northern Ry. shopmen to wind up the shopmen's G.T.R. System Federation's affairs, and

to form a new body to replace it, and to include all Canadian National Rys. Central Region shopmen in its membership. The new organization has been named the Canadian National Rys. Federation, Central Region, and on July 21, the chief officers of the old body were re-elected without opposition, as follows: President, F. Harrison, Montreal; Vice President, W. A. McGuire, Stratford; Secretary, J. Corbett, London. The new federation's constitution providing for a second vice president, H. B. Foster, Montreal, was elected. Resolutions were passed providing for action to promote amalgamation of the 16 standard railway labor organizations; urging the railways' management to stop contracting out car and locomotive repairs, and urging to do away with piecework and bonus system in shops where in force.

C.P.R. Clerks.—Chairmen and other officers of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, representing chiefly C.P.R. western lines employees, held their regular biennial meetings at Calgary, Alta., beginning July 30. W. E. Turner, General Chairman, presided. J. H. McNally, of San Francisco, President of the organization, attended. Following the business meetings, the delegates spent some days at Banff, Alta.

Maintenance Employees.—The Railway Association of Canada's operating committee's sub-committee, appointed to deal with the maintenance of way employees' requests for wage increases, details of which were given in preceding issues of Canadian Railway and Marine World, negotiated with the employees' representatives in Montreal during the first part of August. Unofficial information is to the effect that the railways have declined to meet the employees' requests. The railways were represented by Geo. Hodge, Assistant General Manager, Eastern Lines, C.P.R.; A. E. Crilly, Chief of Wage Bureau, Canadian National Rys., and M. S. Blaiklock, Assistant Chief Engineer, Operation Department, Canadian National Rys. The employees were represented by A. McAndrew, General Chairman, C.P.R. Division, United Brotherhood of Maintenance Employees and Railway Shop Laborers; W. Aspinall, Secretary; J. J. O'Grady, C. Winters, P. Woods, P. Johnston, F. Baggett, R. Sale, G. H. Commings and G. Gerald. An Ottawa press dispatch of Aug. 16 stated that the employees had applied for a board of conciliation and investigation under the Industrial Disputes Investigation Act.

Train Service Men, Canadian National Rys. Western Region.—The seniority differences between the trainmen of the former Canadian Northern Ry. and the Grand Trunk Pacific Ry., since the inclusion of the latter road in the Canadian National Rys. have constituted a bone of contention among the employees affected for a considerable time. A Winnipeg press dispatch of Aug. 1 stated that the Minister of Labor, Mr. Murdock, presided at a meeting in Winnipeg on July 31, at which the differences were fully discussed, and that a settlement of all difficulties appeared to be in sight. A determined, though unsuccessful, effort to settle the differences was made last winter, when some 50 delegates were in session in Winnipeg for some weeks engaged in it. Employees located all the

way from Sioux Lookout and Fort William on the east to Prince Rupert and Vancouver on the west are affected.

The Canadian Brotherhood of Railway Employees will hold its biennial meeting at Calgary beginning Sept. 17. Among the more important matters to be considered will be the proposals for affiliation of the brotherhood with other Canadian railway labor organizations. A. R. Mosher, President, C.B.R.E., is reported in an Ottawa press dispatch as stating that the question of public ownership of railways will be thoroughly discussed, and as also saying: "The employees have a far different attitude when working for the public, and getting treatment which they recognize as reasonably just, than when working for the profit of investors."

Railways Pay and Boards of Trade.—Winnipeg Board of Trade, on Aug. 10, considered a communication from Halifax Board of Trade transmitting a resolution passed by the latter recommending that "steps be taken to reduce the salaries and wages of railway employees, both executive and operative," with a preamble giving about a dozen reasons as to why railway employees' wages are considered excessive. The Winnipeg Board decided to file the resolution and to take no action on it.

Merit System, Canadian National Rys.—The merit and demerit system of recording employees' standing, often referred to as Brown's System of Discipline, which has been in effect on Canadian Northern Ry. lines for some years, and on the original Canadian National Rys., which did not include the Grand Trunk and subsidiaries, was, on Aug. 1, made applicable to all lines. Dismissal follows the accumulation of 60 demerit marks. The system will embrace the usual feature of having merit marks to counterbalance demerit ones and of having demerit marks removed from previously penalized employees on account of them having periods free from further imposition of such marks.

U.S. Situation.—The U.S. Railroad Labor Board held hearings on requests for higher wages by the Brotherhood of Railway Signalmen and the Brotherhood of Railway and Steamship Clerks, Freight Handlers Express and Station Employees on July 19 and 23.

Approximately 125 general chairmen of the Eastern U.S. Association of General Chairmen of the Order of Railway Conductors and Brotherhood of Railroad Trainmen met at Cleveland on Aug. 9, to consider wages. At a meeting in Chicago on July 10, chairmen of the western association voted to ask for restoration of the 64c. a day by which the U.S. Labor Board cut wages by its order effective July 1, 1921, and at a meeting in Washington on July 24, chairmen of the southern association adopted a similar resolution. Press dispatches state that at the Cleveland meeting it was decided to ask for even higher wages than those obtaining in 1920.

A Cleveland press report of Aug. 13 states that approximately 350 general chairmen of the Brotherhood of Locomotive Firemen and Enginemen have been notified by a circular issued by D. B. Robertson, President of the Brotherhood, to meet at Chicago on Sept. 6 to consider the question of inaugurating an increased wages movement.

The C.P.R.'s St John River Bridge Case Judgment.

Mr. Justice Grimmer's judgment in the action brought in the New Brunswick Chancery Court by the Attorney General of New Brunswick against the C. P. Ry. Co. and its subsidiary, the St. John Bridge & Ry. Extension Co., in connection with the building of the bridge across the St. John River, at the reversing falls, St. John, was referred to briefly in Canadian Railway and Marine World for August. The judgment recited the various claims made by the Attorney General, and the declarations, decrees and injunctions asked for, and pointed out that the railway companies denied generally the plaintiff's allegations that the regulation of navigation of the St. John River was vested in the Province of New Brunswick by the Ashburton Treaty, and has not since been transferred to the Dominion Government; asserted that the plaintiff had been guilty of laxities in permitting construction of the original bridge in 1886, and of the construction of the new bridge which was completed in Nov., 1921, and making no complaints about the same until Dec., 1921; and that the statement of claim is bad in law and discloses no cause of action against either of the companies. It was agreed by both parties that questions of law should be considered and determined before any questions of fact were submitted or considered. The railways first submitted that the New Brunswick Attorney General was not the proper person to institute proceedings as by the British North America Act, sec. 91 (10), navigation is a matter over which the Dominion Parliament had exclusive authority. The plaintiff founded and rests his entire case upon the Ashburton Treaty, made between Great Britain and the United States in 1842, and alleged that its article 3 conferred the right of regulating navigation on the St. John River, upon the State of Maine and the then colony of New Brunswick, which article is still of full force and effect. The railways contended that there is no statute of any kind which has confirmed this article. It was contended that the reference to the treaty in the International Waterways Treaty, Dominion Statutes, 1911, chap. 28, amounted to a confirmation, and that in any event the treaty was a law before Confederation, being a treaty of peace or to avoid imminent war. It appeared that the Dominion Attorney General was asked to be a party to the action, but replied that upon consideration of the correspondence and the facts as they appeared, he was not disposed to intervene in the litigation at that stage.

The original bridge was erected under a provincial statute passed in 1881, which contained a proviso that it should not interfere with navigation, and that it should be erected at an elevation above water equal to or greater than the highway suspension bridge. For about 40 years it was never asserted that this bridge was an obstruction to navigation, and the judge did not think that the plaintiff, or anyone else, could now come forward and claim that the bridge should be removed because it had become an obstruction to navigation. The new bridge was built in 1921 with the full knowledge and apparent consent of the province, for its Legislature passed an act authorizing its Minister of Lands to grant certain lands to the railways for a nominal sum for the erection of the piers.

The plaintiff is bound by the fact that at no time prior to the erection of the new bridge was the allegation made that it could not be built without the authority of the province. It was just and equitable to conclude that there had been laxities and acquiescence on the plaintiff's part, so far as the original bridge was concerned, and the action in respect to it must be dismissed. With regard to the new bridge the question was whether or not the control of the navigation of the St. John River is vested exclusively in the Dominion Government or is vested in the Province of New Brunswick, and how, if at all, is it affected by the Ashburton Treaty. The Dominion Parliament was, by the British North America Act, given exclusive legislative authority over navigation and shipping, and after reviewing a number of cases on various points, the judge said: "I find that under existing law the control over the navigation of the St. John River at St. John is vested exclusively in the Dominion Government, including therein the right to authorize the construction of bridges across the same." The next question was whether this right was in any way affected by the Ashburton Treaty. He did not see any sufficient reason to compel him to find, or to convince him, that that treaty was one to make peace or to avoid imminent war; or was anything more than one for settling the boundary line between Canada and the United States. Under the treaty authority given to New Brunswick to make regulations in respect to the navigation of the river, but it does not appear that any were made, and even if any had been, in his opinion, they would have been absorbed and wiped out by the British North America Act. It is well settled law that a treaty does not of itself create law, by which courts are bound. After reviewing decided cases, the judge said: "I have therefore reached the conclusion that the control of navigation on the St. John River is in no way affected by the Ashburton Treaty; nor are the Dominion Government's powers as designated in the British North America Act in respect thereof limited or abridged thereby. What I have stated and found in respect to the new railway bridge, so far as the control of navigation and the effect of the Ashburton Treaty are concerned, applies with equal force and effect to the old railway bridge."

The final question was whether the Dominion Government was competent to enact the Railway Act of 1919, sec. 248, under which the new railway bridge was built. The Imperial Privy Council's Judicial Committee, in 1898, held that the Dominion Parliament had power to pass the Revised Statutes, chap. 92, an act respecting works in or over navigable waters, which required government approval for such works. The Railway Act, sec. 248, is to much the same effect as the provisions of chap. 92, consequently he had no doubt of Parliament's right and power to enact it. If so the new railway bridge was legally built under Parliamentary authority and under plans made and properly approved under the Railway Act, sec. 248.

The judgment concluded as follows: "It follows then from the conclusions I have reached in this matter, viz., that the control of the navigation of the St. John River is invested exclusively in the Dominion Government, including therein

the right to authorize the construction of bridge across the same, and that this control is in no way affected by the Ashburton Treaty, nor are the powers of the Dominion Government, as set forth in the British North America Act, in respect thereof, limited or abridged thereby; that the objection that this action was not properly brought, and that the Attorney General for New Brunswick is not the proper person to institute these proceedings must prevail. The injunction asked for will therefore be refused, and the action be dismissed with costs."

Fredericton City Council passed a resolution Aug. 7 urging the New Brunswick Government to appeal Mr. Justice Grimmer's judgment.

Newfoundland Railway Taken Over by the Government.

The Newfoundland Legislature, which, on Aug. 8, concluded its first session after the general election in May, has passed an act authorizing the Government to buy from the Reid Newfoundland Co. all the latter's interest in the Newfoundland Ry. its steamships and its dry-docks at St. John's, for \$2,000,000, all claims by the Government against the company, and all claims by the company against the Government, being withdrawn. The Legislature has also authorized the Government to borrow \$3,500,000, of which, the Premier stated, on Aug. 17, in introducing the resolution, \$400,000 is on account of estimated loss on railway operation. The railway is to be managed by a commission, and the following are reported to have been appointed as its members for one year, or until other arrangements are made:—The Colonial Secretary, the Auditor General and the Government Engineer.

CANADIAN NATIONAL RAILWAYS

Central Region, Quebec District

TENDERS FOR RAILWAY CONSTRUCTION

Sealed tenders will be received at the office of the undersigned until twelve o'clock noon, Standard time, on the fifteenth day of September, 1923, for the construction of Donnacona cut-off, between Donnacona on the Grand Mere Subdivision and Mile Sixteen on the La Tuque Subdivision, in the province of Quebec.

Forms of tender and instructions for tendering may be obtained at the offices of the district engineer, Champlain Market, Quebec, division engineer, Tunnel Terminal Station, Lagauchetière street, Montreal, and division engineer, corner of Parks and Metcalfe streets, Ottawa; and at the office of the undersigned.

Plans, specifications and form of contract may be seen at the above offices or copies may be obtained by application to the undersigned on depositing a certified check on a chartered bank of Canada for twenty-five dollars (\$25.00) made payable to the treasurer, Canadian National Railways, which will be refunded on return of plans.

Lowest or any tender not necessarily accepted.

F. L. C. BOND,
Chief Engineer,
Canadian National Railways,
Central Region,
Room 436, New Union Station,
Toronto, Ontario.

Toronto, August 27th, 1923.

Birthdays of Transportation Men in September.

Many happy returns of the day to:—
Wm. Aird, ex Master Mechanic, Locomotive Works, G.T.R., Montreal, now of Barrie, Ont., born in London, Eng., Sept. 3, 1843.

W. B. Bamford, District Freight Agent, C.P.R., Nelson, B.C., born at Belleville, Ont., Sept. 10, 1863.

G. T. Bell, Executive Assistant to Vice President of Traffic, Canadian National Rys., Montreal, born there, Sept. 7, 1861.

E. J. Blais, Foreman Tinsmith, Canadian National Rys., Transcona, Man., born Sept. 26, 1876.

V. T. Boughton, ex Assistant Superintendent, Chapleau Division, Algoma District, C.P.R., Chapleau, Ont., now of New York, born at Troy, N.Y., Sept. 9, 1888.

E. R. Bremner, ex Division Freight Agent, Ottawa Division, G.T.R., Ottawa, born at Toronto, Sept. 9, 1875.

W. E. Burke, ex General Traffic Manager, Canada Steamship Lines, now Vice President, Century Coal Co., Montreal, born at Belleville, Ont., Sept. 23, 1881.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 30, 1864.

A. S. Dawson, Chief Engineer, Natural Resources Department, C.P.R., Calgary, Alta., born at Pictou, N.S., Sept. 6, 1871.

G. F. Diekroeger, District Freight Agent, C.P.R., St. Louis, Mo., born there, Sept. 11, 1871.

W. E. Duperow, Passenger Traffic Manager, Central Region, Canadian National Rys., Toronto, born at Stratford, Ont., Sept. 4, 1872.

R. S. Elworthy, General Agent, Passenger Department, Ocean Traffic, C.P.R., Chicago, Ill., born at London, Eng., Sept. 10, 1877.

H. G. Foreman, Assistant General Treasurer, Canadian National Rys., Montreal, born there, Sept. 2, 1882.

C. B. Foster, Passenger Traffic Manager, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.

G. J. Fox, Superintendent, Calgary Division, Alberta District, C.P.R., Calgary, Alta., born at Montreal, Sept. 24, 1883.

R. S. Gosset, Auditor of Disbursements, Central Region, Canadian National Rys., Toronto, born there, Sept. 28, 1879.

E. Goulet, Agent, C.P.R., New Westminster, B.C., born at Quebec, Que., Sept. 1865.

W. B. Howard, Assistant General Passenger Agent, Eastern Lines, C.P.R., Montreal, born at Chatham, N.B., Sept. 15, 1877.

W. R. Howard, dispatcher, C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1858.

G. C. Jones, General Manager, Telegraph and Telephone Department, Canadian National Rys., Toronto, born at Clyde, N.Y., Sept. 24, 1869.

C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

S. King, London, Ont., formerly in car building service, born at Thetford, Norfolk, Eng., Sept. 12, 1853.

C. C. Labrie, Purchasing Agent, Canadian National Rys., Vancouver, B.C., born at Quebec, Que., Sept. 8, 1882.

R. E. Larmour, General Freight Agent, Eastern Lines, C.P.R., Montreal, born at Brantford, Ont., Sept. 26, 1868.

W. A. Mather, General Superintendent, Saskatchewan District, C.P.R., Moose

Jaw, born at Oshawa, Ont., Sept., 1885.

J. A. Morice, Foreign Freight Agent, C.P.R., Toronto, born at Stratford, Ont., Sept. 17, 1878.

M. B. Murphy, Manager, Winnipeg Joint Terminals, Winnipeg, born at Napa, Cal., Sept. 11, 1866.

H. J. Page, Chief of Investigation Department, Canadian National Rys., Montreal, born at St. John, N.B., Sept. 25, 1871.

J. Paul, District Freight Agent, Canadian National Rys., Winnipeg, born in Euphrasia Tp., Ont., Sept. 13, 1858.

W. J. Pickrell, Master Mechanic, New Brunswick District, C.P.R., St. John, born at London, Ont., Sept. 15, 1880.

H. T. Rawlings, ex Lake Forwarding Agent and Fuel Inspector, Canadian National Rys., now Vice President, Baier Coal Co., Cleveland, Ohio, born at London, Eng., Sept. 27, 1883.

C. S. Richardson, District Freight Agent, C.P.R., Buffalo, N.Y., born at New York, Sept. 26, 1870.

W. D. Robb, Vice President, Insurance, Lands, Express, Telegraphs, Colonization, Development and General Matters, Montreal, born at Longueuil, Que., Sept. 21, 1857.

A. Scott, Division Engineer, Island Division, Atlantic Region, Canadian National Rys., Charlottetown, P.E.I., born at Kirkcaldy, Scotland, Sept. 6, 1884.

F. A. Shaw, General Agent, Freight Department, Canadian National Rys., Cleveland, Ohio, born at Smiths Falls, Ont., Sept. 29, 1872.

J. M. Silliman, Resident Engineer, C.P.R., Ville Marie, Que., born at Easton, Pa., Sept. 8, 1885.

F. W. Sterling, ex District Freight Agent, C.P.R., Edmonton, Alta., now of Quelch and Sterling, Vancouver, B.C., and Shanghai, China, born at Thornbury, Ont., Sept. 13, 1879.

R. B. Thomson, Secretary, Canada Steamship Lines Ltd., Montreal, born there, Sept. 5, 1886.

W. M. Tisdale, Superintendent of Investigation, Northern Ontario, Southwestern Ontario and Montreal Districts, Central Region, Canadian National Rys., Toronto, born at Otterville, Ont., Sept. 7, 1872.

Hon. L. C. Webster, President, Webster Steamship Co., born at Quebec, Que., Sept. 30, 1871.

F. G. Wood, Ontario Freight Agent, Canadian Government Merchant Marine, Toronto, born there, Sept. 15, 1890.

H. A. Young, Northern Navigation Co., Duluth, Minn., born at Brooklyn, N. Y., Sept. 1, 1864.

The Pacific Cable Board has commenced laying its duplicate Pacific cable, the first section undertaken, being from Sidney to Southport, Australia. On the completion of this section, the cable ship Stephan will proceed to Fiji, where the section from Auckland, N.Z., to Suva, will be commenced. The distance of the survey route between Sidney, and Southport is 460½ miles, but the actual length of cable laid will be 492 miles. The type of cable used is 2.12 in. diam. for the inshore section and protected with lead covering and brass tape, and the deep sea cable is 0.829 in. diam. The surveyed route from Auckland to Suva is 1,170 miles, the actual length of cable to be laid being 1,260 miles. On the completion of these two sections, a decision will be made as to the duplication of the section from Suva to Bamfield Creek, B.C.

Diversion of Freight Traffic Between Toronto and Washago.

Heretofore the bulk of freight traffic north and southbound between Toronto and Gravenhurst and beyond, and between Gravenhurst and beyond to Toronto, handled by the Canadian National Rys. has been moved over the G.T.R. line via Allandale, which is the home terminal for locomotive and train men working on the Newmarket and Huntsville Subdivisions, Allandale Division, Southwestern Ontario District, Central Region, and is on Lake Simcoe, 62.7 miles from Toronto. Gravenhurst is on the Huntsville Subdivision, 112 miles from Toronto via Allandale. Haulage tests made recently show that locomotives can haul much heavier trains between Toronto and Washago on the Canadian Northern Ry. north from Toronto, which makes a junction with the G.T.R. line at Washago, at the head of Lake Couchiching, 89 miles from Toronto by the C.N.R. line and 98.5 miles by the G.T.R. line via Allandale, than by the latter line. This Canadian Northern line is part of the Bala Subdivision, Nipissing Division, Northern Ontario District, Central Region. The tests referred to showed that train tonnage could be increased by almost 50 per cent, by routing freight over the Bala Subdivision, due to more favorable gradients, and for this reason the railway management decided to route freight by the Bala Subdivision line, Toronto to Washago, and from Washago north by the G.T.R., Huntsville Subdivision, Allandale Division, the northern terminus of which is North Bay. The arrangements to effect the change necessitated transferring some locomotive and train crews from Allandale to Gravenhurst, the home terminal for the Bala Subdivision men. Some of the men expressed an unwillingness to move from Allandale to Gravenhurst, but this difficulty has been satisfactorily adjusted and four runs bulletined were bid in by Allandale men.

Transportation Events of Twenty-five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for Sept., 1898.

Sir Casimir Gzowski, C.E., dies in Toronto.

C.P.R. builds two rotary snow ploughs for eastern lines.

Gillman Cheney, Vice President, Canadian Express Co., dies in Montreal.

C.P.R. commences double tracking Montreal-Toronto line from Montreal end.

C.P.R. completes copper telegraph wire from Montreal to Vancouver.

H. E. Whittenberger appointed Trainmaster, Hamilton to Port Dover, G.T.R.

Interstate Commerce Commission decides C.P.R. not entitled to differentials on Pacific Coast passenger business.

West Shore Rd. reduces round trip fare from Buffalo to New York to \$10, Lehigh Valley reduces to \$6, and New York Central and other lines follow suit.

D. B. Hanna, Superintendent, Lake Manitoba Ry. & Canal Co., also given jurisdiction over Manitoba & Southeastern Ry., under construction.

C. M. Hays' salary, as President, G.T.R., increased from \$25,000 to \$35,000; he also receives \$10,000 a year as Central Vermont Ry. receiver.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Abitibi Transportation and Navigation Co.—A press report states that the operation of this railway, which extends from the terminus of the Timiskaming and Northern Ontario Ry. branch at Iroquois Falls, to Hughes, Ont., on the National Transcontinental Ry., 15.76 miles, together with an 8-mile logging branch, is enabling the Abitibi Pulp and Paper Co. to operate its plant more efficiently and economically. It is expected that the newsprint output, which now runs from 18 to 20 cars a day, will be maintained all winter. (March, pg. 118.)

Alaska Rd.—The last spike on the Alaska Rd., built by the U.S. Government and extending from Seward, at the head of Resurrection Bay, to Fairbanks, 471 miles, was driven by the late President Harding, on July 15.

Alma and Jonquiere Ry.—A press report states that the foundations for piers and trestles on this 10 mile railway, which the Quebec Development Co. is building in connection with its power development at the Grande Discharge of Lake St. John, Que., are completed and ready for the superstructures. This work has been done by Wm. I. Bishop, Ltd., Montreal. The Dominion Bridge Co. is supplying approximately 900 tons of steel work to be used in connection with the trestle bridge across the Bedard River, and the Canadian Bridge Co. has the contract for the fabrication and erection of the superstructure of the other three bridges, descriptions of which structures have already been given in Canadian Railway and Marine World. (July, pg. 30.)

Burrard Inlet Tunnel and Bridge Co.—The Board of Railway Commissioners has authorized the company to build a bridge across the second narrows of Burrard Inlet, Vancouver, B.C., and has approved the general location of the same and its approaches, and the location plans for the bridges. The shareholders, at an extraordinary general meeting on July 16, authorized the directors to issue \$630,000 of debentures to provide for construction of the bridge. The contract for the work between the company and the Northern Construction Co. and Major General Stewart is reported to have been signed July 25. G. B. Strauss, of the Strauss Bascul Bridge Co., Chicago, Ill., was in Vancouver recently in connection with the designs for the bascule span. It is reported that it was decided it will be of the single leaf type, details of which are being worked out. (Aug., pg. 376.)

The Canadian Niagara Bridge Co. is the Canadian end of a project represented in the United States by the American Niagara Rd. Corporation, in which are associated the New York Central Rd. Co., the Michigan Central Rd. Co., and the Toronto, Hamilton and Buffalo Ry. Co., through the last of which the C.P.R. Co. is interested. The Canadian company has power to build certain railway lines in Canada to connect with the bridge, and to associate itself with the U.S. company in building the bridge. The United States Rd. Corporation has applied to the Interstate Commerce Commission for authority to build about 10 miles of railway in Erie County, N.Y., from a connection with the New York Central Rd., at its junction with the Lehigh Valley Rd. at Tonawanda Jct., to a junction with the Canadian Niagara Bridge Co's railway at the center of the

projected bridge at the international boundary. A similar application was made by the company to the New York State Public Service Commissioners on Aug. 14, when decision was reserved.

There will be two bridges necessary as the river channel is divided by Grand Island, on which it is proposed to lay out yard tracks. There will be a draw span in each bridge to facilitate navigation, and accommodation will be provided for vehicular and pedestrian traffic. A. H. Smith, President New York Central Rd., is President of the American Niagara Rd. Corporation. (Aug., pg. 376.)

The Duluth and Ontario Ry. Co. is reported to be negotiating for putting on the market an issue of bonds for the purchasing of the old Duluth and Northern Minnesota Rd., and its extension to Fort William, Ont. R. Waldron, Duluth, is the principal promoter.

Edmonton, Dunvegan and British Columbia Ry.—Central Canada Ry.—We are officially advised that the Alberta Government has invited tenders for the supply of approximately 3,300 gross tons of 60 lb. rails and fastenings therefor for the extensions of the Edmonton, Dunvegan and British Columbia Ry. and the Central Canada Ry. The extension of the first mentioned railway will be from the present terminus of the Grande Prairie branch at Grande Prairie, 15 miles westerly to Sec. 21-71-8 west of 6th Meridian, 15 miles through a well settled country, consisting of open prairie with occasional bluffs. There will be three wooden trestles, one of 42-bents pile and frame construction across Bear Creek; a 4-bent trestle across Flyingshot Creek, and a 15-bent pile and frame trestle across Spring Creek. The location plans show a maximum gradient of 0.7%, with a maximum curvature of 4 degrees, and the grading will involve approximately 12,000 cubic yards a mile. The extension of the C. C. Ry. will be for 13 miles westerly from the present terminus at Berwyn to Sec. 15-18-1 west of 6th Meridian, through a well settled farming district, consisting of open prairie with occasional bluffs. The plans show a line with a maximum gradient of 5%, with only 2 short curves, and no bridge work. A press report states that the contract for grading on this line will probably be let to James Mohler, Strome, Alta.

C. E. Cartwright and James Kennedy are reported to be making surveys as to the general condition of the two lines for the Government, to determine whether or not there was any foundations for Alberta's Deputy Minister of Railways strictures on the manner in which they had been reconditioned by the C.P.R. as operating lessee, contained in his report for 1922. The funds for this work were provided by the Alberta Government. (Aug., pg. 376.)

Esquimalt and Nanaimo Ry.—The Victoria B.C., City Solicitor, is reported as expecting that the construction of the final section of the railway and highway bridge at Johnson St. will be completed by the end of September or early in October, when the short strip of paving westward, necessary to finish the entire undertaking will be laid. (Aug., pg. 376.)

Fort Alexander Ry.—An announcement was made recently in Winnipeg by B. W. Thompson, that tenders would be invited at once for the construction of the Manitoba Pulp and Paper Co's pulp and paper mills at Fort Alexander, Man.

The company is reported to have completed the preliminary work including a dock at the site of the mill, and a pier in Traverse Bay. It proposes to build a railway from Beconia, mile 52 on the Canadian National Rys. Winnipeg-Victoria Beach line to Fort Alexander at the head of Traverse Bay, Lake Winnipeg. (July, pg. 320.)

Kettle Valley Ry.—The Board of Railway Commissioners has authorized the replacement of the following bridges:—21.4, 28.4, 30.8, 33.7 and 39.0 over the Nicola River, Merritt Subdivision, B.C. (March, pg. 119.)

Lake Huron and Northern Ontario Ry.—A deputation from the company waited on the Premier of Ontario, Aug. 1, and asked for a revival of its charter powers to extend the line from the present terminus at Rock Lake northerly, and so enable it to earn the land grant authorized some years ago. The original company was the Bruce Mines and Algoma Ry., which built a line from near Bruce Mines, Ont., on the C.P.R. North Bay-Sault Ste. Marie line, to Rock Lake, about 17 miles. The title was subsequently changed to the Lake Huron and Northern Ontario Ry., power being given to extend the line northerly towards Hudson Bay, a land grant being authorized upon certain conditions of colonization and development. The mining operations at Rock Lake having ceased the railway stopped running, and the company was reorganized. Several efforts were made to raise capital to revive the project, but all failed. The charter, however, was kept alive, the last extension of time expiring in 1922. When the matter was then before the Ontario Legislature, the Premier, E. C. Drury, announced that the Government was considering the advisability of taking over the railway from Bruce Mines to Rock Lake and extending it to the Missigua Forest reserve. He made an inspection of the property during the following autumn, but the Government did not take any action in the matter prior to its defeat on June 25. Premier Ferguson advised the delegation that the Government would look into the matter. We were officially advised, Aug. 16, that the matter was being thoroughly investigated by the Lands and Forests Department and that when the officials have secured sufficient data to form a conclusion the question will be considered by the Government. (May, pg. 206.)

Michigan Central Rd.—A press report states that it is estimated that the expenditures on additional facilities and general betterments on the Canadian lines for this year will amount to approximately \$2,000,000, distributed as follows: Laying rail, \$760,000; ties, \$700,000; ballasting, \$175,000; St. Thomas yard extension, \$500,000. At the end of July it was reported that of the 250,000 new ties proposed to be laid, 140,000 had been put in; that 60 miles of track out of 75 miles had been relaid; and that stone ballasting was being put down on about 25 miles. Considerable progress is reported to have been made in the yard extension at St. Thomas. Some additions are reported to be under construction at St. Thomas station, and a new 75-ton coal dock is being built at Fargo. (Aug., pg. 376.)

Newfoundland Ry.—The Newfoundland Finance Minister, in presenting his budget to the Legislative Assembly, Aug. 1, stated that the Government proposed to

raise a loan of \$3,000,000 for railway equipment required as a result of the Government taking over the railway system and for its interest in the Humber River development project.

Quebec Central Ry.—We are officially advised that it is not likely that any construction will be done this year on the proposed diversion and rebuilding of the line from Beauce Jct. to Beauceville, and the extension therefrom to a junction with the Temiscouata Ry. at Cabano, Que. (Aug., pg. 376.)

Timiskaming and Northern Ontario Ry.—We are officially advised that the Commission has given some consideration to the construction of a branch line to serve the South Lorrain silver mining camp, but that no instrumental surveys have been made. A press report states that the starting point of the branch would be either North Cobalt, Kerr Lake or Cassidy siding.

Location plans for the branch line under construction, under the Nipissing Central Ry. charter, from Swastika to Larder Lake, have been completed. They show a line running from Swastika northeast for about 2 miles, then swinging easterly to the site of the new Kirkland Lake station, through the Kirkland Lake mining property, round the north side of Gull Lake, crossing the narrows of Gull Lake, thence through a number of mining properties, in Labal and Gautier Tps., then turning south of east crossing in Blanche River, on to the north shore of Larder Lake in McVittie Tp. We are officially advised that the Sinclair Construction Co., Toronto, the general contractors, have let the following sub-contracts: Clearing right of way, Andrew Devine, North Bay, Ont.; grading mile 0 to 1, Thomas Marshall Co., Swastika, Ont.; grading mile 1 to 8, Chisholm Construction Co., Kirkland Lake, Ont.; grading mile 8 to 16, James Dempsey, Swastika, Ont.; grading mile 16 to crossing of Blanche River and as far as the general contract runs, W. W. Murray, Dane, Ont.; concrete and masonry work, G. W. Jewett Co., Montreal, with construction headquarters, Swastika, Ont.; timber bridges, Brennan and Egan, Arnprior, Ont., with construction headquarters at Swastika, Ont. All these subcontractors have their plant and men on the job and work is being prosecuted vigorously. The work is being supervised for the general contractors by W. J. Bishop, Division Engineer, with M. S. Sutherland, T. H. Harrison and E. W. Bennett as resident engineers, general headquarters being at Swastika.

Members of the Timiskaming and Northern Ontario Railway Commission were reported to have returned on Aug. 15 from an inspection trip over the 70 mile extension being built from Cochrane to near New Post on the Abitibi River, Aug. 15. Tracks have been laid at the end of 1922 to the second crossing of the Abitibi River, mile 44.4, and grading and other work is being pushed forward on the remaining mileage. The contract, which is held by Grant Smith & Co. and McDonnell Ltd., calls for the completion of the extension this year.

We are officially advised that the Ontario Government has under consideration a proposal for encouraging the establishment of a creosoting plant at Cochrane, Ont., for the treatment of ties. The railway uses 200,000 a year for replacements on the line, and the proposition is that the T. and N.O.Ry. Commission will enter into a contract with the creosoting plant for its requirements.

It is also expected that the Canadian National Rys. management would give a contract for creosoting about 300,000 a year. As creosoting is claimed to approximately double the life of ties it is estimated that a saving of about \$50,000 a year would be made on maintenance costs, besides providing employment for a considerable number of men. (Aug., pg. 376.)

Negotiations for the creosoting are being carried on with Calder, Canada, Limited, the Chairman of which will be either John J. Calder or Sir James Calder, C.B., of London, Eng. Major General Alexander McDougall, C.B., will be Managing Director. (Aug., pg. 376.)

Transportation of Alberta Domestic Coal.

Canadian Railway and Marine World has, in previous issues, dealt with the transportation aspect of the Canadian fuel situation, particularly as concerns the possibility of an eastern market for Alberta domestic coal. A new feature has been injected into the situation by a proposition that this coal be brought to Toronto and other Ontario points by the lake and rail route, with trans-shipment at the head of Lake Superior, as stated in a Toronto press report of Aug. 16, which said in part: "Premier Ferguson was yesterday waited upon by a delegation of Alberta coal men, headed by Sir Geo. Filmer, who said that they were prepared during the coming autumn and winter to ship 100,000 tons of coal here under the conditions of transport which now prevail. The plan which they propose is to ship the coal by rail to Fort William and by steamship the remainder of the distance. They claimed that a substantial reduction from rail haulage charges could be thus effected, and the coal laid down at a price which would make it compete attractively with the product of U.S. mines."

In the absence of definite information at this time as to what rate the coal operators expect to get from the Alberta mines to Fort William, and by ship from Fort William to port of destination, and also as to trans-shipment costs and final distribution charges, attention may be given to another important feature of the proposed movement, viz., the Alberta coal's ability to stand the increased handling and exposure incidental to the proposed method of transporting it. The following questions and answers, contained in the report for April 13, of the House of Commons committee investigating the fuel question, are interesting in this connection: Question by D. Spence, M.P. for Parkdale, Ont.: "You would not want the Alberta coal exposed to rain?" Answer by H. Stutchbury, Trade Commissioner for Alberta: "No, it should be under reasonable cover. As long as it is away from the rain and out of the hot sun, you are not going to see much disintegration. It will stand a reasonable amount of handling." Question by E. J. Garland, M.P. for Bow River, Alta.: "You know there is a prejudice against these coals, because of the danger of slacking?" Mr. Stutchbury: "Yes." Mr. Garland: "Of course your opinion is that that does not take place when it is put into the cellars?" Mr. Stutchbury: "Not at all. It would not be possible to ship many of our coals, which are quite suitable for this market, to Ontario in open cars. We could not use the big U.S. gondolas."

The following questions and answers in the April 12 report of the Senate fuel committee are also of interest: Question by Senator J. S. McLennan: "How would the Alberta domestic coal stand on a dump in the open air?" Mr. Stutchbury: "It would not stand at all." Mr. McLennan: "And it has a disadvantage of not being able to be stored in the open air?" Mr. Stutchbury: "No, it cannot be stored in the open air. It can be stored in an ordinary shed." Senator Laird, "What are the rates today?" Mr. Stutchbury: "From Edmonton, Drumheller or Lethbridge to Toronto is \$12.70; to Ottawa it is about \$13.20; that is all rail." Mr. Laird: "What would it be lake and rail?" Mr. Stutchbury: "I don't think lake and rail would be a feasible proposition for our domestic coals; it would break it up too much; the same is true of the Welsh anthracite."

From Mr. Stutchbury's replies, as quoted, it would seem that the Alberta domestic fuel's ability to stand the lake and rail trip without serious disintegration is doubtful, and that the attempt to get the coal into the Ontario market by that route would meet with many difficulties. If the coal had to be carried from the mines to the head of Lake Superior in box cars, the work of unloading them for trans-shipment would be costly; and the coal would have to be put on dumps at Fort William and again at the unloading port on the lower lakes, and this, together with the disintegration due to repeated handling, would, according to Mr. Stutchbury, cause considerable deterioration in the quality. In regard to Mr. Stutchbury's reference to Welsh anthracite, our understanding is that the trans-shipment involved in the handling of it does not affect it seriously, although it results in the formation of a certain amount of slack. The testimony of G. R. Pratt, Fuel Engineer for the Alberta Government, before the House of Commons fuel committee on May 17, was to the effect that he thought Alberta domestic fuel would carry in open cars without disintegration taking place more than two or three inches in from the surface, and that while in the west the demand was for large lump coal, it seemed to him that the bulk of the eastern demand was for the smaller lump varieties, so that breakage in handling and trans-shipment would not be such a serious matter as would first appear. It would seem that the only conclusive way to demonstrate whether the Alberta coal can stand a rail and water journey to Ontario markets would be to make a trial shipment. In the meantime, the chief concern for the Alberta operators who are reported as considering the lake and rail route will be the transportation rates which they can obtain from the rail and water carriers.

Railway Accidents Throughout Canada.

—The number of railway accidents during July, reported to the Board of Railway Commissioners, was 267, in which 2 passengers, 13 employees, and 23 others were killed, and 38 passengers, 179 employees and 63 others were injured. Included in "others" were 8 persons killed and 38 injured, in 32 highway crossing accidents, the crossings being protected in 12 cases by bells, gates or watchmen, and being unprotected in the balance. Motor vehicles were concerned in 22 of these accidents, other vehicles in 6, pedestrians in 3, and a bicycle in 1.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

33,898. July 14.—Approving plans of station building in Emerson, Man., to replace building destroyed by fire.

33,899. July 13.—Declaring that for the present the C.P.R. crossing at mile 7, MacLeod Subdivision, near Midnapore, Alta., is protected to Board's satisfaction.

33,900. July 14.—Authorizing Canadian National Rys. to build highway crossing, between Sec. 19, Tp. 5, Range 16, and Sec. 24, Tp. 5, Range 17, west Principal Meridian, Man.

33,901. July 16.—Approving supplement 6 to Express Classification for Canada 5, making a reduction on bodies of freight motor trucks.

33,902. July 14.—Approving plan E-3-122, showing location of station building at St. Hermas, Que.

33,903. July 14.—Extending for 30 days from date, the time within which C.P.R. may complete installation of automatic bell and wigwag signal at Pembroke St., Pembroke, Ont.

33,904. July 13.—Approving C.P.R. clearances at track scale on Mildand Grain Co's siding, Calgary, Alta., C.P.R. to keep men off sides of cars.

33,905. July 14.—Authorizing Canadian National Rys. to build spur at mile 1469, Telkwa Subdivision, in Lot 3553, Range 5, Coast District, B.C., to be completed within three months.

33,906 to 33,908. July 14. 13.—Authorizing C.P.R. to replace 100-ft. through truss span by 100-ft. through plate girder span at bridge 109.4 over Blanche River, three 150-ft. deck truss spans by 3 150-ft. deck truss spans at bridge 62.0 over La Rouge River; and 150-ft., 200-ft. and 100-ft. through truss spans by two 78-ft. deck plate girder spans, one 200-ft. through truss span and two 53-ft. deck plate girder spans, at bridge 84.6, over North Nation River, Lachute Subdivision, Que.

33,909. July 16.—Authorizing Canadian National Rys. to build second track across Hamilton Radial Electric Ry. at Brant Ave., near Burlington, Ont.; C.N.R. to pay the cost of any changes in interlocking plant and the cost of installing and maintaining new diamond in west track.

33,910. July 14.—Certifying that Canadian National Rys. book of reference on plan 1310 which shows H. B. Jarman as owner of part of land affected, should show W. Rainsfelt instead, and that correction has been allowed.

33,911. July 16.—Granting C.P.R. relief from approval of shareholders and publication in electoral districts of agreement dated June 1, 1921, with Grand Trunk Pacific, Canadian Northern, Edmonton, Dunvegan & British Columbia Ry. Companies and recommending same to Governor in council for sanction.

33,912. July 18.—Declaring that for present, C.P.R. crossing at Richmond St., London, Ont., is protected to Board's satisfaction.

33,913. July 18.—Ordering Canadian National Rys. within 60 days to install improved type of wigwag signal at crossing of Riddell St., Woodstock, Ont.

33,914. July 18.—Relieving for the present, C.P.R. from providing further protection at crossing of public highway, mile 106.2, Cascade Subdivision, B.C.

33,915. July 19.—Suspending, until further order, provisions under certain Canadian National Rys. tariffs regarding shipments to and from Prince Edward Island points. This order was given fully in Canadian Railway and Marine World for August, page 390.

33,916. July 18.—Extending for 30 days from date, the time within which C.P.R. may complete installation of wigwag signal at Eglinton, Ave., York Tp., Ont.

33,917. July 18.—Authorizing C.P.R. to build freight shed and dock at Fort William, Ont.

33,918. July 18.—Approving C.P.R. clearances at proposed canopy over platform at Beach Foundry siding, Ottawa, Ont.

33,919. July 18.—Authorizing Canadian National Rys. to cross public highway known as Petit Brule Road, Que.

33,920. July 18.—Approving plan C-150, July 10, 1923, showing standard form of pile trestle, to be used on Nipissing Central Ry. Swastika-Wendigo Lake extension.

33,921. July 18.—Authorizing Canadian National Rys. to build subway at crossing of Fairfield St., Moose Jaw, Sask.

33,922 to 33,926. July 18.—Approving Bell Telephone Co. agreements with Murray-Brighton Telephone System; Pontiac Rural Telephone Co.; Northcote Farmers Telephone Co.; Wotton Local Telephone Co., and Lanark and Ramsay Telephone Co.

33,927. July 18.—Authorizing Canadian National Rys. to cross Cote des Anges South Road, Two Mountains County, Que.

33,928. July 18.—Authorizing C.P.R. to build spur for D. D. Wood & Sons, Ltd., in n.w. ¼ Sec.

23, Tp. 13, Range 9, east of Principal Meridian, Man.

33,929. July 20.—Approving supplements 1 and 2 to connecting agreement between Bell Telephone Co. and Dummer Municipal Telephone System.

33,930 to 33,934. July 18.—Authorizing Canadian National Rys. to cross public highways between St. Canut and St. Jerome parishes; between Cote St. Jean and Cote des Saints concessions; between Cote St. Louis Corbeils and Petit Brule concessions; Cote des Anges North Road and between St. Monique and St. Augustin parishes, Two Mountains County, Que.

33,935. July 24.—Authorizing City of Vancouver, B.C., to build overhead pedestrian bridge across C.P.R. right of way at foot of Carrall St.

33,936. July 24.—Amending order 32,673, July 29, re Michigan Central Rd. bridge over Niagara River just below Niagara Falls, Ont.

33,937. July 26.—Authorizing Canadian National Rys. to open for traffic its line from mile 52.6 to 69.4, Cowichan Subdivision, B.C.

33,938. July 27.—Amending order 22,237, July 18, 1914, restricting to 48 hours, time during which carloads of lumber and forest products shipped from U.S. to Canada by Canadian National Rys. shall be held without demurrage charges at rate basing points, awaiting reconsignment. This order is given fully on another page.

33,939. July 26.—Extending to Sept. 1, time within which Canadian National Rys. may complete installation of interlocking plant at Hurdman, Ont.

33,940. July 25.—Approving C.P.R. plan showing revision of interlocking plant at crossing of Canadian National Rys. at Canpa, Ont.

33,941. July 26.—Extending to Sept. 15, time within which Canadian National Rys. may complete fencing on its Swan River-Prince Albert line as required by order 33,212.

33,942. July 26.—Approving C.P.R. clearances at two-track coaling plant at Ignace, Ont.

33,943. July 14.—Dismissing City of Montreal application to open and extend Green Ave. across Canadian National Rys.

33,944. July 25.—Authorizing Canadian National Rys. to cross Brant St., Burlington, Ont., with second track.

33,945. July 24.—Authorizing International Coal & Coke Co., Coleman, Alta., to cross under C.P.R. in Sec. 8, Tp. 8, Range 4, west 5th Meridian, Alta., with necessary haulageways and airways for mining coal.

33,946. July 25.—Authorizing Canadian National Rys. to cross with second track, highway at station 20-54, south of Burlington, Ont.

33,947. July 25.—Authorizing Halifax & Southwestern Ry. to replace existing timber bridge over Puddle River, N.S.

33,948. July 24.—Approving general location of Burrard Inlet Tunnel & Bridge Co's Second Narrows bridge and approaches, Vancouver, B.C.

33,949. July 24.—Authorizing Nipissing Central Ry. to build level crossings on its Wendigo-Swastika Lake Branch.

33,950. July 30.—Approving Burrard Inlet Tunnel & Bridge Co. plan showing location across Second Narrows at Vancouver, B.C.

33,951. July 24.—Dismissing application of Vancouver, Victoria & Eastern Ry. and Navigation Co., for authority to remove its railway station at Grand Forks, B.C.

33,952. July 24.—Extending to Sept. 30, time within which C.P.R. may complete erection of standard class A-3 station at Erickson, B.C.

33,953. July 30.—Dismissing complaint of Transcona, Man., Ratepayers Association, against passenger accommodation, train service and fare charged by Canadian National Rys., between Transcona and Winnipeg.

33,954. July 30.—Ordering C.P.R. to build spur for Buchanan & Wilband's sawmill near Choate, B.C.

33,955. July 30.—Amending order 33,895 re Canadian National Rys. locomotives operated through non-forested territory in Prairie Provinces being exempted from clause 8 of general order 362, by providing that for present year, these provisions be suspended in case of locomotives, steam shovels, ditching machines or pile drivers equipped with barrel type of spark arresters.

33,956. July 25.—Dismissing Express Traffic Association's application for order approving form of release for empty cream cans left on station platforms.

33,957. July 24.—Approving supplement 1 to agreement between Bell Telephone Co. and Thamesville Telephone Co.

33,958. July 24.—Approving agreement between Bell Telephone Co., American Telephone & Telegraph Co., New York Telephone Co., New England Telephone & Telegraph Co. and Michigan State Telephone Co.

33,959. July 30.—Ordering that fencing on both sides of Edmonton, Dunvegan & British Columbia Ry., mile 85.8 to 90.8 and 92.3 to 94, be completed by Sept. 15.

33,960. July 26.—Authorizing Saskatchewan Highways Department to carry highway across C.P.R. in s.e. ¼ section 10, Tp. 37, Range 16, west 3rd Meridian.

33,961. Aug. 1.—Approving Supplement E to

Express Classification for Canada no. 5.

33,962. July 31.—Authorizing Burrard Inlet Tunnel & Bridge Co. to build bridge at Second Narrows, Vancouver, B.C.

33,963. July 31.—Relieving Canadian National Rys. from providing further protection at Cockburn St. crossing, Kerwood, Ont.

33,964. July 31.—Relieving Niagara, St. Catharines & Toronto Ry. from providing further protection at crossing at Dainsville Road 3 miles south of Welland, Ont.

33,965. July 31.—Relieving C.P.R. from providing further protection at crossing at mile 3, Megantic Subdivision, Que.

33,966. July 31.—Approving Windsor, Essex & Lake Shore Rapid Ry. standard mileage freight tariff C.R.C. 307.

33,967. July 30.—Authorizing C.P.R. to close and divert highway crossing in Lot 687, Range 7, and Lot 545, Range 6, Bolton Tp., Que.

33,968. 33,969. July 31.—Approving supplements to connecting agreements between Bell Telephone Co., South Malahide Telephone Co. and Howick Municipal Telephone System.

33,970. July 20.—Authorizing Canadian National Rys. to cross Cote St. Augustin Road, Two Mountains County, Que.

33,971. July 31.—Relieving Canadian National Rys. from providing further protection at crossing at St. Claire, Loretteville, Que.

33,972. Aug. 1.—Authorizing Kettle Valley Ry. to replace bridge 21.4 over Nicola River, Merritt Subdivision, B.C.

33,973. Aug. 1.—Authorizing Canadian National Rys. to divert Little Saskatchewan River and to build bridge across same in Sec. 24, Tp. 12, Range 21, west first meridian, Sask.

33,974. Aug. 1.—Relieving Canadian National Rys. and C.P.R. from maintaining night signalman between 10.30 p.m. and 6.30 a.m. at crossing at Strathcona, Alta.

33,975. Aug. 1.—Approving C.P.R. clearances at bridges 99.9 and 102.96, Winchester Subdivision, Ont.

33,976. 33,977. Aug. 3.2.—Authorizing Kettle Valley Ry. to replace bridges 30.8 and 28.4 over Nicola River, B.C.

33,978. Aug. 3.—Authorizing Halifax & Southwestern Ry. to replace bridge over Annapolis River, mile 52.4 Middleton Subdivision, N.S.

33,979. Aug. 3.—Authorizing Kettle Valley Ry. to replace bridge 39.0 over Nicola River, B.C.

33,980. 33,981. Aug. 3.—Authorizing C.P.R. to replace bridges 68.31 over Six Mile Creek, and 73.85, Mountain Subdivision, B.C.

33,982. Aug. 3.—Authorizing Halifax & Southwestern Ry. to replace bridge across Mush-a-Mush River at mile 65.9 Chester Subdivision, N.S.

33,983. Aug. 3.—Authorizing Kettle Valley Ry. to replace bridge 33.7 across the Nicola River, Merritt Subdivision, B.C.

33,984. Aug. 3.—Authorizing C.P.R. to replace span in bridge 106.1, over Blanche River, Lachute Subdivision, Que.

33,985. Aug. 4.—Ordering C.P.R. to place broken stone on southern approach to crossing at 26th St., Brandon, Man., widen crossing and level knolls obstructing view, City to trim trees and place warning signs.

33,986. Aug. 3.—Authorizing C.P.R. to replace span in bridge 89.2, over Blanche Creek, Lachute Subdivision, Que.

33,987. Aug. 4.—Ordering Canadian National Rys. to commence widening cut to full width of right of way for 300 ft. on each side at first crossing east of Rivers, Man.

33,988. Aug. 4.—Authorizing C.P.R. to replace span on bridge 17.77, over Eagle River, Shuswap Subdivision, B.C.

33,989. Aug. 3.—Extending to Sept. 5, time within which C.P.R. may install wigwag signal at Brock Road crossing, Puslinch, Ont.

33,990. Aug. 4.—Authorizing C.P.R. to build spur for City of Nelson, B.C.

33,991. Aug. 3.—Authorizing C.P.R. to build bridge at mile 56.4, over Otter River.

33,992. Aug. 7.—Declaring that for the present, Hamilton Radial Ry. crossing at Brant St., Burlington, Ont., is protected to Board's satisfaction.

33,993. Aug. 7.—Declaring that for the present, Canadian National Rys. crossing at Robin Yard, Man., is protected to Board's satisfaction.

33,994. Aug. 8.—Declaring that for the present, C.P.R. crossing of East Broadway Ave., Merrickville, Ont., is protected to Board's satisfaction.

33,995 to 34,005. Aug. 7.—Approving Bell Telephone Co. agreements with Augsburg Telephone Association; North Algonia Telephone System; Balmoral Telephone System; Moscow Rural Telephone Association; Burgessville Rural Telephone Co.; Dare Bay Telephone Co.; Donegal Telephone Co.; Lower Bonnechere Telephone Co.; Grattan No. 7 Telephone Association; East Wakefield Telephone Co.; and Wilberforce Rural Telephone Co.

34,006. Aug. 4.—Amending order 33,308, Jan. 20, re C.P.R. crossing east of Sec. 15, Tp. 9, Range 17, West 3rd Meridian, Sask.

34,007. Aug. 7.—Amending order 33,895, re Canadian National Rys. equipment provided with

barrel type spark arrester operating through non-forested territory in Prairie Provinces.

34,008. Aug. 7.—Authorizing Burrard Inlet Tunnel & Bridge Co. to erect overhead bridge as highway crossing over C.P.R. between mileposts 124 and 125, Vancouver, B.C.

34,009. Aug. 7.—Authorizing Hydro-Electric Power Commission of Ontario to erect its trolley system over Windsor, Essex & Lake Shore Rapid Ry. along Erie St., Windsor, Ont.

34,010. Aug. 9.—Authorizing Temiscouata Ry. to remove station agent at Whitworth, Que.

34,011. Aug. 8.—Approving revised general location of C.P.R. Archive-Wymark Branch mile 68.0 to 77.0, Sask.

34,012. Aug. 8.—Ordering that 25% of cost of improving view at C.P.R. crossing west of Locust Hill, Ont., be paid out of railway grade crossing fund.

34,013. Aug. 8.—Extending for 90 days, time within which Canadian National Rys. may complete installation of wigwag at Dixie Road, or golf links crossing, between Mimico and Port Credit, Ont.

34,014. Aug. 9.—Authorizing Canadian National Rys. to use bridge at St. Paul St., St. Catharines, Ont.

34,015. Aug. 7.—Authorizing St. Andrews municipality, Man., to make highway crossing over C.P.R., at Matlock Beach, Man.

34,016. Aug. 8.—Authorizing Canadian National Rys. to cross John St., Shelburne, N.S., with a siding.

34,017. Aug. 4.—Authorizing Pitt Meadows municipality, B.C., to make highway crossing over C.P.R. at McTavish Road.

34,018. Aug. 7.—Approving agreement between Bell Telephone Co. and Wheatley Telephone Co.

34,019. Aug. 9.—Authorizing Canadian National Rys. to build spur for R. B. Herron and Co., Tionaga, Ont.

34,020. Aug. 9.—Declaring that for the present, Canadian National Rys. crossing west of Humber River Bridge, Toronto, is protected to Board's satisfaction.

34,021. Aug. 10.—Ordering Great Northern Ry. to revise its tariff on logs in carloads from A. J. Farquharson's spur at mile 65 of its line, to Fernie, B.C., to provide for minimum for carloads of 8,000 ft. a car, except that minimum will be 7,000 ft. a car, where cars of 60,000 lbs. capacity or less or furnished; revised tariff to be filed for Board's approval and to become effective two weeks from date.

34,022. Aug. 15.—Authorizing Three Rivers Traction Co. to cross the C.P.R. at St. Philippe St., Three Rivers, Que.

34,023. Aug. 15.—Approving supplements to connecting agreement between Bell Telephone Co. and Nelson Telephone Co.

34,024. Aug. 9.—Ordering Canadian National Rys. to build farm crossing for J. W. Woodward, at mileage 23, Clearwater Subdivision, B.C.

34,025. Aug. 16.—Authorizing Manitoba Power Commission to erect power wires across Canadian National Rys. at Newton Siding.

34,026. Aug. 15.—Extending to Nov. 1, the time within which Canadian National Rys. may complete interlocking plant at Harrowsmith, Ont.

34,027. Aug. 11.—Authorizing Essex Terminal Ry. to operate over crossings of its line by Hydro Electric Rys., Essex Division, at Main St., south of Langlois Road, and north of Chappus St., Sandwich West Tp., Ont.

34,028. Aug. 13.—Approving revised location C.P.R. Bassano Easterly Branch (Empress-Milden), mile 192.46 to 196.69.

34,029. Aug. 10.—Declaring that for the present, the second highway crossing south of Emery, Ont., over C.P.R., is protected to Board's satisfaction.

34,030. Aug. 9.—Authorizing Maryfield Village, Sask., to make highway across C.P.R. at Main St.

34,031. Aug. 13.—Authorizing C.P.R. to build ballast pit spur across road allowance between Secs. 22 and 23, Tp. 3, Range 21, West of 2nd Meridian, at Echo, Sask.

34,032. Aug. 14.—Approving plan showing proposed layout of Canadian National Rys. station at Napanee, Ont.

34,033. Aug. 14.—Authorizing Canadian National Rys. to cross with its second track the Port Arthur Civic Ry. on Fort William Road.

34,034. Aug. 13.—Authorizing Canadian National Rys. to divert east and west road allowance between Secs. 22 and 27, Tp. 49, Range 27, West 3rd Meridian, Sask.

34,035. Aug. 13.—Authorizing Canadian National Rys. to build spur for Kaministiquia Lumber Co., Port William, Ont.

34,036. Aug. 13.—Authorizing C.P.R. to build spur for North West Lumber Co., across Government surveyed road in s.e. ¼ Sec. 1, Tp. 62, Range 27, West 4th Meridian.

34,037. Aug. 13.—Approving supplement F to Express Classification for Canada 5.

34,028. Aug. 13.—Declaring that for the present, the first public crossing west of L'Orignal station, Ont., across Canadian National Rys., is protected to Board's satisfaction.

34,039. Aug. 14.—Authorizing Canadian National Rys. to close interlocking plant at crossing of C.P.R. in s.e. ¼ Sec. 32, Tp. 9, Range 20, West Principal Meridian, against its trains on Sundays and between 7 p.m. and 3 a.m. weekdays.

34,040. Aug. 16.—Authorizing Alberta Public Works Department to make highway across C.P.R. between Secs. 3 and 4, Tp. 25, Range 2, W. 5th M.

Long Regular Locomotive Runs.

Canadian Railway and Marine World for August called attention to the Canadian National Rys. management's intention to operate six of its new 6,000 class mountain type locomotives in passenger service through from Montreal to Toronto, 334.04 miles, and vice versa. As then stated, locomotives on this run have heretofore been changed at Brockville, 125.64 miles from Montreal, and Belleville, 208.4 miles from Montreal. Attention was directed in the same article to the prevalence of long passenger locomotive runs on some U.S. lines, and the economies to be effected by operating passenger locomotives over two or more divisions were also pointed out. We have since been advised that the C.N.R. 6 mountain type locomotives assigned to the Central Region will be used on train 14, leaving Toronto at 9.20 a.m. and arriving at Montreal at 5.40 p.m.; on train 15, leaving Montreal at 10 a.m. and arriving at Toronto at 5.40 p.m.; on train 16, leaving Toronto at 11 p.m. and arriving at Montreal at 7.30 a.m.; on train 17, leaving Montreal at 11 p.m. and arriving at Toronto at 7.30 a.m., and that locomotive crews will be changed at Belleville. On account of large tender capacity, it is expected that the locomotives will have no trouble in making the trip without having to take coal en route.

The 10 mountain type locomotives assigned to the Atlantic Region are being used on trains 1, 2, 3 and 4, as follows: three on Springhill Subdivision, Moncton Division, between Truro and Moncton, 124.73 miles; three on Harcourt and Bathurst Subdivisions, Campbellton Division, between Moncton and Campbellton, 185.57 miles; and four on the Matapedia and Rimouski Subdivisions, Campbellton Division, between Campbellton and Riviere du Loup, 188.78 miles. When the facilities at Halifax will permit, three of them will operate on the Bedford and Springhill Subdivisions, between Halifax and Moncton, 188.8 miles.

Some other long regular locomotive runs have come under our notice recently. One of these is on the Batiscan and Jonquiere Subdivisions of the Saguenay Division, Quebec District, Central Region, Canadian National Rys., where, for many years, one locomotive has hauled a passenger train from Quebec to Chicoutimi, 227 miles, on one day, and back the next. The locomotives now in this service are 1300 class 10-wheel, of 30% capacity (30,000 lb. tractive power), built by Montreal Locomotive Works. One of them hauls train no. 21, which operates daily except Sunday, leaving Quebec at 9 a.m., arriving at Lake Edward, 111.9 miles from Quebec, at 1.55 p.m., leaving there at 2.10 p.m., and arriving at Chicoutimi, 227 miles from Quebec, at 7.30 p.m. The next day it takes back train no. 22, leaving Chicoutimi at 7.30 a.m., arriving at Lake Edward at 12.45 p.m., leaving there at 1 p.m. and arriving at Quebec at 6 p.m. A similar locomotive handles train 22 on the day on which the first locomotive handles 21, and takes 21 back to Chicoutimi on the following day.

On the Algoma Central & Hudson Bay Ry., train no. 1, a mixed, with make-up averaging 3 passenger and 5 freight cars, leaving Sault Ste. Marie at 9 a.m. daily except Sunday, is hauled by the same locomotive to Franz, 194.5 miles, arriving there at 7.45 p.m. The same locomotive

takes back train no. 2, operating daily except Monday, on the following day, this train leaving Franz at 10.15 a.m. and arriving at Sault Ste. Marie at 8.15 p.m. Ten-wheel locomotives of 24,400 lb. tractive power are used, and coal is taken both ways at Frater, 102 miles from Sault Ste. Marie. Each run is made by the one crew; the crew which takes no 1 from Sault Ste. Marie to Franz returning with no 2 the following day. We are advised that the schedule is pretty closely adhered to, that no particular difficulty is experienced in doing this in winter, and that A.C. and H.B. Ry. officials believe that this is the longest mixed train run made by any railway on the continent, certainly in Canada, and that it is made in as satisfactory a manner as possible considering the type of railway covered, the grades being heavy and curvature high. Trains 1 and 2 are given 75% of the A rating handled by regular freight trains over the Sault Ste. Marie-Franz section.

The United States Railways' Financial Results.

U.S. railways did not secure quite so good returns in June as in May, although they were considerably better than in June, 1922. Net railway operating income for the class 1 roads for June, 1923, was \$87,741,876, compared with \$76,270,663 in June, 1922, equivalent to an annual rate of return on tentative valuation of 5.47 per cent in June, 1923, and 4.86 per cent in June, 1922. In May, 1923, the roads earned at the annual rate of 6.3 per cent.

Roads in the eastern part of the U.S. have been enjoying more prosperous times than those in other districts, but the northwestern roads results cannot be called other than unsatisfactory. In the eastern district, earnings for June were at the annual rate of 6.39 per cent, in the southern district at the rate of 5.78 per cent, and in the western district at the rate of 4.20 per cent. For the first 6 months of 1923, eastern roads earned at the annual rate of 6.59 per cent, southern roads at 6.64 per cent, and western roads at 4.20 per cent, the same as in June. Some of the northwestern roads, such as the Northern Pacific, Great Northern, Chicago, Milwaukee & St. Paul, etc., due principally to Panama canal competition, inadequate rates and high operating expenses, have had very restricted earnings in 1923 to date, and these results have been reflected in severe depreciation in their securities on the New York market.

For the class 1 roads as a whole, operating revenues for June, \$541,162,978, were 14.6 per cent more than for June, 1922, and operating expenses, \$416,907,785, were 11.7 per cent more. Net earnings were 15 per cent more. For the first 6 months of 1923, net operating income for the roads as a whole, \$443,912,892, was 27.2 per cent more than in the first 6 months of 1922. The equivalent annual rate of return on tentative valuation for the first 6 months of 1923 was 5.64 per cent and for the first 6 months of 1922 it was 4.53 per cent.

The London & North Eastern Ry. of England, which has established an office in Australia recently, will, it is reported, probably also open an office in Canada. Austin Wilson, the company's Superintendent of Dock and Overseas Trade, of London, passed through Canada in August, en route to Australia.

Telegraph and Cable Matters.

Canadian National Telegraphs, Hamilton, Ont., employees held their annual picnic at Wabasso Park, Burlington Bay, recently.

The Maritime Telegraph and Telephone Co. is arranging to lay a cable across the harbor from the foot of Pitt St., Sydney, N.S., to the opposite shore north of Shingle Point.

Canadian National Telegraphs have opened offices at Boischatel, Griffin Cove and Marsouins, Que., and have closed offices at Rougemont and St. Gregoire, Que. The name of the office at Deer Lake, Ont., has been changed to Ardbeg.

The board of conciliation appointed to deal with matters between Canadian National Rys. and its telegraph and other employees, regarding wages, etc., has reported to the Labor Department. It is stated that the report is unanimous and embodies an agreement reached between the management and the employees, for increases, aggregating approximately \$125,000.

Canadian National Telegraphs have completed the erection of two no. 8 copper wires from Montreal to Toronto; 2 wires Toronto to Kitchener, Ont.; 2 wires, St. Thomas to Windsor, Ont.; and 1 wire, Toronto to Ottawa, Ont., no. 9 copper. Work will be commenced shortly on the erection of a wire from Toronto to Winnipeg; 2 wires, Toronto to Niagara Falls; 1 wire, Toronto to Hamilton, Ont., and 2 wires, Montreal to St. Hyacinthe, Que., all copper. The company's lines comprise 125,000 miles of wire and 25,000 miles of poles, and it is claimed to be the largest telegraph system in Canada, and in conjunction with the Western Union Telegraph Co.'s facilities, the largest telegraph and cable system in the world.

The Dominion Telegraph Co.'s report for the year ended June 30, 1923, shows a balance at credit of profit and loss of \$285,286.53. The assets are \$1,301,169.66. The company's plant is under lease to the Western Union Telegraph Co., and the guaranteed dividends have been paid quarterly in advance by that company since June, 1879. The directors are: President, Sir Henry Pellatt; Vice President, Aemilius Jarvis; Secretary-Treasurer, H. H. Macrea; directors, G. W. E. Atkins, J. C. Willever, E. Y. Gallagher, Sir John M. Gibson and F. Le M. Grassett, the last named replacing D. B. Hanna, who retired.

George D. Perry, whose resignation as Vice President and General Manager, Canadian National Telegraphs, Toronto, was announced in our last issue, was born at Whitby, Ont., Apr. 19, 1858. He commenced his business career in Nov., 1877, as clerk in the Standard Bank at Colborne, Ont., and left there July, 1879. From Feb., 1880, to Feb., 1881, he was cashier, Credit Valley Ry., Toronto; Feb. to Sept., 1881, bookkeeper, Dominion Telegraph Co., Toronto; Sept., 1881, to Dec., 1891, chief clerk and Travelling Auditor, Great North Western Telegraph Co., Toronto; Dec., 1891, to Sept., 1902, Secretary and Auditor, same company, Toronto; Oct., 1902, to March, 1911, Secretary-Treasurer and Superintendent of Supplies, same company, Toronto; March, 1911, to Dec., 1920, General Manager, same company, Toronto; Jan. to Apr., 1921, General Manager, Canadian National Telegraphs, Toronto, and from April, 1921, to July 31, 1923, Vice President and General Manager, Canadian

National Telegraphs and also Vice President, Great North Western Telegraph Co., Toronto.

George Colvin Jones, who has been appointed General Manager, Telegraph



Geo. D. Perry,
Who has resigned as Vice President and General
Manager, Canadian National Telegraphs.



Geo. C. Jones,
General Manager, Telegraph and Telephone
Department, Canadian National Rys., includ-
ing Canadian National Telegraphs.

and Telephone Department, Canadian National Rys., including Canadian National Telegraphs, Toronto, was born at Clyde, N.Y., Sept. 24, 1860, and entered

railway service in June, 1874, since when he has been, to 1878, messenger, yard clerk and operator, consecutively, Erie Rd.; 1878 to 1887, dispatcher, Cleveland, Cincinnati, Chicago & St. Louis Ry., Erie Rd., and Chicago, Burlington & Quincy Rd., respectively, except for a short service with the Western Union Telegraph Co.; 1887 to 1896, dispatcher, chief dispatcher, and district operator, Wabash Rd.; July, 1896, to Mar., 1898, Superintendent, G.T.R., London, Ont.; Mar., 1898, to May, 1899, Superintendent G.T.R. and Wabash Rd., St. Thomas, Ont.; May, 1899, to Dec. 31, 1904, Superintendent, Middle Division, G.T.R., Toronto; Jan. 1, 1905, to Sept. 1, 1917, General Manager, and Vice President and General Manager consecutively, Central Vermont Ry., St. Albans, Vt.; Sept. 1, 1917, to Oct. 31, 1922, Assistant to President, G.T.R., Toronto; Oct. 31, 1922, to Feb. 28, 1923, attached to Vice President and General Manager's office, G.T.R., Montreal. Feb. 28 to Aug. 1, 1923, Assistant General Manager, Central Region, Canadian National Rys., Montreal.

Among the Express Companies.

The Canadian National Rys. Express Department has opened offices at Casey, Que., and Cavalier, Sask., (star point); and has appointed agents at Boucherville, Que., and Crerar, Ont.

The Board of Railway Commissioners passed order 33,961 Aug. 1, granting the Express Traffic Association of Canada's application for approval of Supplement E to Express Classification for Canada, no. 5.

The Canadian National Rys. Express Department has opened offices at Bear River, P.E.I., and Fort Frances, B.C. Rosedale, Ont., is eliminated from the list of offices, as there is now no such station on the C.N.R.

The Canadian National Rys. Express Department and the Dominion Ex. Co. have, as mentioned in Canadian Railway and Marine World for August, issued through their Foreign Department, new tariffs, applying eastbound and westbound, between Great Britain and Canada, reducing the ocean charge by approximately 20 per cent., with the object of helping preferential trade between the two countries. The service arranged over all Canadian passenger steamships, calls for what is known as top stowage on the steamships, in order to permit of first discharging from ship on arrival, and traffic is then dispatched from the port by fast express trains, connecting directly with the ships. This service gives delivery of goods from ports in Great Britain to eastern Canadian centers, of from 9 to 11 days, and a proportionately longer time for western Canadian points. To encourage express shipments, "to order" bills of lading are issued, so that an importer can pay his invoice through his local bank, and avoid the expense of large credit abroad. This rapid service, reasonable rates, and order bills of lading should aid the importer so that he may be able to buy in small lots, under the existing commercial condition, and have a continuous flow of goods to meet his requirements. Both companies' foreign departments are administered by men who have had very broad world trade experience and who will gladly offer their services to Canadian exporters and importers.

Electric Railway Department

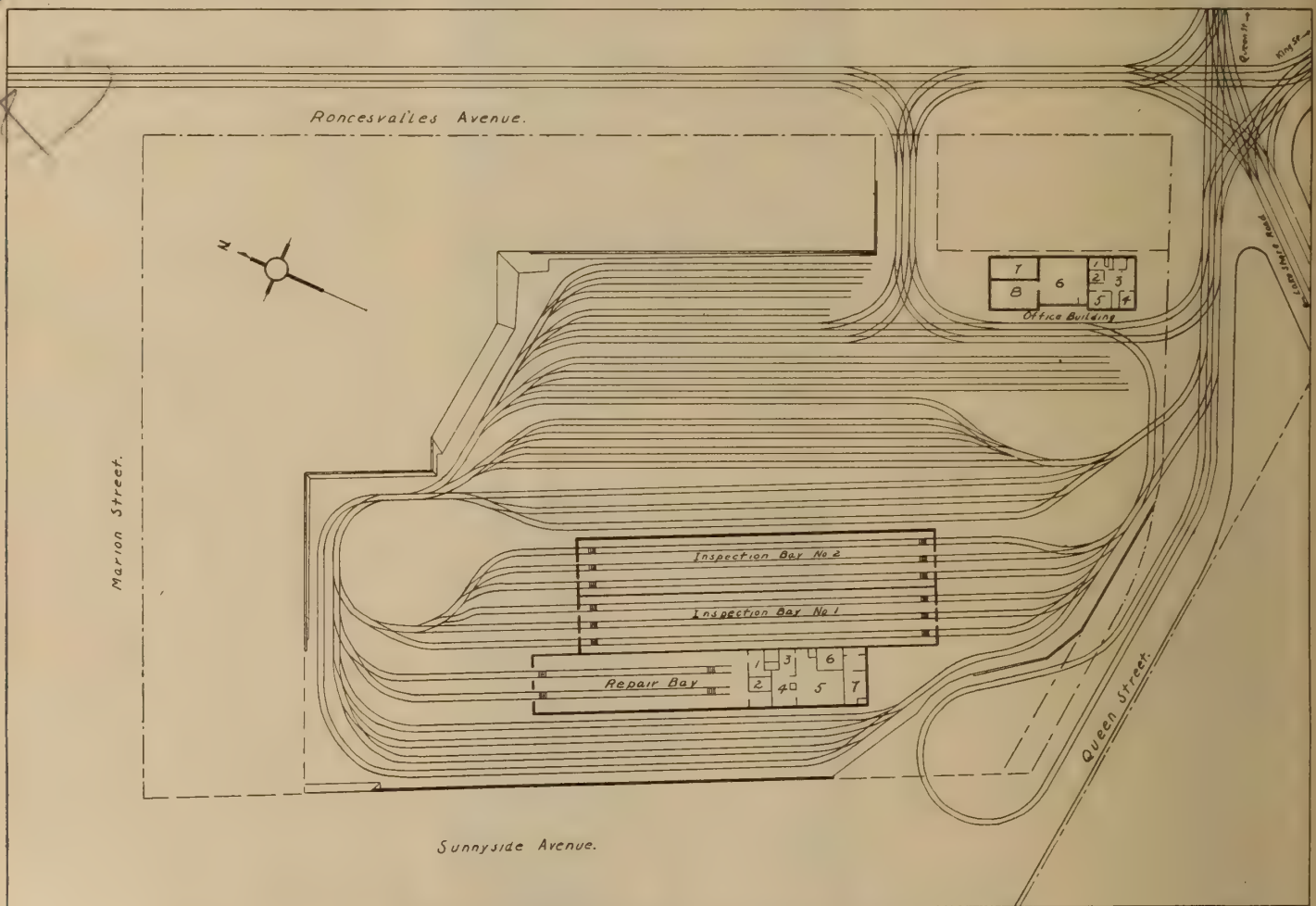
Roncesvalles Car House, Toronto Transportation Commission.

A further forward step by the Toronto Transportation Commission in making Toronto's street railway system thoroughly modern and adequate is the construction of a large car house on the property bounded by Queen St., Roncesvalles Ave., Marion St. and Sunnyside Ave., preliminary particulars of which were given in previous issues of Canadian Railway and Marine World. The Toronto Railway Co. had a car house on a portion of this property, but with the growth of the city and the introduction by the Commission of much larger roll-

from Roncesvalles Ave., the yard being to the north of it, and the plans for the new house and trackage called for the complete removal of the old house. Accordingly a contract for its demolition was let to W. H. Bagshaw, Toronto, who completed it on July 7. In order to accommodate the new trackage, additional lands were necessary, and these consisting of a parcel at the southwest corner of the property, fronting on Queen St. and Sunnyside Ave., and two parcels north of the old yard, but not extending to Marion St., were secured

the storage tracks north and west of the office building, will show how trailers may be attached with minimum delay, the trailers being pushed up to the waiting motor cars by a small electric yard locomotive.

The total track in the work will be 3.373 miles, this including track in the yard, in the repair and inspection bays of the house, and special work. Approximately 95% of the special work layouts will conform to the Commission's standards. The special work in the yard will be 114 and 108 lb. girder rail, Lorain



Roncesvalles Avenue Car House, Toronto Transportation Commission.

ing stock than used formerly, the old car house proved entirely inadequate to meet the new conditions. The old house, of brick construction, accommodated only 34 of the old type cars, and the yard trackage was also of limited capacity, and the new cars, full particulars of which have been given in these columns as they were ordered or received, are too large for the old clearances. On account of these clearance limitations, and the necessity for greater car storage and terminal accommodation, the Commission was able to demonstrate to the city authorities the necessity for a new house, and the passing of a bylaw providing \$800,000 for its construction and for the expropriation of necessary lands, followed.

The original car house was operated

by expropriation proceedings.

The accompanying plan shows the layout of the new house, office building and yard. The main entrance to the house and yard will be from Queen St., with an auxiliary entrance from Roncesvalles Ave., and the track layout, like that at the Eglinton house, built by the Commission last year at Yonge St. and Eglinton Ave., will provide the greatest facility possible in operation, not only for getting cars on to and off the storage, inspection, and repair tracks, but also in getting trailers attached to cars which have been operating without them, but to which it is desired to attach them. An inspection of the arrangement of the loops round the office building and the leads to the main lines on Queen St. and Roncesvalles Ave. with their relation to

sec. 398; special work at the main line connections will be 122 and 140 lb. girder guard rail of A.E.R.E.A. section; track in the car house will be 93 lb. T rail, Lorain sec. 507; in the storage tracks 85 lb. C.P. R. section rail will be used, and in the trailer storage and other yard tracks 60 lb. A.S.C.E. section rail. The yard tracks will hold 138 large cars.

The car house building, so far as construction materials are concerned, will be similar to the Eglinton car house, which was described fully in Canadian Railway and Marine World for Nov. 1922, pg. 574, with the exception that the branch ducts for heat transmission will be of concrete, instead of tile. It will be 285 ft. long, and each of the 3 bays will be 44½ ft. wide. Two of the bays, as shown in the plan, will be for inspection

purposes, and will have 3 tracks each, with a continuous pit under all 3 tracks and steps leading to the pits at each end of both bays. The repair bay will be served by 2 tracks, also equipped with a continuous pit. The repair tracks will not extend the full length of the repair bay, but the south end of that part of the building will be arranged for the provision of various facilities, located in accordance with the numbering shown as follows: 1, wheel and axle storage; 2, small stores; 3, valve room; 4, coal storage; 5, boiler room; 6, lavatory; 7, lunch room. The car house building will be of fireproof construction, with steel frame and brick and tile walls, and will be equipped with a sprinkler system throughout. The track pits will be of reinforced construction, with drainage facilities, and the repair bay will be equipped with hoists, jib cranes, wheel grinders and other miscellaneous tools and machines for running repairs. Heating in the main building will be provided by two large motor driven fans, with underground ducts to convey the heated air, which will be brought from the boiler room through a central tunnel running below the level of the pit floors, and distributed through concrete branch ducts to openings in the pit floors. Longitudinal skylights in the roof, running the full length of the bays, will supplement the window area in providing adequate natural lighting, and stationary and portable electric lighting units will be installed. Ventilation will be secured in the repair shop portion by the inclusion of standard ventilators in the skylight ridge. The doors at each end of the inspection bays, and at the north end of the repair bay, will be of the vertical roller type, operated by motor, with the control switch at convenient height above the floor level.

The office building will be 118 x 42 ft., and will have steel frame, brick and tile walls, and slate roof. Its divisions, as shown by the numbering on the plan, will be as follows: 1 and 2, clerks' and cashiers' cages; 3, main office; 4, car starter's office; 5, superintendent's office; 6, platform men's room; 7, platform men's lavatory; 8, platform men's recreation room. The building will have artificial stone trim, and there will be a basement under the office portion. The office portion will have hardwood floors, and in the platform men's room, lavatory and recreation room there will be mastic flooring. The walls will be finished in plaster. The building will be heated by steam, the boiler room being located in the basement under the office portion of the building, where there will also be a storeroom.

A feature of the layout will be the fire protection system. In addition to standard hydrants throughout the yard, there will be located, in strategic positions, large steel monitor towers, on each of which will be mounted a nozzle, arranged on a ball joint in such a way that a stream of water may be directed in any desired direction. This arrangement, together with the equipment of the main building with a sprinkler system, and assurance of an adequate water supply at all times from large connections to the city mains on both Roncesvalles Ave. and Queen St., should provide the greatest protection possible against fire damage.

In preparing the property for beginning construction, considerable grading was necessary. Generally, the land was high toward the northeast and low to-

ward the southwest; this required a cut of 8 ft deep in the northeast corner and a fill of the same depth in the southwest corner, cut and fill about balancing. The grading was done by the Commission's own forces. The provision of concrete retaining walls around a large portion of the property was found necessary, and a contract for their construction was given to Power & McAllister, Toronto, the work to be completed before the end of July. The total area to be occupied by the new facilities will be 5.87 acres. In the complete property held by the Commission after the acquisition of the additional lands expropriated, there is somewhat more than 7 acres, but it is the intention to sell the land fronting on Roncesvalles Ave. north and south of the Roncesvalles entrance, and as this frontage is suitable for business purposes, it is expected that its sale will materially

Canadian Electric Railway Association.

Honorary President: Major General Sir John M. Gibson, K.C.M.G., M.A., LL.B., LL.D., K.C., director, Dominion Power & Transmission Co.

Honorary Vice President: Acton Burrows, Proprietor, Canadian Railway and Marine World.

Honorary Advisory Council: Thos. Ahearn, President, Ottawa Electric Ry.; F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario; Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.; Geo. Kidd, President, British Columbia Electric Ry.

President: H. H. Couzens, General Manager, Toronto Transportation Commission.

Vice President: D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.

Treasurer: E. P. Coleman, General Manager, Dominion Power & Transmission Co.

Executive Committee: The President, the Vice President, the immediate Past President (Major F. D. Burpee, Manager and director, Ottawa Electric Ry.), the Treasurer, and G. Gordon Gale, Vice President and General Manager, Hull Electric Co.; W. S. Hart, Treasurer, Quebec Railway, Light, Heat & Power Co., and Vice President, Three Rivers Traction Co.; D. W. Houston, Superintendent, Regina Municipal Ry.; C. B. King, Manager, London Street Ry.; M. W. Kirkwood, General Manager, Grand River Ry. and Lake Erie & Northern Ry.; H. K. McLean, Superintendent of Transportation, New Brunswick Power Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; W. R. Robertson, General Superintendent of Railways, Hydro Electric Power Commission of Ontario; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Superintendent, Hydro Electric Ry., Toronto & York District.

Auditor: Lt. Col. G. C. Royce.

Secretary: Eustace Smith, Jr., Executive Assistant, Toronto Transportation Commission, 35 Yonge St., Toronto.

Official Organ: Canadian Railway and Marine World, Toronto.

reduce the expenditure for land acquisition.

The general contract for the construction of the car house and office building was given to Sullivan & Fried, and sub contracts were awarded as follows: plumbing and heating, and sprinkler system for car house, Mechanical Trades, Ltd.; structural steel, McGregor & McIntyre; electric wiring, Richardson & Cross; miscellaneous iron work, Dennis Wire & Iron Works; painting and glazing, F. G. Roberts. All the track work will be done by the Commission's own forces. It is expected that the new facilities will be ready for operation late in the autumn. The house and yard will be used by cars on the King, Queen, Roncesvalles Ave. and Lake Shore Road runs.

The intersection shown in the plan,

at the junction of Roncesvalles Ave., Queen St., King St. and the Lake Shore Road, which is claimed to be the largest piece of street railway special work on this continent, was described fully in Canadian Railway and Marine World for June, pg. 288.

British Columbia Electric Railway's Victoria-Saanich Line.

The British Columbia Electric Ry. Co. has an interurban line on Vancouver Island from Victoria city limits through the Saanich Peninsula, to Deep Bay, 24.29 miles. It has not paid its way from its opening in 1913, and it was reported recently that the company contemplated ceasing operating it. Residents adjacent to the line, feeling that this would injuriously affect the peninsula's business, interested Saanich Municipal Council, Victoria City Council and Victoria Chamber of Commerce, and representatives of these bodies met A. T. Goward, Vice President, B. C. E. R. Co., and other Vancouver Island officials, recently, to discuss the situation. Mr. Goward is reported to have stated that the company must cease operating unless the heavy loss could be eliminated. The company's investment in the line is approximately \$1,000,000, of which, if the line were taken up and the property disposed of, about \$250,000 would be salvaged. With this money invested and the operating loss eliminated the company would save something like \$36,000 a year. The discussion showed that buses and sight-seeing cars are taking most of the business, and it was pointed out that it is of no use for municipalities to attempt to regulate those services, if they could be run in unorganized districts without regulation. It was also stated that the extension of the Canadian National Rys. line to Patricia Bay, which had been urged by the people of the district for its freight possibilities, had also affected the electric line's business. A suggestion was made that the line be scrapped between Tripp and Deep Bay, and diverted into Sidney, about two miles. Other suggestions favored the curtailment of the service and the operation of combined freight and passenger cars. Nothing definite resulted, but the representatives of the several bodies present undertook to have the matter thoroughly discussed by their members, with a view to some definite proposal being made.

Niagara, St. Catharines and Toronto Ry. Franchises.—Particulars of the propositions made by the Canadian National Rys. management to the municipalities served by the Niagara, St. Catharines & Toronto Ry., viz., Port Dalhousie, St. Catharines, Merritton, Thorold and Niagara Falls, in regard to improved service, and as to the franchise rights desired, were given in Canadian Railway and Marine World for July, pg. 352. The management's plans for improving the service were also given, and it was explained that some of the improvements would not be made unless the desired franchise agreements were obtained, while others would be gone ahead with in any event. We are advised that at time of writing (Aug. 7) new franchises have not been arranged with any of the municipalities, that none of the work contingent upon new franchises has been commenced, but that work has been started on an extension to the car shops on Welland Ave., St. Catharines.

Block Signal Installation, Hydro Electric Railways, Toronto & York District, Metropolitan Division.

The portion of the Hydro Electric Railways, Toronto & York District, Metropolitan Division, from the southern terminus at the Toronto city limits to Morgan's siding, mile 4.78, is being equipped with a block signal system. There will be 5 blocks, as shown in the accompanying plan. In addition, signals, with manually operated levers to change the indications of the signals at either end of the block, will be located in 1, 3 and 5.

The signals to be used, Nachod type CD, will indicate to the motorman if the block is clear, let him know when he has set the stop signal at the other end of a block to prevent an opposing car from entering it at the other end, and give each motorman an indication that he is protected in entering, in the meanwhile holding stop signals against opposing cars. The system is a permissive one, in which several cars may follow through the same block, as desired, such permissive operation being generally required in modern electric railway practice, except on very short blocks.

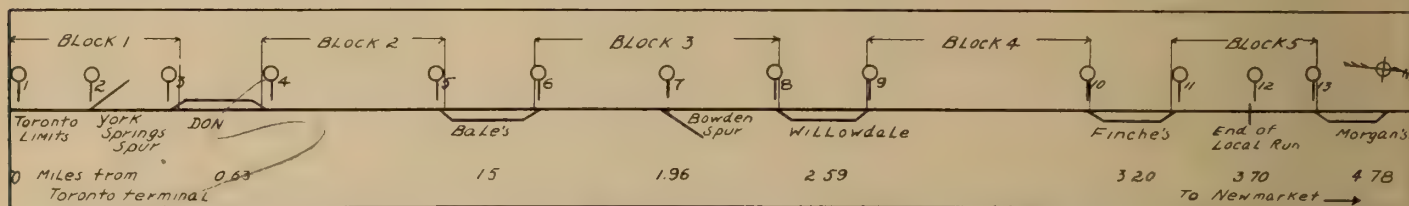
On a typical siding-to-siding block, the signal is located along the single track near the switch point, with a setting contactor one or two spans back of the signal. This permits the motorman, before

that point, and will operate as follows: if the block is unoccupied, a southbound car, on passing the contactor at signal 3, will set signals 1 and 2 at stop. If the car leaves the main line at the spur at signal 2, all signals will clear in the same manner as if the car had left the block at the south end. If the car is to re-enter the block from the spur, the manually operated lever, close to signal 2, will put either signal 1 or 3 at stop, as desired, and prevent cars from entering the block. If the car is to continue south, signal 1 will be put in stop position; if the car is to return north, signal 3 will be put in stop position. When the car has left the block, the signals assume the neutral position in the same way that they would if the manual indications had not been given. If, while the car occupied the spur, signal 2 went to stop position, it would indicate that the block had been occupied by another car, and the main line could not be again entered until the signal had been cleared. The intermediate signals at Bowden, to provide for switching movements on the spur and tracks connected thereto, and at mileage 3.7, to provide for reversing movements of local cars, will operate on the same principle. The signal system is so designed that up to 15 cars may

extracted by bent wire hooks tipped with rubber cement, and were then disposed of through various agencies.

Samuel Thompson and George Wood, conductors, were charged with stealing tickets and were arrested, and James Esson, motorman, was arrested charged with receiving tickets knowing them to have been stolen. The three were taken before R. M. Noble, a city magistrate, on Aug. 10, and pleaded guilty, and on the following day were each sentenced to 10 days imprisonment. The sentences were, in Canadian Railway and Marine World's opinion, entirely inadequate. Whatever other considerations might have weighed with the magistrate in thinking 10 days imprisonment sufficient punishment for a systematized robbery, extending over a lengthened period, the only ones he mentioned were their loss of position and disgrace. While there is a good deal to be said in favor of considering these two factors as being of themselves adequate punishment for infractions of the moral laws, it requires something more than sentimental punishment to impress law breakers with the enormity of their offence, and the sentences of ten days imprisonment were altogether out of proportion to the gravity of the crime.

The company's platform men are reported to have met on Aug. 10 and passed a resolution endorsing the prosecution, and generally disclaiming knowledge of the thefts.



Block Signal Layout, Hydro Electric Railways, Toronto & York District, Metropolitan Division.

passing the signal, to observe the change of signal indication caused by the passage of his car under the contactor. Another trolley contactor is placed on the siding, enabling the block to be taken before the car passes the switch point. Some installations have been made with only one trolley contactor, located outside the switch point, so that switching may be done at the end of the siding without touching the contactor, but the two contactor system will be used on the Metropolitan Division. Each block is independent of all others.

The signal aspect consists of lights and colored discs combined, for night and day indications. No light or disc, played, or neutral indication, displayed when no car is in the block, indicates that a car may enter the block if its orders will permit; a white light and disc, or permissive indication, means a car is in the block and entered from the same direction, and gives right to the following car to enter under control. A red light and disc, or stop indication, means that the block is occupied by a car in the opposite direction, and conveys an order to stop and wait behind the entering contactor until the signal returns to neutral. When a car enters a block, the signal at the entrance shows white, and the one at the other end shows red.

As stated above, extra signals will be located in blocks 1, 3 and 5 for special purposes. The signal at York Springs spur, in block 1, for example, will be used to protect switching movements at

occupy one block at the same time, making following movements.

The Hydro Electric Rys. have a similar installation on the Essex District, on Sandwich St. in Windsor, Ont., on 1½ miles of track on which cars from three divisions operate, on 6 min., 22½ min., and 45 min. schedules. We are officially advised that that installation has rendered possible the postponement of double tracking.

In equipping the first 4.78 miles of the Metropolitan Division, the block between the Don siding and Bale's siding, mileage 0.63 to 1.5, was first completed, the others being equipped as material was delivered. We are officially advised that it is the intention to extend the signal system until the southern portion of the division will be equipped to Newmarket, 22.71 miles from Toronto.

Ticket Thefts by Winnipeg Electric Railway Employees.

Winnipeg Electric Ry's management, some little time ago, began investigating an extensive system of ticket stealing which is estimated to have amounted to about \$25,000 during the past two years. The methods used by the conductors implicated were to allow the tickets dropped into fare boxes to accumulate on the platform of the box, instead of springing it and letting the tickets fall into the locked compartment. At the end of the run, and when there were no passengers on the car, the accumulated tickets were

Toronto-Weston Railway Service.

Canadian Railway and Marine World for August, pg. 406, gave full details of the proposition made the town of Weston by the Canadian National Rys. management, as stated in a letter from S. J. Hungerford, Vice President, Operation and Construction, to Mayor Flynn, concerning improvement of the transportation service on the Toronto Suburban Ry. between Toronto and Weston. It was pointed out that the improvements were contingent upon the City of Toronto failing to take over from the Canadian National Railways the portion of the Toronto Suburban Ry. from the north city limits to Woodbridge. The city has been approached by the railway's management on this subject, but no indication has been given as to the city's intention as to this portion of the line, the feeling however appears to be that the city will not acquire anything beyond the portions of the line within its limits.

Part of the proposed work in the event of the city failing to take over the line to Woodbridge is the moving of the Toronto Suburban Ry. track on Weston Road, which is known as Main Street through Weston, from the west side of the road to the center, within the town limits. At the time of writing (Aug. 17) nothing had been done in this connection. The railways management's proposition also contemplated trial of a battery car service between Parkdale or the old Union Station in Toronto, but to the time of writing no arrangements have been made.

Electric Railways Proposed for York Township, Ont.

At the request of York Township, which adjoins the City of Toronto on the north and northeast, the Toronto Transportation Commission had an investigation made recently, and has submitted a report on five lines, the estimated cost of which would be \$2,173,265. Following are extracts from the report:

Route 1, St. Clair.—From St. Clair and Oakwood Aves. via Oakwood Ave., Vaughan Road and Eglinton Ave., to Canadian National Rys. Newmarket line. Length, 2½ miles; population served, 9,500; estimated revenue rides per annum, 2,920,000; estimated car miles per annum run, 292,365; fare necessary to cover cost of operation, 3c. Cost of track, foundation, special track work and overhead construction, \$358,750; cost of street widenings, replacing permanent pavements and walks, and paving track allowance, \$314,100; total capital cost, \$672,850; annual fixed charges, \$49,118.05. Of the above capital cost \$29,768 is for construction within the City of Toronto. Local improvement frontage, rate suggested—From car line to 700 ft. at 20c. a foot frontage; from 700 to 1,500 ft. at 15c. a foot frontage; from 1,500 to 2,640 ft. at 10c. a foot frontage; from 2,640 to 3,300 ft. at 5c. a foot frontage; 3,300 ft. is the limit of assessment.

Route 2, Oakwood.—From Rogers and Oakwood Ave., west on Rogers Road and private right-of-way to reserve through Prospect Cemetery; thence by new street to be opened to a subway under Canadian National Rys. at Hillary Ave.; thence westerly by Hillary Ave. and Weston Road to Northland Ave. Length 2.23 miles; population in township served, 8,500; estimated revenue rides per annum, 3,102,500; estimated car miles per annum run, 328,500; fare necessary to cover cost of operation, 3.17c. Cost of track, foundations, special trackwork and overhead construction, \$360,972. Cost of street openings, subways and bridges, replacing permanent pavements and walks and paving track allowance, \$401,309. Total capital cost, \$762,281. Annual fixed charges, \$55,646.44. Local improvement frontage, rate suggested—From car line to 700 ft. at 20c. a foot frontage; from 700 to 1,500 ft. at 15c. a foot frontage; from 1,500 to 2,640 ft. at 10c. a foot frontage; from 2,640 to 3,300 ft. at 5c. a foot frontage. 3,300 ft. is the limit of assessment.

Route 3, Pape Ave.—Pape Ave. from Danforth to Don Mills Road—Length, 1.1 miles; population served, 4,800; estimated revenue rides per annum, 1,277,500; estimated car miles per annum run, 114,975; fare necessary to cover cost of operation, 2.70c. Cost of track, foundations, special track work and overhead construction, \$179,500; cost of replacing permanent pavements and walks and paving track allowance, \$98,800; total capital cost, \$278,300. Annual fixed charges, \$20,315.90. Of the above capital cost \$101,840 is for construction within the City of Toronto. Local improvement frontage, rate suggested—From car line to 700 ft., at 20c. a foot frontage; from 700 to 1,500 ft. at 15c. a foot frontage; from 1,500 to 2,640 ft. at 10c. a foot frontage; from 2,640 to 3,300 ft. at 5c. a foot frontage; 3,300 ft. is the limit of assessment.

Route 4, Coxwell.—From Danforth and Coxwell Aves., via Coxwell Ave., Mc-

Michael and Lumsden Aves. to Main St. Length, 1.67 miles; population served, 6,000; estimated revenue rides per annum, 1,825,000; estimated car miles per annum run, 186,150; fare necessary to cover cost of operation 3.06c. Cost of track, foundations, special track work and overhead construction, \$273,167; cost of improving street alignment, replacing permanent curbs and walks, and paving track allowance, \$146,667; total capital cost, \$419,834; annual fixed charges, \$30,647.88. Of the above capital cost \$76,840 is for construction within the City of Toronto. Local improvement frontage, rate suggested—From car line to 700 ft. at 20c. a foot frontage; from 700 to 1,500 ft. at 15c. a foot frontage; from 1,500 to 2,640 ft. at 10c. a foot frontage; from 2,640 to 3,300 ft. at 5c. a foot frontage; 3,300 ft. is the limit of assessment.

Route 5, Runnymede.—Dundas St. from Runnymede Road to top of hill at Humber. Length 1.0 mile; population in township served, 3,500; estimated revenue rides per annum, 1,275,000; estimated car miles per annum run, 100,375; fare necessary to cover cost of operation, 2.37c. Cost of purchase and rehabilitation of existing single track line, \$40,000; annual fixed charges based on 10 year life of single track, \$6,000. If in this case the fixed charges were carried in operating charges, the fare necessary to be charged would be increased to 2.84c. Local improvement frontage, rate suggested—From car line to 700 ft. at 20c. a foot frontage; from 700 to 1,500 ft. at 15c. a foot frontage; from 1,500 to 2,640 ft. at 10c. a foot frontage; from 2,640 to 3,300 ft. at 5c. a foot frontage; 3,300 ft. is the limit of assessment.

It is expected that the construction of one or all of the lines suggested will be voted on at the municipal elections in the township in January.

Ottawa Electric Railway Substitutes Advertising for Publishing.

For some years the Ottawa Electric Ry. Co. issued a weekly sheet, the Ottawa Electric News, giving information relating to the company's business, safety hints, information as to the company's views on wages, franchise, and other matters concerning its business in which the public might be interested. The sheet of course had a somewhat limited circulation, and being distributed from the company's office and through its conductors and motormen, on the cars, it was probably not as carefully or widely read as it might otherwise have been. The management therefore decided to stop issuing it, and beginning with Aug. 4, to publish in the two English newspapers and the one French newspaper published daily in the city, a column of news and other matters, every Saturday under the heading of "O. E. R. News." The management expects that in this way its matter will reach at least three times the number of readers its weekly news sheet did.

The New Brunswick Power Co. was reported recently to be having its plants in St. John inspected by J. D. Bowles, Chief Engineer, and W. S. Dole, gas expert of the Federal Light and Traction Co., New York, so as to recommend what is necessary to improve their efficiency.

Montreal Tramways Company's Results for 1922-1923.

The Montreal Tramways Commission's report on the Montreal Tramways Co's operations for the year ended June 30, has been issued. The following information is extracted from it:

Receipts and Expenditures		
	1922-23	1921-22
Passengers	\$11,752,441	\$11,446,383
All other sources.....	302,924	266,142
Gross receipts	\$12,056,365	\$11,712,525
Op. exp. and taxes.....	6,099,993	5,769,403
Maintenance	2,492,792	2,579,200
Op. profit	48,304	47,959
Int. on cap. value.....	2,344,681	2,329,457
Financing exp.	181,431	181,431
City's rental	500,000	500,000
Res. fund	41,597	171,125

Surplus\$ 347,553 \$ 187,947

The amount paid the city during the year was made up of \$229,629 taxes, \$190,800 for snow removal, and \$889,151 on rentals.

Statistics:	
Total length of tracks, miles	271.422
Length of tracks in operation, miles.....	253.176
Gross receipts per mile of tracks in operation	\$47,620
Percentage of gross receipts devoted to operating expenses and taxes.....	51
Percentage of gross receipts devoted to maintenance and renewals.....	20.67
Percentage of gross receipts devoted to total operating expenses.....	71.67
Revenue passengers carried	193,519,038
Transfer passengers carried.....	79,123,158
Percentage of transfer passengers to number of revenue passengers.....	40.89
Average fare per passenger	6.23c.
Operating expenses per passenger.....	4.47c.
Car miles	22,918,701

Operating Expenses and Taxes.—The allowance for operating expenses was fixed at 25.91c. a car mile for motor cars and 18.73c. for trailers, at a density of 8.5. The allowance granted at this rate was \$5,866,155, compared with \$5,832,844 for 1921-22. The actual operating expenses and taxes were \$6,099,993, an excess of \$233,837, which the Commission authorized the company to appropriate from gross receipts as follows: On account of snow removal, \$93,316; on account of taxes, \$140,187, and on account of injuries and damages, \$41,460. The total operating expenses for the year showed an increase over those for 1921-22 when they were \$5,796,403.

The Operating Profit was allowed at ½ of 1 per cent., as in 1921-22, on the average capital of \$38,643,734, being \$48,304, compared with \$47,959 allowed on an average value of \$38,367,983 for 1921-22.

Maintenance and Renewal Fund.—The Commission fixed the allowance at 11.22c. a car mile for motor cars, and 9.853c. for trailer cars, which worked out at \$2,740,778 against \$2,579,200 for 1921-22. The actual expenditure for maintenance and renewal was \$2,618,874, leaving a reserve of \$121,903 to the credit of the account.

The additions to capital value of physical assets was \$481,065, and after deducting the value of property and materials discarded and scrapped, the net addition was \$15,901.

At the commissioners' annual meeting, when the report was considered, a difference of opinion arose as to the payment of the Dominion income tax. J. S. Archibald differed from Chairman J. F. Saint Cyr and the vice chairman, J. F. Herdt, contending that this tax should be paid by the Montreal Tramways Co. out of its percentage, and not made a charge on the gross receipts. The amount involved for 1922-23 is \$57,606.

Toronto Transportation Commission's Activities.

Track Work.—The Commission has the following major track work under way: Queen and Sherbourne Sts. intersection, installation of new special work and widening of about 100 ft. of devilstrip; on Harbord St. between Ossington Ave. and Spadina Ave., complete rehabilitation of track; on Front St., between Bathurst St. and Spadina Ave., complete rehabilitation of track; intersection of Front St. and Spadina Ave., installation of new special work.

Additional Buildings for Hillcrest Shops.—The Commission has marked tenders for the following subsidiary buildings to be erected on the property at Bathurst St. and Davenport Road, where shop and stores buildings are being built: 1. Office building. 2. Frog shop for way department. 3. Garage. 4. Building for storage of cement, charcoal, and salt, and for the drying and storage of sand. The shop and stores buildings were thoroughly described in Canadian Railway and Marine World for March, pg. 132. Progress on the shop and stores buildings is satisfactory, and it is expected that they will be in operation about Dec. 1.

Equipment for Repair Shops.—The Commission has ordered machine tools, etc., for repair shops under construction at Bathurst St. and Davenport Road, as follows: 1—36 in. x 14 ft. Bertram bed lathe; 1—24 in. MacDougall lathe; 1 Preston pattern lathe; 1—20 in. x 10 ft. MacDougall bed speed lathe; 1—18 in. x 10 ft. MacDougall bed speed lathe; 1—16 in. Springfield tool room lathe; 1 Herbert no. 9 21 in. turret lathe; 1 Long Co. 13 in. x 6 ft. bed speed lathe; 1 Lund 4-spindle drill; 1 no. 2 Detroit 5-spindle automatic drill; 1 Herbert 3-spindle automatic drill; 1 Canada Machinery Corporation 20 in. stroke shaper; 1 Brown-Bogg inclinable power press; 1 Brown and Sharp universal milling machine; 1 no. 5 Marvel power hack saw; 1 Stevens tool room grinder; 1 Grand Rapids wet twist drill grinder; 5 Ford Smith wet wheel grinders; 2 Ford Smith combination floor buffers and grinders; 1 Landis bolt cutter; 1 Brown and Sharp bench log; 1 Brown and Sharp surface plate; 1 Brown and Sharp dial test indicator; 12 sets of Peerless armature stands; 3 Columbia coil winding machines; 1 Brantford baking oven, 10 armature capacity; 1 Tuec stationary cleaner; 6 Jacobson gas heaters for soldering irons; 6 Ashton gas and air blow torches; 1 Bertram bulldozer; 2 Ireland gas furnaces; 1 Brown Bogg roll former; 1 42 in. Regent square shear; 1 Can. B. & F. Co. portable forge; 1 Ideal electric babbitt furnace; 1 Canada Machinery Corporation chain mortiser; 1 Rogers F. knife grinder; 1 Clark automatic rip and cross cut saw sharpener; 1 no. 2 Black Diamond band saw filer; 1 type 365K grindstone; 1 Shepard 5-ton electric monorail hoist; 1 Canadian Ingersoll-Rand 40 lb. safety chipping hammer; 1 Little David 60 lb. safety rivet hammer; 14 Lo-head 1½-ton electric hoists; 1 Shepard 1-ton electric hoist; 2 Black and Decker ¾ universal electric drills; 1 Black and Decker ¾ universal electric drill; 1 Black and Decker 1¼ universal electric drill; 6 Trance no. 4 lift trucks, 17 x 37 in.; 4 Trance no. 1 lift trucks, 24 in. x 5 ft.; 2 Elwell Parker electric elevating trucks; 5 National time recording clocks; 14 Beath jib cranes; 8 Beath car hoists; 1 Hendy 14 in. x 7 ft. engine lathe; 1

Warner-Swasey no. 2 turret screw machine with standard equipment; 1 American no. 4 high speed positive blower; 1 Hanchet no. 2 saw-swage; 1 Hanchet no. 3 saw swage. The foregoing machinery, etc., is being supplied by: W. D. Beath & Son; John Bertram & Son; Canadian Fairbanks-Morse Co.; Canadian Ingersoll-Rand Co.; Canada Clock Co.; Columbia Gramophone Co.; Garlock Machinery Co.; General Supply Co. of Canada; Alfred Herbert, Ltd.; Industrial Equipment Co.; Lyman Tube & Supply Co.; H. W. Petrie Machinery Co.; Railway and Power Engineering Corporation; Rudel-Belnap Co.; United Electric Co. of Canada; A. R. Williams Machinery Co.; Chas. S. Wright Co.. The machines, etc., are of the most modern character. The Commission is providing for equipment maintenance which will be marked by the same adequacy and efficiency that characterises the Commission's rolling stock and its operation. The new repair shops and the facilities to be installed in them will mark another forward step by the Commission in its effort to provide a thoroughly efficient transportation service, which can be rendered economically because of the efficiency made possible by the capital expenditures made, of which the amount spent for the repair shops and machine tools is an example.

Car Deliveries.—At Aug. 15 Canadian Car and Foundry Co. had delivered 53 motor cars out of an order for 60, and Ottawa Car Manufacturing Co. had delivered 36 out of an order for 50.

Car Conversion.—Details of the conversion of the majority of 350 p.a.y.e double truck cars taken over from the Toronto Railway Co. into front entrance cars of the pay-leave type were given in Canadian Railway and Marine World for August, pg. 402. At the time of writing (Aug. 15) some 11 of the cars have been changed, and the shops are now turning out about one daily. The p.a.y.e cars not so converted will be used for making 2-car trains, of the type of which some details were given in the August issue, page 402.

Service for Canadian National Exhibition.—Canadian Railway and Marine World for Oct., 1922, gave details of the loading platforms the Commission built at the eastern and western entrances to the Canadian National Exhibition grounds. By using these platforms fares were paid at gates leading into the platform enclosures, the loading of passengers into cars to leave the grounds was greatly facilitated, and much time was saved in getting the cars away. This year, as the Commission is using its front entrance motor cars, and center entrance trailers, to handle the exhibition crowds, the loading platforms have to be operated differently, and it is not possible to collect fares at the gates. The reason for this is that if the fares were collected at the gates, there would be passengers in the front portion of the motor cars and trailers who would have their fares paid, and as the scheme of operation calls for the use of the front portions by passengers who have not paid their fares, when the cars got out on the streets and more passengers were picked up, the conductors would have no means of telling whether they had paid or not. The gates are, therefore, being used this year only to regulate the flow of passengers to the loading platforms. To facilitate loading,

extra conductors are stationed at the side of outgoing cars, to collect fares from passengers who are directed into the "paid" portions of the motor cars and trailers through the doors ordinarily used as exit doors, while the passengers entering at the usual entrance doors pay their fare en route in the ordinary manner. By this means all doors are as entrance doors at the loading platforms.

Use of Track Allowance by Vehicles.—Interesting facts concerning the use of the track allowance by vehicles other than street cars were brought out by some recent traffic studies made by the Commission. Of four counts taken, two showed that 84 per cent. of all such vehicles used the track allowance, one showed 78 per cent., and the other 67 per cent. Another count, in another part of the city, showed that of the total vehicles passing a given point 87 per cent. were other vehicles and 13 per cent. street cars. The former carried 27 per cent. of the people and the latter 73 per cent. Another analysis of the same count showed that there were 45 per cent. more motor trucks than street cars. These figures are of value as showing the use made of the street car tracks by other vehicles, and the relative service given to the travelling public by street cars and by other vehicles. These counts were made in the summer; in the winter the proportion of other vehicles is much higher.

Baby Carriages on Cars.—When the Toronto Ry. Co. operated the street railway it had hooks on the back of its cars on which baby carriages could be hung. With the advent of the front entrance cars introduced by the Commission, the hooks were done away with. Recently, many complaints have been received concerning lack of facilities for women to transport baby carriages, it being stated that many conductors refused to allow folding go-carts in the cars. The Commission has ruled that go-carts of the folding variety may be taken on the cars, and the crews have been instructed accordingly, but hooks on the rear of cars will not be restored.

Signs on Bloor-Danforth Cars.—Consequent on the Commission's complete re-routing of cars, the cars operating east-bound on Bloor St. and Danforth Ave. were furnished with a route sign, at front of car, in center, reading "Bloor," and a destination sign, at the front, to the left, reading "Luttrell," because the cars turn at the east end of their run on a loop at Luttrell Ave. The Danforth Business Men's Association objected to this and requested that the route sign be changed to "Bloor-Danforth." The Commission stated this name was too long, but consented to change the destination sign on eastbound cars to "Danforth." Westbound, the cars carry the route sign "Bloor" and the destination sign "Lansdowne," on account of turning on a Y at Lansdowne Ave., at the west end of their run.

Roadside Signal at Car Stops.—During July there was brought to the management's attention a signal of the semaphore type, designed to be attached to posts at car stops, and to assume a horizontal position when there are passengers to board an approaching street car. The signal was originated by R. Rutledge, Toronto, and was advocated by him as a means of preventing passengers from leaving the sidewalk and going out

into the street to attract the attention of the motorman on approaching car, thus making themselves liable to be struck by automobiles, but there is no necessity for passengers leaving the curb to have street car motormen stop for them, and for that reason the management considered the signal unnecessary and declined to experiment with it, for the present at least.

Automatic Street Announcers.—During the past few months the Commission has conducted examinations, under the supervision of W. R. McRae, Superintendent of Rolling Stock and Shops, of about 30 devices designed to automatically indicate to passengers the name of the street at which the car will stop next. We are advised that none of those examined were of sufficient practical value to deserve a trial. There are some 150 patents in Canada of such a device and about ten times that number in the U.S., but nothing has been discovered which will satisfactorily fill the requirements.

Transportation for York Township.—Details were given in a preceding number of Canadian Railway and Marine World of the agreement entered into between the Commission and York Township council, by which the Commission's engineers were to make surveys and traffic studies, at the township's expense, to determine whether it would be advisable to extend any of the city electric railway lines into the township. These surveys and studies, made principally under direction of N. D. Wilson, Traffic Engineer, T.T.C., were completed about the end of July, and resulted in the Commission making recommendations for lines into York Township as follows: 1. On Oakwood Ave. from the city limits to Vaughan Road, along Vaughan Road to Eglinton Ave., and along Eglinton Ave. to the Canadian National Rys. tracks. Total cost, including street widening and the construction of about 100 ft. of track within the city, from St. Clair Ave. to the city limits, about \$675,000. Approximate length, 2½ miles. 2. On Rogers Road to Oakwood Ave., west on a private right of way through Prospect Cemetery, west on Hillary Ave. under Canadian National Rys. tracks to meet Weston Road at Northlands Ave. Approximate distance 2¼ miles and approximate cost \$760,000. 3. On Dundas St. west from the city limits to the top of the hill at Lambton Mills. The Toronto Suburban Ry. line would be acquired and rehabilitated, at an approximate cost of \$40,000. The Commission proposed that these three lines, all of which leave the city at its northwestern limits, and which would serve the western part of the township, should be built as local improvements and paid for by taxation spread over a period equivalent to the life of the lines and that they should be operated by the Commission at cost, this including car rental and a charge for car house and shop facilities. The township would have the ownership of no equipment. The township council, soon after the Commission submitted its proposition, declared unanimously in favor of it. The next step will be to put it to a vote of the people, and if the result is favorable validating legislation will be applied for. In view of the fact that the parts of the township affected are becoming densely populated, that transportation facilities are lacking, that the plan proposed would give the Commission control over transportation in the area

immediately adjoining the city, in the direction of its most rapid growth, and that it would impose no additional financial burden upon the Commission, it would seem that the Commission's plan should be suitable to all concerned.

Toronto Eastern Railway Construction.

Particulars of preparations being made by the Canadian National Rys. management to complete the Toronto Eastern Ry's construction as part of a general scheme to provide a radial railway service for the district east and west of Toronto, were given in previous issues of Canadian Railway and Marine World. The Toronto Eastern work will involve considerable relocation and reconstruction within the limits of Oshawa, Ont., and the railway management, in return for laying track of the most substantial character within the town, asked the town to assume the cost of paving on the track allowance, but the town council objected to this. Under agreement, made in 1910, the Toronto Eastern management undertook to pave between the rails whenever the town paved streets on which tracks were located, but the present management wants the town to pave the whole surface, the railway to provide the track substructure. At a meeting in Oshawa on Aug. 7, attended by E. W. Oliver, Manager, and S. B. Wass, Resident Engineer Toronto Eastern Ry., and members of the town council, the matter was discussed, and the mayor moved that the matter of paving costs be referred back to a meeting of the whole council, which was carried. Mr. Oliver is reported to have stated that work on the Toronto Eastern would be stopped at once and the construction forces on the work would be transferred to work on the electrification project around Toronto. An Oshawa press dispatch of Aug. 14 stated that ex-Mayor Stacy of Oshawa, was circulating a petition among the ratepayers, protesting against the stand taken by the council in regard to the paving matter and urging that the Toronto Eastern's offer be accepted. He is reported to have expressed strong dissatisfaction with the council's attitude, which was placing obstacles in the way of an undertaking that would be of great benefit to the town and would cost it nothing, and his activities evidently had good effect, for a press report of Aug. 17 stated that the town council had decided to accept the railway's offer, and added: "The agreement, which was submitted by Mr. Oliver recently, provides for the paving by the town of an 8 ft. strip on Bond St., where the tracks run. This clause was responsible for the delay in the acceptance of the agreement. As a compensation for the expense entailed, the railway will deed back to the town the right of way between Mary and Division St. As a result of the acceptance of the agreement, work on the rehabilitation of the line from Oshawa to Bowmanville will start immediately."

As explained in previous issues of Canadian Railway and Marine World, the Cobourg-Toronto radial line, in which the Toronto Eastern Ry. will be a link, is to be linked up at Toronto with the Toronto Suburban Ry. running from Guelph to Toronto. Particulars of the railway management's application for approval of a plan for a diversion of the Toronto Suburban Ry., to enable it

to be connected with the line to the east, are given elsewhere in this issue.

We are officially advised that the Toronto Eastern Ry. will be equipped with catenary type construction for current distribution, the overhead work to be of substantial design and suitable for high speeds. The 1500 volt d.c. system will be used. The weight of rails to be used will vary, in the country and on unpaved streets in towns and villages 80 or 85 lb. T rails will be used, according to present plans, and on unpaved streets in towns 128 lb. girder rails will be used. It is expected that power will be secured from the Hydro Electric Power Commission of Ontario.

New Transfers on Montreal Tramways.

A Montreal paper gives the following description of a new transfer put in use by Montreal Tramways Co. on July 1. The principal change is that the transfers are now of a uniform color, white. They bear no day or date at the top, but these are marked along the margin, two series a month being issued, as the dates run from the 1st to the 15th and from the 16th to the 31st. The months are printed at the bottom, February to June being on one issue, and July to January on the other. The month and date are punched at the office. One transfer is used for day and night, and the a.m. and p.m. are no longer required. The transfer bears a black stub, which is detached by the conductor between 4 a.m. and 4 p.m., but which is left with the transfer between 4 p.m. and 4 a.m. The direction of the car is marked in a square, compass fashion, instead of along the corners, as formerly. Transfer points, time limit, and tram lines are marked as on the old style, except that these have been arranged so that they may all be punched from the right side of the slip. Two new notations are used, in the form of a 2 and 3. When a passenger uses a transfer for the first time, the 2 is punched by the conductor, and the third transfer is also indicated by the remaining number. When this has been punched, the transfer is to be lifted and automatically becomes void. As some 200,000 transfer are issued a day, and all unused transfers under the old system had to be discarded, it will readily be seen that the saving under the new system is large.

Hull Electric Company's Pagan Falls Development.

The Hull Electric Co. is applying to the Quebec Government for authority to build a dam on the Gatineau River, bordering on Lot 17, Range 3, Aylwin, to Lot 40, Range 2, Low, on the west, and Lot 28, Range 3, Hincks, to Lot 40, Range 1, Delholm on the east, and has deposited plans and specifications with the Minister of Lands and Forests at Quebec. The location of the proposed development is at the Pagan Falls, about 35 miles northwest of Hull. The plans include the building of a dam 125 ft. high, above which a lake of about 8 or 10 square miles will be formed, stretching from Low to Kazabazua. The ultimate capacity of the plant will be 150,000 h.p., and it is estimated that the cost will be approximately \$10,000,000. Some details of the project were given in Canadian Railway and Marine World for Oct., 1922, pg. 530.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Railway.—A press report states that the construction of the second track on Victoria Road was completed, Aug. 4, and that traffic was started over it Aug. 6.

Work is reported to have been started Aug. 6 on relaying tracks on the Fraser Ave. line, from Kingsway to Twenty-fifth Ave. Traffic was re-routed, so as to leave this section of the line clear for the work, which includes a concrete base, with new heavy steel rails, and concrete block paving. (Aug., pg. 403.)

Calgary Municipal Ry.—A press report states that it is proposed to make a test on the Louise bridge tracks, of a new system of surfacing, which if successful will be tried fully on the reconstruction of the double track on Seventeenth Ave. The plan is to fill in over the ties to a level with the paving on the rest of the street, with fine hard packed gravel, and then lay a coat of asphalt over it. The work on the Seventeenth Ave. line is being gone on with and it is proposed to fill in the portion of the roadway between the tracks to the top of the ties this year, and giving it plenty of time to settle before doing anything more. The new track is being laid with 60 lb. rails. The tracks on the Second St. subway are being taken up and replaced by new ones laid in concrete. The old 40 lb. rails on Langevin bridge are being replaced by new 80 lb. rails. The new manganese steel intersection in Riverdale is reported to have been installed. The curve on Ninth Ave. at Sixth St. W., is to be relaid with heavier steel, and the roadbed repaired. This latter work will, it is stated, complete the betterment for this year. (July, pg. 353.)

Hull Electric Co.—A press report states that a suggestion has been made for the construction of a loop at Mackenzie Ave., via St. Patrick St., the estimated cost of which is \$150,000. (July, pg. 353.)

London St. Ry.—The City Surveyor is reported to have advised a city council committee, Aug. 6, that arrangements had been completed with the company for the paving on Richmond St., and that the work would be gone on with at once. The rails for relaying the street railway tracks were expected to be delivered within a few days. The paving work on Oxford St. is expected to be laid over until next year owing to the company not being able to get the rails. (Aug., pg. 403.)

Montreal Tramways Co.—Mr. Justice Hackett, sitting in the Quebec Practice Court at Montreal, July 31, heard arguments on a petition by E. Fournier, a Montreal East ratepayer, for an injunction to restrain the Town of Montreal East and the company from building an extension of the car line on Marien St. The proposed extension would be half a mile long, and the Montreal East Town Council passed a bylaw providing for its construction, the town to provide for the substructure, and to pay the company 6 per cent. interest on the cost of the completion of the line. The plaintiff alleged that the extension would be in the National Cement Co's interests and not in the public interest. Judgment was reserved.

The Board of Railway Commissioners gave judgment Aug. 1, on the company's application to extend its Atwater Ave. line across the Canadian National and

Canadian Pacific Rys. tracks, to enable connection to be made between the city and Point St. Charles. The Chief Commissioner in the course of the judgment said: "When I realize that Parliament for many years has granted to this Board \$200,000 annually for eliminating level crossings existing prior to 1909, I do not think this Board is justified in opening up other level crossings especially in such a congested area as this location, for the purpose of granting the small relief which the opening of this street would afford." The application, which was supported by the city, was, therefore, refused. (Aug., pg. 403.)

New Brunswick Power Co. is, a press report states, again considering the possibility of extending its electric car line to Millidgeville and Rockwood Park.

Ottawa Electric Ry.—At a meeting of the Ottawa Board of Control, July 31, a delegation from the Retail Merchants' Association presented the following resolution for consideration:—"This meeting urges the city authorities to proceed without delay with the formulation of such an agreement so that the street railway may be so extended and improved as to give a service commensurate with the importance of the city and adequate to meet the demands of a growing population." The delegation was assured that the city would forward the resolution to the company, after the Mayor had reviewed the situation, regarding the negotiations that had taken place during the past two years, and stated that the onus was on the company in the matter and that it was a question if it could be induced to make any extensions.

The company has issued a statement reviewing the negotiations between the company and the city since 1919, which concluded as follows: "On Aug. 1 the company enters upon a five-year extension of the old franchise under which extensions and improvements requiring a large capital expenditure are not possible unless the franchise is somewhat amended. We appreciate perhaps more than the average business man that most of the extensions recommended last year by Mr. Feustel are urgently needed. If we have to wait for them another five years the growth and prosperity of Ottawa will be seriously affected. We have always been and are now ready to discuss this most important matter with city representatives who are sincere in their desire to arrive at a satisfactory solution. We do not consider that the majority of the members of last year's street railway committee were actuated by such a motive." The Mayor is reported to have said in commenting on this statement that negotiations will be opened by the city with the company for new extensions as soon as the company makes some definite proposition.

The proposed agreement between the company and the Hull, Que., City Council with respect to the construction of a loop crossing Bridge St., near the Eddy Co's offices and the Eddy Park, was discussed by the council Aug. 11, and its further consideration was postponed. A press report states that the proposed agreement, which is to run for 25 years from Sept. 1, provides that in the event of the Ottawa Electric Ry. being acquired by the City of Ottawa the company's obligations to the City of Hull will be terminated. During the life of

the agreement the company is required to maintain the part of Bridge St., from Main St. to the Eddy Slide, and the north east section of Eddy Park, under the City Engineer's control; improved cars are to be provided; a 5-minute service is to be maintained and passengers boarding the cars in Hull are to be charged the same fare and given the same transfer privileges as prevail in Ottawa; the company is also to provide a waiting room in Hull which is to be heated during the winter. The cost of the loop, line, the new cars, and the waiting room was estimated by Major Burpee, the company's manager, at about \$100,000. The principal section of the agreement which is still the subject of negotiation is one retaining to Hull the right to impose a business tax.

Eastview Township Council, on Aug. 1, appointed a special committee to confer with the company with respect to the extension of the line now terminating at the Protestant Hospital, Rideau St., to a short distance west of Notre Dame Cemetery, Eastview. The company suggested that a 30-year franchise be given, in return for which the company would give a 5c. fare, with 8 tickets for 25c., with a 6 minute service to be operated by 4 cars. (Aug., pg. 402.)

Waterloo-Wellington Ry.—Consequent on the carrying of a bylaw by Kitchener, Ont., ratepayers, authorizing the raising of \$70,000 of debentures to buy the electric railway between Kitchener and Bridgeport, 3.45 miles, and provide for its reconstruction, the Kitchener Light Commissioner, who will have charge of its future operations, will consolidate it with the Kitchener and Waterloo Electric Ry. The reconstruction work will, it is expected, be put in hand at an early date.

Windsor, Essex and Lake Shore Rapid Ry.—A press report states that Leamington Town Council has decided to apply to the Ontario Railway and Municipal Board for an order to compel the company to pave the road between its tracks on Erie St. there. (June, pg. 295.)

Winnipeg Electric Ry.—The city council's public improvement committee is reported to have approved plans for the extension of the car line on Notre Dame Ave. from the present terminus to Midland St. (Aug., pg. 403.)

Hydro Electric Power Commission Bridge.

The Hydro Electric Power Commission of Ontario on Aug. 20 awarded contracts for the construction of a highway bridge at Victoria Road, Stamford Township, Ont., over the Chippewa power development canal, as follows: substructure, Campbell and Lattimore, Toronto; superstructure, Hamilton Bridge Works, Ltd., Hamilton, Ont.

This bridge, necessitated by the construction of the power development canal, will replace the present temporary wooden structure. It will be of the deck truss type, with three 90 ft. spans, and in addition to a 02 ft. clear roadway will carry two 6 ft. sidewalks. It will have a reinforced concrete floor. It will not cross the canal at right angles, but will be set on a skew of 34 deg. Work on the substructure is to begin immediately, and it is expected that the bridge will be completed this year.

Electric Railway Employes' Wages, Working Conditions, Etc.

British Columbia Electric Ry.—Early in June the employes applied for an increase of wages, and revised working conditions, which, a press report stated, meant the practical restoration of the wage schedule in force prior to 1922. This schedule, which was put in operation Oct., 1920, provided the following rates:—City motormen and conductors, 65c.; interurban motormen and conductors, 67c.; car repairers, 70c.; mechanics' helpers, 65c.; car cleaners, 58c.; carpenters, 77c.; blacksmiths and machinists, 80c.; trackmen, 60c. Towards the end of 1921, the company gave notice of its intention to reduce wages 15 per cent., but the men declining to accept this a board of conciliation was appointed and the majority report recommended a 10 per cent. reduction. This the company agreed to, but the men refused. Following conferences a new agreement was entered into Jan. 5, 1922, with the following rates per hour on city and suburban lines:—Conductors and motormen, 1st 6 months, 48½c.; 2nd 6 months, 53c.; 3rd 6 months, 56c.; thereafter 58½c. One-man car operators, 64½c. Conductors and motormen in work train service, 2c. an hour extra. On interurban lines, District 1, District 4, 16th St. yard and Carroll St. yard the rates per hour are: passenger conductors and motormen, 1st 6 months, 48½c.; 2nd 6 months, 54c.; 3rd 6 months, 57½c.; thereafter 60½c. Freight conductors and motormen, 1st 6 months, 51½c.; 2nd 6 months, 56½c.; 3rd 6 months, 60½c.; thereafter, 63c. Passenger brakemen, 1st 6 months, 48½c.; 2nd 6 months, 52c.; 3rd 6 months, 55c.; thereafter, 57½c. Freight brakemen, 58½c. Trolleyman, 56½c. Sunday work to be paid at rate of time and a quarter, holidays, time and a half. Extra men to be guaranteed a minimum monthly earning of \$87.50. These rates do not apply to conductors and motormen on the Lulu Island Branch; the Fraser Valley line, and the Saanich Division on Vancouver Island.

A joint advisory board, with W. H. Cottrell as chairman, represents the men in the negotiations, which up to Aug. 9, had proved fruitless. The men have given the company 30 days notice of their desire to have the agreement readjusted, and have applied to the Labor Department at Ottawa for the appointment of a board of investigation and conciliation.

Montreal Tramways Co.—The strike of the laborers and trackmen on July 19, in which about 300 or 400 men were involved, was settled, a press report of July 25 stating that the men were given 5c. an hour increase from July 1, and pay for the 4½ days the strike lasted.

In connection with the differences between the company and its conductors, motormen and other car employes, the negotiations which were in progress when Canadian Railway and Marine World for August went to press, resulted in the management declining to consider any advance in wages paid to motormen and conductors, affirming that wages have been increased 100 per cent. since 1913, and are now 65 per cent. higher than they were in 1918, while the cost of living for a family of five, according to the figures of the Department of Labor, was only 6.52 per cent. higher than in April, 1918.

The management proposed to enter into a one, two or three year contract on

the basis of the present rates of wages for motormen and conductors; certain readjustments in the outside departments, and the formation of a pension fund for employes as soon as the company's debt to the city is paid. This was voted on by the men July 30, three questions being submitted, and the result was announced, Aug. 1, as follows:—In favor of accepting the company's offer, 1,211; in favor of referring the matter to arbitration, 195; in favor of striking within 48 hours, 661. Subsequently there have been conferences between the company and the men's representatives with respect to the readjustment of the shopmen's wages, and a general meeting of the management with representatives of outside departments was held Aug. 13, to discuss the draft agreement prepared by the company, but did not result in a final decision being arrived at.

Moose Jaw Electric Ry. Co.—The motormen walked out on the morning of Aug. 1, in protest against the dismissal of motorman T. Tyndall. It is stated that he was dismissed following the burning out of two motors alleged to have been caused by his carelessness, but was given six weeks to find other employment. On Aug. 1, Tyndall reported for duty, but found his car assigned to another motorman, whereupon the other men refused to take their cars from the barns. Following a conference the company's management changed Tyndall's dismissal into a suspension until the matter was settled, and arrangements were made for resuming service on the following day. An organizer of the Amalgamated Association of Street and Electrical Railway Employes of America, went to Moose Jaw and discussed this, and a number of other matters, with the management, and suggested the drawing up of a written agreement between the company and its employes to take the place of the verbal agreements that have been made up to the present. By arrangement the question of Tyndall's dismissal or suspension was referred to J. Pascoe, M.L.A.; S. A. Hamilton and C. Green, who after hearing what both parties had to say exonerated him of the charges preferred against him.

Mainly About Electric Railway People.

H. H. Couzens, General Manager, Toronto Transportation Commission, and President Canadian Electric Railway Association, was entertained at dinner, at the Engineers' Club, Toronto, by the Commission's various department heads, on Aug. 7, and was presented with a valuable pipe and a huge canister of tobacco, prior to sailing from Montreal, on Aug. 10, for a six weeks holiday in England. Mrs. Couzens, who has been in England for some months, will return with him.

H. A. Cromwell, Auditor, London and Port Stanley Ry., London, Ont., has resigned to enter insurance business at Port Stanley, Ont.

R. J. Fleming, ex-General Manager, Toronto Railway, has had his appeal against an income tax assessment on \$20,000 for 1923, in York Township, Ont., dismissed. He appealed on the ground that he has no assessable income for 1923, having severed his connection with

the Toronto Ry Co. prior to the end of 1922, and that the tax on his income for 1922 had been paid. An amendment to the act under which the assessment is made, states that every resident in a municipality shall be assessed in 1923 for the income he received during the previous year, whether he has any assessable income for 1923 or not.

A. T. Goward, whose appointment as Vice President, British Columbia Electric Ry., Victoria, B.C., with jurisdiction over all the company's matters on Vancouver Island, was announced in our last issue, was born at Tenby, Wales, in 1872, and educated in the principality. He came to Canada after completing his education, and entered the service of the National Electric Tramway and Lighting Co., now British Columbia Electric Ry. Co., in 1890 as conductor and a few months later he opened the books of the company's lighting department, and was placed in charge of them. He was made Manager of the Vancouver Island lines in 1897. He is a member of the Union Club, the Victoria Chamber of Commerce, and of local golf clubs.

Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co., Hamilton, and his son, did some salmon fishing on the Pabos River, in Gaspe Peninsula, Que., during August. Mrs. Hawkins and her daughter have been visiting the Pacific Coast, including Alaska.

George Kidd, President, and W. G. Murrin, Vice President, British Columbia Electric Ry., were entertained at luncheon at the Vancouver Club, Vancouver, recently, by a number of local business men who congratulated them on their recent appointments.

Lt. Col. G. C. Royce, ex-General Manager, Toronto Suburban Ry., and Mrs. Royce, have been spending some time at the Royal Muskoka Hotel, Lake Rosseau, Ont.

J. E. Tanguay, Managing Director, Quebec Power Co., has also been appointed General Manager, Quebec Ry., Light, Heat & Power Co., vice W. J. Lynch, who has been appointed Assistant General Manager, Q. R. L. H. & P. Co., and also of Quebec Power Co. Mr. Lynch's duties have not as yet fully defined, but it is expected that he will be in charge of the Purchasing Department, and also of the Montmorency Division, as J. E. Everell, its Superintendent, is retiring.

J. B. Woodyatt, Montreal, Vice President and General Manager, Southern Canada Power Co., which controls the Sherbrooke, Que., street railway, is one of the directors of Ottawa and Hull Power Co., which has been formed to acquire the Ottawa and Hull Power and Manufacturing Co.

Track Construction, Etc., Hydro Electric Railways, Essex District.

The Hydro Electric Power Commission of Ontario gave contracts on Aug. 21 for track construction on the Hydro Electric Railways, Essex District, as follows: Cadwell Sand and Gravel Co., Windsor, 3,740 ft. of double track (7,480 single track feet), on Erie St. from Ouelette Ave. to Parent Ave., Windsor; 100 ft. of double track (4,200 single track feet) on Parent Ave. from Erie St. to Ottawa So., Windsor, and 2,540 ft. of double track (5,080 single track feet) on Ot-

tawa St. from Parent Ave. to Lincoln Road, Windsor, and a passing siding, 475 ft. long, on Ouelette Ave. near Maple Ave., in Windsor; to Merlo, Merlo & Ray, Ltd., Walkerville, 1,925 ft. of single track on Sandwich St. from the Canadian National Railways bridge to the city's eastern limits, in Walkerville, and 3,250 ft. of single track from the eastern limits of Walkerville to Strabane Ave., in Ford City. As stated in Canadian Railway and Marine World for June, pg. 290, the Commission had also called for tenders for the construction of 2,500 ft. of double track in Sandwich, from Bridge St. to Soper St., but we are officially advised that this work has been deferred indefinitely, on account of the municipality not being prepared to proceed with the paving which should go forward simultaneously with track construction.

The article in our June issue was accompanied by an illustration showing cross and longitudinal sections of the track to be built. The contracts mentioned above have been let on the basis of the contractors furnishing sand, gravel, cement and trap rock, the Commission to furnish rails, ties, track fastenings and all overhead line material. The Commission will do the joint welding. The rail to be used will be 80 lb. A.S.C.E. section, in 60 ft. lengths, and International steel twin ties will be used. No departure from existing overhead construction will be made, it being of the usual span support type.

In addition to the track construction for which contracts have been let the management will do the following work with railway forces: Completion of ballasting of Tecumseh Division; application of 2 miles of rock ballast on Amherstburg Division; erection of additional roadside shelters; and minor improvements. It is expected that the track construction will be begun immediately and be completed by Nov. 15, and that the work to be done by railway forces will also be completed this year.

Toronto Suburban Railway Diversion and Co-ordination Project.

In accordance with the Canadian National Rys. scheme for the provision of an electric radial railway service for the Toronto district, as stated in a letter from Sir Henry Thornton, President, to the chairman of a Toronto city council special transportation committee, which was published in full in a previous issue of Canadian Railway and Marine World, the Toronto Suburban Ry. applied on July 31 to the Board of Railway Commissioners for authority to build a diversion of its line to connect across the territory in York Township, north of Toronto, with the proposed electrified line to the east of the city, and to furnish it with a terminal at St. Clair Ave. and Keele St., Toronto. At present the T.S.R., where it draws close to the C.P.R. double track line west of Toronto, turns easterly and follows Dundas St. towards the city. The city is taking over all of the T.S.Ry. tracks within the city limits, which necessitates the diversion for which authority is asked. It is the intention to take up the T.S.R. line on Dundas St., from the commencement of the diversion to the westerly city limits, or sell it to York Township for operation by the Toronto Transportation Commission, after the diversion is built, and to bring passengers from Guelph, and points between there and Toronto, to

the new terminal at St. Clair Ave. and Keele St., where they would transfer to the T.T.C. lines to reach their destinations in the city. The right of way for the proposed diversion follows the Toronto & Niagara Power Co's power line from near the point of diversion from the present T.S.R. line to near Weston Road, and the land for it was secured some years ago. The diversion would cross the C.P.R. tracks near West Toronto by a subway, and it is proposed to cross Scarlett Road, Jane St., Castle Crescent Road and Symes Road, all in York Township, by level crossings; Weston Road, within Toronto city limits, by a subway, and Gunn's Road, also within the city, by a bridge.

On the railway's application being announced the Mayor of Toronto and various city officials, who have indicated by their attitude for some time that they are not enthusiastic over the Canadian National Rys. electrification projects, were reported to have stated that the granting of the application would create undesirable transportation conditions within the city, and that they would oppose it. Their objections appeared to be based on misapprehensions, and on the fact that they thought that new level crossings would be created within the city. E. W. Oliver, Manager T.S.R., then issued a statement, which was, in part, as follows: "There should be no opposition from the city on the score of level crossings, as we are to cross Gunn's Road by a bridge and Weston Road by a subway. The other crossings, in the township, are on roads that have not a great deal of traffic, and there would be no more danger there than on any road or street where an electric radial line runs. The location submitted is over the same right of way as approved for the Canadian Northern Ry. years ago. We are following a right of way that now exists and this is a part of the scheme of co-ordination of the Toronto Eastern and Toronto Suburban Rys. The co-ordination will be effected by taking the Toronto Eastern across the north of the city by the old belt line route, and connecting it with the Toronto Suburban near the proposed terminus at Keele St. and St. Clair Ave."

The Toronto Board of Control has asked for a report on the subject from Works Commissioner Harris and H. H. Couzens, General Manager, Toronto Transportation Commission. The attitude of the York Township authorities towards the proposed diversion has not been announced.

Proposed Purchase of London Street Railway.

The London, Ont., City Council has appointed Sir Adam Beck, Chairman of the London Railway Commission and of the Hydro Electric Power Commission of Ontario, to negotiate with the London St. Ry. Co. as to a price for the property which would be acceptable to the shareholders. The management is reported to have referred the council to the valuation of approximately \$1,250,000, placed on the property by the Hydro Electric Power Commission of Ontario engineers in 1920, and to have suggested that the council decide to take over the property at a value to be fixed by arbitrators. The mayor is reported to have expressed the view that the property is not worth \$600,000.

Electric Railway Passenger Fares.

Montreal Tramways Co.—The Montreal Tramways Commission's annual budget has been practically completed, and a press report states that it will announce that until certain overdue payments have been made to the city, it will not be possible to build up the reserve fund, which is provided for in the franchise contract. When this reserve fund reaches \$1,000,000 the Commission may reduce the fares, and when it reaches \$2,500,000 the Commission must reduce them. The Commission is reported as stating that there is no prospect of a fare reduction this financial year or the next one.

Ottawa Electric Ry.—Notice was recently given by the company to the city board of control that it did not consider itself obliged after Aug. 13 to sell Sunday tickets at 28 for \$1, or 7 for 25c. It was also stated that the company did not intend to discontinue the operation of Sunday cars or to make any immediate change in the Sunday rates of fares that have been in operation. The rates of Sunday fares were fixed July 29, 1899, to run during the unexpired portion of 30 years, which commenced Aug. 13, 1893. This agreement expired Aug. 12, and the notice was given so that the continuance of the Sunday fares beyond that date might not be interpreted as a waiver of the company's rights, either to discontinue the service or to refuse to issue tickets at the special rates awarded in the contract. The matter was referred by the board of control to the city solicitor to ascertain whether the special Sunday car agreement has not become part of, or embodied in, the regular city franchise agreement which was automatically extended for five years, owing to the city council's failure to give notice that it would take over the line on Aug. 13. The city solicitor's opinion, which was read at a board of control meeting on Aug. 14, reviewed the original franchise and the agreement as to the operation of Sunday cars and concluded as follows: "One of the company's privileges under the agreement as amended, and which is to continue after Aug. 13, 1923, until ownership is assumed by the corporation, is to operate its lines on Sundays, and one of the conditions which is attached to, forms part of, and determines the extent of that privilege, is that the company shall sell tickets on Sundays at the rates fixed by the agreement on July 29, 1899. The company can continue to exercise its privilege only according to the terms upon which it was granted. It cannot, therefore, in my opinion, so long as it continues to operate on Sundays, refuse to sell tickets at the rates provided for in the agreement of July 29, 1899."

Detroit, Mich., Municipal Ry. has advanced its cash fares from 5c. to 6c., with 9 tickets for 50c. Transfers are still charged for at 1c. each additional. The Board of Street Railway Commissioners, in making the announcement, stated that the average street railway fare in the U.S. is 7.08c. It also stated that the advance was necessitated by the increased wages granted employees, which will add \$600,000 a year to the expenses, and of \$250,000 a year extra for new power, which will wipe out the approximate net earnings of \$1,000,000, said to have been made in the year ended June 20.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.

	June, 1923	June, 1922	12 mons. to June 30, 1923	12 mons. to June 30, 1922
Gross	\$831,005	\$802,511	\$10,373,178	\$10,220,054
Expenses ..	620,073	622,697	7,337,434	7,444,025
Net	210,932	179,814	3,035,744	2,771,029

Cape Breton Electric Co.—

	May, 1923	May, 1922	5 mons. to May 31, 1923	5 mons. to May 31, 1922
Gross	\$56,533	\$48,051	\$281,200	\$241,570
Expenses	48,397	42,354	262,510	248,490
Net	8,136	5,697	18,690	*6,920
Interest	5,619	5,505	28,302	27,905
Balance	2,517	192	*9,612	*34,825

Montreal Tramways and Power Co.—

An extraordinary general meeting of shareholders was held Aug. 9, on a shareholder's requisition for five purposes, the principal one being to amend the Articles of Association, sec. 86, by striking out the provision that members must be in possession of shares for 3 months before being entitled to vote on them, and the other being the appointment of a member of the investigation committee in place of C. H. Branchaud, who resigned a few days after his appointment on July 5. Scrutineers were appointed to take the votes, on the question of whether the period for the possession of shares be reduced from 3 months to 8 days, and as to whether N. S. Finberg or G. Gauthier be elected to succeed Mr. Branchaud, and the vote having been taken, the meeting was adjourned to Aug. 14, when the scrutineers reported that the motion to reduce the period of possession of shares was defeated by 79,184 against 44,356, and that G. Gauthier had been elected a member of the committee of investigation by 79,184 against 44,300 for Mr. Finberg. It was agreed that any other vacancy arising in the committee be filled by the directors. The next annual meeting was fixed for Dec. 20.

Niagara, Welland and Lake Erie Ry.—

There has been deposited with the Secretary of State at Ottawa a trust mortgage dated May 1, 1923, between the Niagara, Welland and Lake Erie Ry. Co. and the National Trust Co.

The Quebec Power Co's directors issued circulars to Quebec Ry., Light, Heat and Power Co. shareholders on July 26, stating the terms on which the several securities in these companies would be taken over. The Quebec Power Co. will purchase the Q.R.L.H. & P. Co's common stock of the aggregate par value of \$10,000,000 by giving in exchange stock in the power company to the extent of \$25 for each \$100 share of the Q. Ry., L., H. and P. Co., such shares forming part of an authorized issue of \$6,000,000, of which \$1,600,000 have been issued. Holders of Q. Ry., L., H. & P. Co. 5 per cent. 30-year income bonds are offered for each \$100 bond, \$30 in 7 per cent. preference shares of the power company, such shares forming part of an authorized issue of \$4,000,000, of which \$1,410,000 have been issued; or \$27 in cash for each \$100 bond. Shareholders and bondholders are given up to Sept. 28 to make the exchange, or, in the case of the bonds, to elect to take cash. The Q. Ry., L. H. and P. Co. directors issued a circular on July 26, advising the acceptance of the offer. A number of minority shareholders met in Montreal early in August, to discuss the matter with the result that a general meeting of shareholders was called to be held Aug. 9, but was postponed until Aug. 16. The

proceedings appear to have been private. It is stated that there are about 30,000 shares outside of those held or controlled by the Quebec Power Co. directors.

The Quebec Power Co. has moved its offices into the Quebec Ry., Light, Heat and Power Co's building, and it is reported that the former Public Service Corporation building on Crown St. will be sold.

Regina Municipal Ry.—A press report states that during the week of the annual exhibition at Regina, Sask., the municipal railway carried 143,097 passengers, against 149,234 during the exhibition week of 1922, the receipts being \$9,059.40 against \$9,931.55.

Waterloo-Wellington Ry.—Kitchener, Ont., ratepayers who, on May 12, by a majority of 12 votes, defeated a bylaw to issue debentures for \$70,000 to buy and rehabilitate the Waterloo-Wellington Ry., extending from Kitchener to Bridgeport, 3.45 miles, voted on the question again on Aug. 18, and carried the bylaw by 938 to 576, according to a press report. Details of the agreement as to the purchase, and particulars of the property to be acquired were given in Canadian Railway and Marine World for July, pg. 350.

Winnipeg Electric Railway.—

	June, 1923	June, 1922	6 mons. to June 30, 1923	6 mons. to June 30, 1922
Gross	\$403,759	\$417,754	\$2,745,433	\$2,753,487
Expenses 295,866		322,533	1,909,600	2,036,912
Net	107,893	95,221	835,833	716,575
Fixed charges 75,189		57,375	449,231	358,557
Surplus ..	32,704	37,846	386,602	358,018

The decrease in the surplus for June, compared with June, 1922, was due to an unusual decrease in gross earnings of the railway and gas utilities, the electric utility showed an increase of approximately \$15,000. The operating expenses of the railway increased \$721, due to extraordinary maintenance repair work; the operating expenses of the gas utility decreased \$10,366, and the operating expenses of the electric utility increased \$9,903, due to an increase in the cost of power and distribution, on account of the increase in the load.

Ottawa Electric Railway's Proposals to the City.

A press report states that Major F. D. Burpee, Manager, Ottawa Electric Ry., forwarded to the Mayor on Aug. 18 a proposal for the settlement of affairs between the company and the city. The proposition is said to be for the drawing up of an agreement for an exclusive franchise for carrying passengers within the city but not interfering with the interurban buses, to be renewed every 5 years; the company to build certain extensions of lines; limited and Sunday fares to be done away with, and a 5c. fare to be charged, the fare to be reviewed every 5 years. A special meeting of the board of control was held Aug. 20 to consider the proposal, and it is reported that it was decided to recommend the reconvening of last year's street railway committee, which handled the street railway question; approval of the company carrying out the extensions enumerated in its offer; that the valuation of \$4,500,000, arrived at last year, be adhered to as a basis of negotiation in any proposed purchase of the railway five

years hence, plus cost of extensions and minus depreciation; and, that steps be taken to see if war time legislation giving the company the right to appeal to the Board of Railway Commissioners regarding a revision of fares, has been renewed by the company. The city council on the same evening re-appointed the special street railway committee consisting of the Mayor, Controllers McGuire, Balharrie, Ellis and Cameron, and Aldermen Cunningham, Lowe, Bordeleau and Forward. The other recommendations were discussed but no decisions were arrived at.

Electric Railway Notes.

The Toronto Transportation Commission has received 36 motor cars from Canadian Car and Foundry Co.

The British Columbia Electric Ry. and the C.P.R. are reported to have arranged a schedule of shunting operations in Vancouver, which will confine such operations between 4 and 7 p.m. daily.

The Hamilton and Dundas St. Ry. did not, as was expected in Dundas, Ont., cease operating Aug. 1, upon the expiration of the special agreement as to fares entered into at the beginning of the year.

Ottawa Electric Ry. Co. adopted some time ago a new type of hand fare boxes. Conductors have complained that the handles chafe their hands, and the management is experimenting with a new handle.

The Windsor, Essex and Lake Shore Rapid Ry. Co. issued, effective Aug. 15, a standard mileage freight tariff between stations on its line: Tariff G. F. D. 357, cancelling G. F. D. 293; C. R. C. 307 cancelling C. R. C. 269.

A Sherbrooke Ry. and Power Co's motorman, operating a car on Ontario St., Sherbrooke, Que., on Aug. 1, encountered two young deer on the tracks. A similar incident occurred about a week previously near the exhibition grounds.

The British Columbia Electric Ry. Co. issued a map of its Vancouver city lines in two colors, 12 x 9 in., showing the car routes and the points of interest adjacent thereto. It is reported that within three days about 30,000 of them were distributed by conductors on the cars.

Ottawa Car Manufacturing Co. is, a press report states, considering the possibility of removing its entire plant from Ottawa, Ont., to Hull, Que. Questions of provincial legislative restrictions, and the incidence of taxation as between Ottawa and Hull, are said to be the reasons. The company employs about 500 men.

Calgary, Alta., Municipal Ry. has been suffering from what was believed to be the use of forged tickets, and offered \$25 reward for the detection of the offenders. The plan adopted is, it is stated, to buy children's tickets at 8 for 25c. and dye them the same color as the adult's tickets, which sell at 18 for \$1. A motorman-conductor believed he had caught an offender July 30, and called in the police, but after investigation the charge was withdrawn.

Canadian Electric Railway Association.—The standards committee appointed at the executive committee's meeting in Toronto on July 20, the personnel of which was given in Canadian Railway and Marine World for August, on page 399, has been added to by the appointment of M. C. Smith, Manager, Cape Breton Electric Co., Sydney, N.S.

Marine Department

Injurious Operation of Inland Water Freight Rates Act, 1923.

Canadian Railway and Marine World gave, in preceding issues, details of charges made concerning conditions in the shipping business on the Great Lakes, particularly with reference to western grain transportation, and of the investigation and report of a government commission appointed to investigate the charges, and our August issue contained the Inland Water Freight Rates Act, 1923 in full as passed at the Dominion Parliament's last session. The most important details of the act are summarized as follows: Section 3 provides that any carrier by water, operating between Port Arthur or Fort William and any other port in Canada or the U.S. must, within 30 days of the passing of the act, and before entering into any contract to carry grain, file with the Board of Grain Commissioners a tariff of the charges proposed to be made. If any existing tariff is to be changed, notice of the change, with all particulars, must be filed with the Board. Any ship owner neglecting to file tariffs or changes in tariffs, or who charges rates higher than those filed, is subject to a penalty of not more than \$2,000 and not less than \$500, or 6 months imprisonment. Sec. 4 provides that it shall be the Board's duty to tabulate all tariffs filed, to keep itself in intimate touch with rate and cargo space conditions, to watch for and detect discrimination, and to keep the Minister of Trade and Commerce informed concerning the situation. It empowers the Board to call on anyone connected with the grain trade for information, and provides that anyone neglecting or refusing to furnish it will be liable to a penalty of not more than \$1,000 and not less than \$200. Sec. 5 provides that when the Board thinks any rate too high, or discriminatory, it may prescribe a rate, either absolutely or conditionally, and that if any ship owner charges a rate higher than the prescribed maximum, he will be liable to a penalty not exceeding \$2,000 and not less than \$500, or 6 months imprisonment. Sec. 6 provides that vessel brokers and others engaged in chartering space shall post up daily, in the Winnipeg Grain Exchange and at the Board of Grain Commissioners' office at Fort William, statements showing the cargo space contracted for on the previous day, with time for shipment and destination. Sec. 7 prohibits brokers from handling insurance. Sec. 8 prescribes penalties for violation of clauses 6 and 7, in the case of an individual a penalty of not more than \$1,000 and not less than \$100, or 3 months imprisonment, and if a corporation, a penalty not exceeding \$3,000 and not less than \$500. Sec. 9 provides that the act applies only to the carriage of grain in interprovincial, foreign or export trade, and not to that of grain to be consumed or milled in Ontario, but it places on the carrier the burden of proof as to any shipment being provincial in nature.

The amendment to the Canada Shipping Act, also passed at the Dominion Parliament's recent session empowering the Government to suspend the coastal laws so as to allow foreign ships to trade between Canadian ports, without like privileges being accorded Canadian ships as concerns foreign ports, was also given

in Canadian Railway and Marine World for August, pg. 410.

As the time approached for the remarkable legislation contained in the "Inland Water Freight Rates Act, 1923", which can be repealed or suspended by Parliament only, to come into operation a curious situation began to develop, grain handling firms, including those who had most vociferously demanded legislation governing the lake grain traffic, strongly criticising the act, these criticisms increasing in number and intensity until, by Aug. 1, definite expression had been given by the grain trade generally to the opinion that the act was impractical, impossible and unworkable, and that if it remained in force it would be out of the question to be able to move the export crop to the seaboard. Canadian shipowners, to regulate the operations of

as reasonably undertake to regulate rates charged by the countless motor trucks carrying freight on the highways as they could to regulate rates charged by water carriers, for the simple reason that the inland waters are as free to all as are the public highways, and that the opportunity is open to all who may desire to place their ships in those waters and compete for traffic. Consequent on the U.S. shipowners stating their attitude, it at once became evident that the Government, by enacting legislation ostensibly to increase facilities and competition on the lakes, had really created a condition that would prevent U.S. ships from carrying grain from Port Arthur and Fort William to Buffalo and other U.S. ports and would thus prevent prompt movement of the crop. It was pointed out that the crop could not be moved efficiently and expeditiously without the assistance of U.S. ships, and by Aug. 1 the grain trade's demands that the tariff legislation be thrown out, or honored more in the breach than in the observance, were even more insistent than the former demands for legislation to "break up the shipping combine."

Another difficulty complained of has to do with demurrage. Immediately on the act coming into force, Canadian shipowners filed provisional tariffs of rates for carriage, and containing a demurrage clause. In 1922 and preceding years Canadian shipowners did not charge demurrage, and the large losses incidental to delays at unloading ports were borne by them and they had to recoup their losses as best they could by quoting higher rates. The shipowners' attitude this year is that they do not intend to gain ill favor by quoting rates which will be high enough to at least make up part of the loss incidental to delay in unloading, but on the contrary intend to name fair rates and charge the trade demurrage on a per bushel per diem basis. In 1922 U.S. shipowners charged demurrage at Buffalo; the rate ranging from \$500 to \$1,000 a day, according to the size of the ship, but in no case was the demurrage charged sufficient to recoup the loss the shipowner experienced through the delay. Canadian shipowners state that they have shouldered this risk long enough; they point to the fact that the railways charge demurrage to make up for the loss occasioned by their patrons using their cars as warehouses, and have declared their intention of dealing similarly with those who so use their ships. On the shipowners' intentions as to demurrage becoming known, the grain men immediately complained that they could not do business at all if they had to assume a demurrage risk. They stated that they did business on such a small margin that any large demurrage charge would wipe out all profit, and cause large loss, and that if they had to accept the demurrage clauses, and if the delay were as serious as last year, as they confidently expect will be the case, they would have to increase their margins to such an extent that it would react disastrously upon the producer.

Another complaint from the grain men is in regard to the requirement that brokers post up daily, in the Winnipeg Grain Exchange and at Fort William,

Dominion Marine Association.

Honorary President, A. A. Wright, Vice President and Managing Director, Davie Shipbuilding and Repairing Co., Montreal and Toronto.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Ltd., Montreal.

First Vice President, G. J. Madden, George Hall Coal and Shipping Corporation Ltd., Ogdensburg, N.Y.

Second Vice President, A. E. Mathews, Mathews Steamship Co. Ltd., Toronto.

Executive Committee, The President, First and Second Vice Presidents; and W. E. Burke, Century Coal Co. and Canada Steamship Lines Ltd.; **W. Crawford** and **Yvon Dupre,** Sincennes-McNaughton Lines Ltd., Montreal; **L. L. Henderson,** formerly of Montreal Transportation Co., honorary member; **W. J. McCormack,** Algoma Central Steamship Lines, Sault Ste. Marie, Ont.; **Col. G. P. Murphy,** C.M.G., Ottawa Transportation Co., Ottawa, Ont.; **C. H. Nicholson,** Canada Atlantic Transit Co., and Canadian National Ry., Central Region Car Ferries, Toronto; **E. W. Oliver,** Niagara, St. Catharines & Toronto Navigation Co., Toronto; **J. F. Sowards,** Kingston, Ont.; **J. F. M. Stewart,** Toronto; **John Waller,** Keystone Transports Ltd., Montreal; **Senator L. C. Webster,** Webster Steamship Co. Ltd., Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

which the legislation was largely designed, while expressing themselves as not favorable to it and as being of the opinion that it would interfere with efficient handling of the crop, stated that they could do business under it and were prepared to go ahead and obey its terms.

The grain trade's first objection to the act in regard to filing of tariffs. U.S. shipowners announced that under no circumstances would they file tariffs as required by the act; and stated that practically ever since the U.S. Interstate Commerce Commission was established it has been trying to secure control of the lake rate situation by having U.S. shipowners file their tariffs with it, but this they refused to do, and they claim that if they were to file tariffs in Canada it would materially weaken their position as concerns the I.C.C.'s desire to exercise control. U.S. shipowners deny that they are common carriers, in the commonly accepted sense of the term, and claim that the rate regulating authorities could

details of the previous day's business, as concerns space contracted for, time for shipment and destination of cargo. Although the act does not require the broker to show who contracted for the space, the practical application of this section would result in any exporting firm's transactions becoming common knowledge, and the shippers claim that sellers would be in a position to "hold out on" any firm desiring grain to fill a contract, and to increase its price.

As stated above, the act prohibits brokers from placing insurance. Formerly they derived all their revenue from their insurance business, but since the act came into force they have been charging $\frac{1}{4}$ c a bushel for chartering space, with the result that their earnings have been at about the same rate as when they depended on their percentage of the insurance premiums. The shippers, although they admit that the brokers' services are of the greatest value to them, in obtaining space, obtaining postponements of shipments when desired, matching up space and cargo, and keeping them informed of the situation, complain about the chartering charge and maintain that the brokers should be paid by the carriers.

The complaints as to the act's unworkability became so insistent, that the Government dispatched L. Boyd, Chairman, Board of Grain Commissioners, and G. S. Wrong, B.Sc., Chief of the Dominion Bureau of Statistics' Transportation Branch, who was appointed to supervise the act's operation, to Winnipeg, to enquire into the complaints and to try to arrange for such co-operation as would ensure that the crop would be efficiently handled. A meeting, held there on Aug. 7 was attended by L. Boyd, G. S. Wrong, Matthew Snow, member of the Board of Grain Commissioners, H. J. Symington, K.C., representing grain shippers, M. Cole, representing Canada Atlantic Grain Co., T. R. Enderby, Operating Manager, Canada Steamship Lines, Jas. Richardson, of Richardson Grain Co., L. H. Wolvin, Manager, Standard Shipping Co., A. M. Spendlove, of the Inland Shipping Co., R. Magill, Secretary, Winnipeg Grain Exchange, W. A. Prime, representing insurance firms in New York, and A. E. Hoskins, K.C., representing the Standard Shipping Co., and other brokers. The most noticeable feature of the attendance was that every branch of the grain trade was represented except the men who produce the grain—the farmers who were supposed to be benefitted by the act. The press was rigidly excluded, the excuse given being that it was thought all present would speak their minds more freely if they were in camera. It is reported that R. Magill stated that the act was holding up the making of contracts for the new crop and was affecting the price of October wheat considerably; that H. J. Symington, K.C., expressed his clients' views as concerns demurrage, as given above; that T. R. Enderby expressed the ship owners' opinions, viz., that the ships could be operated under the act, but that he did not want to place in effect the high rates of last year to offset losses caused by delays in unloading, and that Messrs. Cohen and Richardson emphasized the serious situation that would develop if U.S. boats would not enter the Canadian trade and carry grain to Buffalo. Nothing definite was accomplished. The meeting was continued on Aug. 8, and apparently resulted in a tacit approval of the Government evading its own law by allowing the ship owners to largely ignore

it, requiring them to file copies of contracts entered into, only, instead of tariffs. It was decided to have one of the Winnipeg brokers wire and ask the U.S. ship owners if such a decision would be satisfactory to them, to which the following reply was received from Cleveland:—"Your message conveys suggestion managers at Cleveland commit themselves to violation or evasion of a Canadian law. Cleveland owners will not knowingly violate or evade any law. You and other Winnipeg brokers are familiar with the fact that Cleveland managers do not care to discuss laws of Canada which have already been enacted. So far owners have shown no disposition to take Canadian grain when we have negotiated future charters." The end of the meeting on Aug. 8 found the differences of opinion as to demurrage still existing; the U.S. ship owners refusing to file tariffs or participate in any evasion of the law with the Canadian Government's consent; the shippers without any satisfaction in regard to the requirement that brokers' post up details of the previous day's business, and agreement that the question of brokers' payment should be settled privately among the shippers, brokers and ship owners. Messrs. Boyd and Wrong thereupon left for Ottawa to report to the Minister of Trade and Commerce, Mr. Robb.

An Ottawa press dispatch of Aug. 10 stated that the Minister had declined to comment on what had transpired at his conference with Messrs. Boyd and Wrong but credited him with the statement that the act was going to be enforced. A Fort William press dispatch about the same date stated that "Canadian bottoms could possibly move the 1923 crop in a little more than 13 months if no effort was made to move oats, barley, rye and flax, according to Fort William shipping men." An Ottawa press dispatch of Aug. 13 quoted the Minister of Trade and Commerce as saying that the act would be administered and that the Government did not expect any great difficulty in carrying out its provisions or moving the crop, adding: "The refusal of U.S. shipping companies to file their tariffs with the Canadian Board of Grain Commissioner as a necessary preliminary to entering the Canadian grain trade was not regarded by the Minister as an insurmountable difficulty, and he indicated that the U.S. companies would probably comply with the Canadian regulations. If they do not and the Government persists in its present attitude they will be automatically shut out from the trade. Mr. Robb pointed out that one of the western grain men's chief complaints was that the crop is thrown on the market practically all at once. A slowing down of the market, consequent upon the non-entry of U.S. vessels into the carrying trade would, he felt, provide an opportunity for feeding the crop to the market at a rate at which the market could digest it. This would test the foundation of the western complaint of too speedy marketing. Mr. Robb seemed optimistic that the crop would be moved in good order."

A Winnipeg dispatch of Aug. 12 stated that Canadian railways, on account of persistent reports of a coming lake blockade, were preparing to haul as much grain as possible all-rail to the Atlantic seaboard, and that it was believed they could haul 75,000,000 bush. eastbound during the autumn and winter, and 20,000,000 to Vancouver.

What little importance was to be attached to the reported statement by the

Minister of Trade and Commerce as to the lack of necessity for participation in the 1923 crop movement by U.S. ships, was shown by a Winnipeg press dispatch of Aug. 14, which stated that Chairman L. H. Boyd, of the Board of Grain Commissioners, was in Cleveland, Ohio, on that date, meeting privately a number of shipowners' representatives, and discussing with them the terms of the act, and the possibility of U.S. ships entering the Canadian grain trade under those terms. It also stated that the owners themselves were to hold a conference on the following day.

A Cleveland press dispatch of Aug. 15 stated that at a conference in Cleveland on that date, U.S. shipowners decided not to enter the Canadian grain trade under the terms of the act, and that a message was sent as follows to the Board of Grain Commissioners for Canada, Secretary Rathbone of which had telegraphed on Aug. 9 enquiring as to the availability of U.S. ships for the Canadian crop movement: "Mr. Rathbone's message of the 9th was duly received. Vessel offices were closed Friday, on account of funeral of the late President Harding, and Saturday was a short day and some managers were away over weekend, hence delay in replying. Informal meeting held today and for reason that our ships operate as private carriers, engaged in the competitive business of transporting ore, coal and stone, with occasional grain cargoes, the prevailing opinion is that the action of the Dominion Parliament has removed your grain from the class of competitive business subject to free and open competition, which is the only character of business in which the lake bulk freighters of U.S. registry have heretofore engaged. Under existing conditions the managers do not feel they can comply with the new law, and, of course, will not operate in violation of it."

A Winnipeg press dispatch of Aug. 16 stated that there had been no export buying of grain of any importance, whereas in most years the business contracted to that date amounted to about 50,000,000 bush., and added: "All hope of more than 50,000,000 bush. of the 1923 crop being shipped across the Great Lakes before the close of navigation has been abandoned by grain shippers on the Winnipeg Grain Exchange, as a result of the final decision of United States shipowners to refrain from entering the Canadian carrying trade this year." The dispatch quoted a leading member of the Grain Exchange as follows: "The situation is the most serious one ever experienced. What can we do to remedy it? Nothing. The Government enacted legislation without consulting a single representative of the trade as to its probable effect, and now we are absolutely helpless."

A Winnipeg press dispatch of Aug. 17 stated that brokers representing many U.S. shipowners had unofficially proposed that some 50,000,000 bush. of Canadian wheat be diverted through Duluth, so that the terms of the act could be avoided. It also said: "In view of the threatened blockade through the refusal of the U.S. fleet to comply with the new law, some exporting interests are turning in the direction of Duluth, while others have hurried agents to Vancouver, to see precisely what that port offers in the way of storage, bottoms and loading facilities."

An Ottawa press dispatch of Aug. 17 stated that the Minister of Trade and Commerce, Mr. Robb, had said, after a

conference with L. H. Boyd and G. S. Wrong, that the act would be administered, and that no trouble with the grain shipping situation was expected. He was reported to have intimated that, while the U.S. shipowners had said they would not come in, he anticipated no trouble from that source, and that when the U.S. ships were through with the coal and ore trade their owners would be anxious to get grain to keep them busy.

A Fort William press dispatch of Aug. 20 stated that Chairman L. H. Boyd had arrived there from Ottawa, where the Minister of Trade and Commerce, after a conference with him, had declared that the act would "be put into effect immediately." The dispatch said: "Mr. Boyd stated that, from information gathered during his stay in Cleveland, U.S. carriers will not, as a whole, abstain from carrying Canadian grain. In the course of his visit he found that the carriers were not all of one mind with regard to the act, and from several owners and agents whom he met, he gathered that when the ships had completed their coal and ore contracts they would be on hand to carry Canadian grain from the head of the lakes.

A Winnipeg press dispatch of Aug. 20 stated that the U.S. shipowners' attitude would be discussed there on Aug. 22 by the Board of Grain Commissioners, and that Chairman L. H. Boyd, who recently interviewed U.S. shipowners at Cleveland, would present a report to the Board at that meeting.

Welland Canal Retaining Wall Break.

Reference was made, in Canadian Railway and Marine World for August, to the break in the westerly retaining wall of the Welland Canal, near lock 23, at Thorold. We have since been supplied with the following further details by L.D. Hara, Superintendent Engineer. Several weeks ago there were evidences of a leak in the westerly retaining wall below lock 23, in Thorold and shortly after, it was noticed that the flow of water, which was not great, stopped practically entirely, of its own accord, after the reach above lock 22 had been unwatered as much as possible, and an examination made, which showed no indications where the water was getting through under the wall. On July 18 the flow of water increased materially through the leak and developed rapidly. This necessitated the unwatering of lock 22 level, and the place of entry of the water was blocked with wooden sheet piling and concrete in bags, which was thought to be sufficient to allow traffic to be resumed and carried on until the close of navigation, when permanent repairs would be made. This temporary stoppage of the leak caused traffic through the canal at that point to be suspended for 19 hours, about 12 or 15 ships being delayed for varying periods. On July 20, the leak again began to flow and developed quickly, it being apparent that the temporary repairs had not been ef-

fective, it was decided to suspend traffic, unwater lock 22, and make permanent repairs. Through traffic had to be completely suspended from noon July 20, until 11 a.m. July 23, about 60 or 70 ships being delayed for varying periods. No damage was done to the canal banks or structures.

Canadian Pacific Railway Ocean Steamship Services.

The s.s. Empress of Canada will start on a round the world cruise, from Vancouver, B.C., Jan. 4, and is expected to complete the trip by returning to Vancouver about May 24. From Vancouver she will proceed to San Francisco, San Pedro, Balboa, the Panama Canal, Havana and New York, where the main lot of passengers will join her.

The s.s. Empress of Britain will make two cruises next winter, to the West Indies, Panama and South America. The first will start from New York, Jan. 22, and the second Feb. 23, calling at Cuba, Jamaica, Panama, Venezuela, Trinidad, Barbados, Martinique, St. Thomas, Porto Rico, Nassau, Bahamas, Cartagena, Colombia, etc., and at Curacao, in the Dutch West Indies. Each cruise will occupy 29 days.

Steamboat Inspection Estimates, for the year ending March 31, 1924, submitted to the House of Commons recently, provide for a vote of \$119,210.

Ships Registered in Canada in April and May, 1923.

In compiling the following lists of ships registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, n.h.p.	etc.	Owner or Managing Owner
141,369	Belchers (1)	Montreal	Toronto	1919	251.0	43.6	20.7	2,251	1,353	148 Sc.	Belchers Steamship Co., Montreal.
150,546	Bo Peep(a) (2)	St. John, N.B.	College Point, N.Y.	1918	87.8	14.6	8.0	76	48	20 Sc.	H. L. Thorne, St. John, N.B.
138,187	Dalrymple	Collingwood	Collingwood, Ont.	1923	252.0	43.1	16.9	1,711	1,167	95 Sc.	Main Transit Co., Collingwood, Ont.
122,445	Eldred	St. John, N.B.	The Range, N.B.	1907	51.6	13.6	7.4	38	26	13 Sc.	Lancaster Tugboat Co., St. John, N.B.
			Meteghan, N.S.	1923							
150,732	Economic(a)	Toronto	Hamilton, Ont.	1906	39.2	8.4	3.2	12	8	24 Sc.	G. W. Hosick and J. R. Gonneau, Minett, Ont.
138,277	Garagantua	St. Catharines, Ont.	Chippewa, Ont.	1923	130.0	32.1	15.4	381	259	90 Sc.	Lake Superior Paper Co., Sault Ste. Marie, Ont.
150,237	Glenelg	Midland, Ont.	Midland, Ont.	1923	252.0	43.1	23.3	2,099	1,200	92 Sc.	Great Lakes Transportation Co., Midland, Ont.
150,827	John C. Howard	Montreal	Three Rivers, Que.	1923	250.6	43.2	18.1	2,053	1,224	150 Sc.	Fraser Brace, Ltd., Montreal.
150,894	Motor Princess(a)	Victoria, B.C.	Esquimalt, B.C.	1923	153.0	43.5	9.0	1,243	779	*600 Sc.	Canadian Pacific Ry. Co., Montreal.
141,103	Pagwa(a)	Peterborough, Ont.	Peterborough, Ont.	1923	60.0	11.8	4.2	35	26	15 Sc.	Hudson Bay Co., London, Eng.
150,931	R.F.M.	Vancouver, B.C.	Vancouver, B.C.	1922	75.9	19.8	8.6	103		34 Sc.	Marpole Towing Co., Vancouver, B.C.
150,828	Richelieu (3)	Montreal	Wilmington, Del.	1912	322.9	48.2	19.1	5,528	3,096	366 Sc.	Canada Steamship Lines, Montreal.
			Launon, Que.	1923							

(a) Motorboats. (1) Formerly War Hamilton. (2) Formerly Stettenwerf. *b.h.p. (3) Formerly Narrangansett. *b.h.p.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
150,489	Burt Barnes	Kingston, Ont.	Schr.	Manitowoc, Wis.	1882	92.0	24.1	7.3	135	118 J. Swift & Co., Kingston, Ont.
150,420	C. A. Anderson	Lunenburg, N.S.	"	Shelburne, N.S.	1923	118.1	26.8	10.8	146	93 H. W. Adams, M.O., Lunenburg, N.S.
150,826	H.L.	Montreal	"	Barge, Pierreville, Que.	1923	103.5	23.0	7.4	167	145 A. Laperriere, Pierreville, Que.
150,413	John H. McKay	Lunenburg, N.S.	Schr.	Shelburne, N.S.	1922	123.5	26.2	11.0	173	123 A. H. Zwicker, M.O., Lunenburg, N.S.
150,949	K. 51	Vancouver, B.C.	Scow	Eburne, B.C.	1923	90.0	32.0	8.5	204	204 Mrs. R. M. McKeen, Vancouver, B.C.
150,419	Keno	Lunenburg, N.S.	Schr.	Mahone Bay, N.S.	1923	125.6	26.6	10.0	143	92 A. Zwicker, M.O., Lunenburg, N.S.
150,825	Marcel D.	Montreal	"	Barge, Pierreville, Que.	1923	108.4	23.1	7.9	161	145 M. Daneau, Pierreville, Que.
150,418	Nina M. Conrad	"	"	"	1923	124.2	26.8	10.8	159	107 R. S. Corkum, M.O., Lunenburg, N.S.
150,951	Paloma	"	"	"	1923	121.6	26.0	10.4	134	91 Ernst Shipbuilding Co., Mahone Bay, N.S.
150,933	R.P.L. IV	Vancouver, B.C.	Scow	Vancouver, B.C.	1923	80.2	30.0	8.0	164	164 Rat Portage Lumber Co., St. Boniface, Man.
150,938	V.M.C. No. 1	Vancouver, B.C.	Scow	Vancouver, B.C.	1914	80.1	30.0	7.1	142	142 Vancouver Cedar Mills, Ltd., Vancouver, B.C.
150,929	V.C.M. No. 3	"	"	"	1914	92.0	31.2	7.0	171	171 " " " "
150,940	V. L. Co. No. 2	"	"	"	1912	80.6	29.6	7.0	142	142 " " " "
150,941	V. L. Co. No. 4	"	"	"	1913	80.5	29.8	7.0	141	141 " " " "
150,942	V. L. Co. No. 5	"	"	"	1913	80.0	30.0	7.0	143	143 " " " "
150,943	V. L. Co. No. 6	"	"	"	1913	80.5	29.8	7.0	141	141 " " " "
150,944	V. L. Co. No. 7	"	"	"	1922	94.4	29.9	7.8	184	184 " " " "
150,945	V. L. Co. No. 8	"	"	"	1922	94.5	30.0	7.7	186	186 " " " "
150,946	V. L. Co. No. 9	"	"	"	1923	94.6	31.8	7.7	197	197 " " " "
150,947	V. L. Co. No. 10	"	"	"	1923	94.2	31.9	6.7	169	169 " " " "
150,948	V. L. Co. No. 11	"	"	"	1923	94.2	31.9	6.7	171	171 " " " "
150,417	W. E. Knock	Lunenburg, N.S.	Schr.	Lunenburg, N.S.	1923	121.4	26.4	9.8	141	95 Zwicker & Co., Lunenburg, N.S.

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

Canadian Vickers Ltd., Montreal, did the following repair work during July.—For Canadian Government Merchant Marine;—steamships Canadian Commander, 5,493 tons, Canadian Constructor, 7,178 tons, Canadian Explorer, 5,408 tons, Canadian Navigator, 3,099 tons, Canadian Squatter, 3,091 tons, and Canadian Victor, 5,454 tons, for underwriters' and owner's repairs and bottom painting. For Canada Steamship Lines,—s.s. Rapids Prince, 1,384 tons, docked July 26 for survey, and undocked same day. For Imperial Oil Ltd.—s.s. Iocomo, 1,669 tons, extensive general repairs, 66 shell plates removed for renewal, fairing, etc., repairs to framing, bulkheads, and tank top, 4 oil cargo tanks arranged for carriage of case goods or bulk oil, installation of cargo derricks and winches deck and engine room equipment reconditioned for seagoing service, crew's accommodation enlarged and improved and wireless operator's room equipment added, ventilating improvements and refrigerating plant with cold storage space for use in tropical climates, work completed and ship ready for service early in the month; s.s. Victrolite, 10,825 tons, general repairs and painting of topsides. For McLean Kennedy Ltd., agents, s.s. Paliki, 1,578 tons, docked July 2 for underwriters' and owner's repairs, undocked July 9. For United States Shipping Board,—s.s. St. Anthony, 4,839 tons, docked July 4 for underwriters' and owner's repairs and bottom painting, undocked July 11. For Knox Bros., motor boat repaired. For Thos. Harling and Sons, agents,—s.s. Lingfield, 4,065 tons; docked July 12 for underwriters' repairs, undocked July 15; s.s. Hartfield, 4,661 tons, searching tanks. For George Hall Coal and Shipping Corporation,—s.s. Edward L. Strong, 2,052 tons, docked July 13 for underwriters' and owner's repairs, undocked July 21. For Intercoast Steamship Co.,—s.s. E. C. Pope, 2,781 tons, and s.s. Maruba, 2,657 tons, docked July 30, for cutting and preparing for voyage through canals to the Great Lakes, work completed during August. For Eastern Steamship Co.,—s.s. John J. Rammacher, 1,723 tons, docked July 29 for repairs to shell and framing due to collision damage, work completed during August. The following repairs were done in the harbor. For Anchor-Donaldson Line,—steamships Coracero, Corinaldo, Gracia and Kastalia, voyage repairs; s.s. Parthenia, 4,753 tons, repairing crack in cylinder. For Van Nievelt Goudriaan, steamships Alcor, 3,527 tons, and Yildum, 3,234 tons, voyage repairs. For Westfal, Larsen and Co., s.s. Porsanger, 4,267 tons, new boat davit standard. For Canada Steamship Lines,—s.s. Edmonton, 2,214 tons, voyage repairs; s.s. Mapleboro, 1,141 tons, repairs to hatch coamings; s.s. Canadian, 2,214 tons, connecting new deck winch. For United States Shipping Board,—s.s. Sinasta, 6,052 tons, voyage repairs; s.s. West Kobar, 5,620 tons, supplying boiler tubes. For Navigazione Libera Triestina,—s.s. Marina, 5,400 tons, voyage repairs. For Clarke Steamship Co.,—s.s. Gaspesia, voyage repairs. For Kawasaki Dockyard Co.,—s.s. Tokufuku Maru, 5,859 tons, voyage repairs. For Mathews Steamship Co.,—s.s. India, 976 tons, voyage repairs. For Tyneside Line Ltd.,—s.s. Newton Hall, 3,930 tons, voyage repairs. For Dampskibs Selsk Dannebrog, s.s. Jelling, 1,909 tons, voyage repairs. For C. Stewart Co., s.s. Paliki,

1,578 tons, voyage repairs.

The company launched at the end of July the first seaplane built in Canada. It is one of 6 which the company is building for the Dominion Government for forest patrol work. The launching was done by Mrs. G. J. Desbarats, wife of the Acting Deputy Minister of National Defence. The machine is equipped with Rolls Royce engines of 375 h.p. and has a wing spread of 65 ft.

Cholberg Shipyard, Victoria, B.C.—The Victoria Chamber of Commerce appointed a committee recently to investigate the question of obtaining an early release of this property from litigation proceedings with the Dominion Government, with the view of establishing it again as one of the local industrial plants. The yard was leased some time ago to Victoria (B. C.) Shipowners Ltd., for building 4 wooden sailing ships under special aid from the Dominion Government, to relieve the unemployment situation resulting from demobilization. The failure of that company before completing its first ship, and the Government's action to preserve its rights under mortgages and liens, resulted in prolonged litigation, which is now practically terminated. The Chamber of Commerce is acting on the committee's report, and representations are being made to the Government.

Halifax Shipyards, Ltd., Halifax, N.S., did the following repair work during July. For Imperial Oil Ltd.,—s.s. Imperoyal, docked July 1 for extensive bottom damage repairs, including renewal of 22 plates, removing fairing, and replacing 20 plates, fairing in place 15 plates, and extensive repairs to keel plates, bulkheads, floors and intercostals, particularly in way of engine and boilers, damage caused by stranding in Strait of Canso in June, undocked July 29. For Royal Mail Steam Packet Co.,—s.s. Chignecto, docked July 29, for half yearly overhauling, including drawing of tailshaft for examination, opening up of sea valve for inspection, and scraping and painting, undocked July 31. The s.s. Amalienburg was docked July 17 for extensive boiler repairs and was undocked July 23.

Wallace Shipbuilding and Drydock Co., North Vancouver, B.C., has been given a contract by the Dominion Public Works Department, for docking and cleaning dredge 306 (Mastodon), for \$13,435; for unmooring and towing dredge, \$50; for machinist, \$1.15 an hour; for machinist helper, 85c an hour, and for supplying electric current, 10c a k.w. hour.

Yarrows Ltd., Victoria, B.C., did the following repair work during June and July. For Canadian Government Merchant Marine,—s.s. Canadian Highlander, 5,370 tons, docked, cleaned and painted, boiler and sea connections overhauled, and new zincs. For Canadian Pacific Ry.,—automobile ferry Motor Princess, docked, repairs to propeller and rudder, later removing damaged propeller and installing new tail shaft and 2 new manganese bronze propellers, under water repairs and painting; s.s. Princess Alice, 3,099 tons, docked, cleaned and painted, various repairs and renewing zincs; s.s. Princess Maquinna, 1,777 tons, 3 manganese bronze propeller blades. For Canadian Government,—s.s. Berens, docked, tail shaft drawn and new one installed, work on propeller, rudder, etc.; s.s. Malaspina, 392 tons, repairs to main steam pipe. For Cascade Freighting and Towing Co.,—s.s. Cascade, 119 tons, docked,

cleaned and painted, deck and hull repairs. For Commercial Cable Co.,—cable ship Restorer, 3,180 tons various alterations and repairs, later drydocked, general overhaul, cleaned and painted, tail shafts drawn, propellers removed and replaced. For Grand Trunk Pacific Coast Steamship Co.,—s.s. Prince Rupert, 3,379 tons, 2 new manganese bronze propeller blades. For Pacific Salvage Co.,—s.s. Algerine, 592 tons, docked, tail shafts drawn for inspection, new manganese bronze propellers of new design installed, ship washed down; for other companies, s.s. Golden Gate, 4,854 tons, drydocked, cleaned and painted, new propeller 18 ft. diam. cast and installed; s.s. Bervin, formerly Coquitlam, 256 tons, docked, tail shaft drawn, repairs to frames and deck beam; schooner Malahat, 1,550 tons, drydocked for survey. In addition to the foregoing, several scows, 2 dredges, and a tug were docked for cleaning and painting.

Sale of Steamship Mariska.

The s.s. Mariska was offered for sale recently by order of the Supreme Court of Ontario, under a deed of trust, made by the owner, Transatlantic Steamship Co., to secure an issue of \$300,000, 6 per cent. serial gold bonds, and was sold to the Chartered Trust and Executor Co., as trustee for bondholders, for \$100,000, and was later sold to Minto Trading Co., Montreal. We are advised that arrangements are in progress to have her cut in two at Montreal, to increase her length by 34 to 48 ft., the two parts to be towed through the canals to Buffalo, where they will be rejoined. It is stated that the operations are in charge of J. F. M. Stewart, Toronto. The Mariska was built at Cleveland, Ohio, in 1890, of steel, and has watertight double bottom for ballast, steel boiler house, 3 watertight and 2 non watertight bulkheads, hatches spaced 24 ft. centers. Her dimensions are,—length b.p. 291 ft., breadth moulded 40 ft., depth moulded 22 ft., tonnage 2,325 gross, 1,835 net. Her propelling machinery consists of triple expansion engines with cylinders 24½, 38 and 61 in. diam. by 42 in. stroke, 1,200 i.h.p., at 80 r.p.m., supplied with steam by 2 Scotch boilers, each 14 ft. diam. by 12½ ft. long, at 160 lb. It is reported that she was bought from the Pittsburgh Steamship Co., early in the war for \$40,000, and was sold again for ocean service for \$320,000, after which she was cut in two and taken to the seaboard.

Quebec Shipping Statistics.—During July, 50 ocean going ships, of 315,064 tons, and 35 coastwise ships of 26,954 tons, arrived at the port, compared with 49 ocean going and 35 coastwise ships in July 1922. Grain receipts for July were, by railway, 6,795 bush. by water, 951,993 bush.; grain exported, 136,751 bush. The total grain receipts for the season to July 31, were 2,477,012 bush., and the total exports, 1,762,993 bush. The general cargo landed at the port for July was 5,442 tons, and the amount shipped was 1,379 tons, in addition to 10,059 tons of coal and 17,978 tons of fuel oil. The lumber shipments for July were 2,243,911 ft. b.m., and the total for the season, to July 31, 7,070,457 ft. b.m. Two shipments of cattle to Great Britain were made during the month.

Atlantic and Pacific Oceans.

The Royal Mail Steam Packet Co. and Holland American Line joint steamship service, between Great Britain and Europe and North Pacific ports, was placed on a new schedule in August. Five ships are being operated, as follows,—s.s. Cardiganshire, and motorships Loch Goil and Loch Katrine, by Royal Mail Steam Packet Co., and motorships Moerdyk and Drecht dyk by Holland American Line. All the ships are equipped with refrigeration machinery, and have a limited passenger accommodation. Sailings are made every three weeks.

Various reports which state that the Union Steamship Co. of New Zealand, which operates the Canadian-Australasian Royal Mail Line, will place an additional passenger liner in service between Canada and Australasian ports, in the autumn of 1924, and that she will be built in Scotland, for delivery within 20 months, appear to indicate that the company has just given an order for such a ship. As a matter of fact, the order was given the Fairfield Shipbuilding and Engineering Co., Glasgow, Scotland, in Oct., 1922, for delivery within 20 months of the placing of the contract. Preliminary details were given in Canadian Railway and Marine World for March. Her dimensions will be—length 600 ft., breadth 73 ft., and about 20,000 net tons. She will be equipped with internal combustion engines for a speed of 18 knots. She will be practically a duplicate of the C.P.R. s.s. Empress of Canada, by the same builders, with the exception of her propelling machinery, which will be Diesel engines of the Sulzer type, of about 13,000 shaft h.p.

The inauguration of a Canadian steamship service between Atlantic and Pacific ports, via the Panama Canal, took place with the sailing of the s.s. Margaret Coughlan from Montreal, Aug. 9, for Vancouver, with a general cargo. She was built at Vancouver, B.C., in 1920, and is screw driven by engine of 267 h.p. Her dimensions are,—length 411.5 ft., breadth 54.1 ft., depth 27.5 ft.; tonnage, 5,704 gross, 3,531 net. She was owned formerly by Canadian Western Steamships, Ltd., Vancouver, a subsidiary of J. Coughlan and Sons, Ltd., and was sold recently under an order of the court, for the benefit of the bondholders, who bought her in. She has since passed under the control of the Atlantic Steamship Co., a Canadian incorporation of a New York company. She is under the local management of Thos. Harling and Son, and the experiment is being made to see if sufficient trade can be developed by this route to make the continuance of the service worth while. Under a previous management she carried a large shipment of lumber from Vancouver to Montreal, and on her next trip from Vancouver, will also carry lumber, as well as a large consignment of salmon.

Maritime Provinces and Newfoundland.

The Norwegian s.s. Woldingham, while outward bound from Newcastle, N.B., with a cargo of deals, struck the Morrissey bridge across the Miramichi River, Aug. 10, damaging the draw span.

The Italian s.s. San Giuseppe, with coal from Newport News, Va., for Three Rivers, Que., ran ashore at Sand Point, in the Strait of Canso, Aug. 10, and was

refloated three days later without apparent damage.

The Royal Mail Steam Packet Co's s.s. Teviot arrived at St. John, N.B., Aug. 7, to replace the s.s. Caraquet, wrecked at Bermuda. During the war the Teviot was used as a transport boat between Southampton, Eng., and France.

The s.s. Sable I, owned by Farquhar and Co., Halifax, N.S., struck a submerged rock, Aug. 13, shortly after leaving St. Pierre, and was beached at Lamaline, Nfld. Those on board were landed safely. It is stated that she will be refloated.

The Newfoundland Government has given G. W. H. Petheram, chief officer of the Dominion Line s.s. Welshman, a silver salver, in appreciation of his services in saving the crew of the Newfoundland ship Stanley Joseph, in the Atlantic Ocean, Nov. 26, 1921.

The British s.s. Newton, which stranded at the entrance to Lockport harbor, N.S., July 3, and which was released by the St. John Drydock and Shipbuilding Co's steam tug Margaret A. Hackett, and taken to Halifax, is being offered for sale by tender, by the underwriters.

Admiral Seymour arrived at St. John's, Nfld., at the end of July, on H.M.S. Calcutta and proceeded to Point Amour, Labrador, to examine H.M.S. Raleigh, which went ashore there Sept. 8, 1922. It is reported that the matter of salvage is dependent on his report to the Admiralty as to the ship's position and condition.

During dredging operations by the Public Works Department in the channel leading to Courtenay Bay in St. John harbor, N.B., the limits of the dredging near the main channel have been marked by piled dolphins, which are marked at night by lights, shown from lanterns. They will be removed as the dredging is completed.

The Intercolonial Navigation Co's s.s. Advance, which was wrecked on Shut In Island, near the entrance to Halifax harbor, July 2, and which was abandoned as a total constructive loss, is reported to have been sold to John Simon, Halifax, N.S., for \$2,400. The greater portion of the cargo was removed, and the balance remaining on board was sold to the same person for \$25.

The steam trawler Sir John French, owned in Halifax, N.S., bound from Port Hawkesbury, N.S., to Grand Bank, Nfld., struck on the rocks at Little Dantzic Point, recently, and became a total loss. The officers and crew were landed safely. She was built at Beverley, N.S., in 1915, her dimensions being, length 140 ft.,

breadth 24 ft., depth 13 ft., 351 gross tons. She was screw driven.

The Boston, Halifax and Newfoundland Steamship Co. is reported to have bought the s.s. Yankton at New York, by auction, for \$8,900, plus auctioneer's fee of \$250. She was later sent to Boston, Mass., for refitting for service between Boston, Halifax and St. John's. She is about 185 ft. long, and will have accommodation for about 50 passengers. She was built at Leith, Scotland in 1893, and was at one time used as a private yacht by the late Mme. Sara Bernhardt. In May 1898 she was bought by the U.S. Government for \$125,000, for a dispatch boat in the Spanish-American War. During the recent war she served in the Mediterranean, and after the armistice, she was condemned and sold for \$10,000. She was seized recently by U.S. prohibition authorities, confiscated and sold by auction.

Province of Quebec.

The steam tug Scionda, owned by National Dock and Dredging Co., Levis, Que., while on her maiden trip to Godbout, Que., towards the end of July, sank near Rimouski, and is a total loss. Those on board were saved in a small boat.

The Clarke Steamship Co. which operates a steamship service from Montreal, Quebec and along the north shore of the St. Lawrence, to Harrington, Labrador, has extended the service to Curling and Humbermouth, Nfld., and has appointed T. Basha and Sons as agents at Curling.

Bay Line Steamships' s.s. Birchbay, formerly Eric W. of the Webster Steamship Co., while en route to Quebec, from Lake Ontario, with coal, grounded in the Richelieu Rapids, Aug. 8. She was abandoned to the underwriters, and was offered for sale by tender up to Aug. 15. She was built at Cleveland, Ohio, in 1882, with oak hull of the following dimensions,—length 225 ft., breadth 35 ft., depth 19 ft.; tonnage, 1,183 gross, 810 net. She is equipped with a fore and aft compound engine, with cylinders 26 and 48 in. diar. by 42 in. stroke, 559 i.h.p. at 72 r.p.m., and is supplied with steam by a firebox boiler 8 ft. diar. by 15 ft. long at 95 lbs. She was originally named Harry E. Packer, and owned by Rogers Transportation Corporation, Cleveland.

The Marine Department is replacing the lightship at White Island reef, in the St. Lawrence River, below Quebec, with a new steel one, with two masts, the hull being painted red, with the name White Island Reef No. 5, in white letters on each topside. There is a red ball

Ships Added to and Deducted from the Canadian Register During April and May, 1923.

Added.	Steam.— —Tonnage—			Sailing.— —Tonnage—		
	No.	Gross	Net	No.	Gross	Net
Built in British Possessions.....	23	7,987	4,945	24	3,582	3,204
Purchased from foreigners.....	8	7,963	4,549	1	135	118
Registered anew.....	8	577	410	.....	.....	.....
Other ships.....	1	32	2	.....	.....	.....
Added without re-registry.....	.....	12	4	.....	15	15
Totals.....	40	16,571	9,910	25	3,682	3,337
Deducted.						
Wrecked or otherwise lost.....	2	342	202	8	1,774	1,604
Broken up or unfit for use.....	3	136	109	22	1,743	1,722
Sold to foreigners.....	6	6,939	4,304	.....	.....	.....
Registered anew.....	2	62	42	6	487	361
Other ships.....	1	6,498	4,040	.....	.....	.....
Deducted without re-registry.....	.....	32	125	.....	106	214
Totals.....	14	14,009	8,822	36	4,110	3,901

between the masts, and if for any reason the lightship is off her station, the ball will be lowered. A cluster of white occulting lights encircle the foremast, visible all around the horizon, and elevated 35 ft. above high water, and should the electricity fail, there are 2 standby lanterns at the mast head to show fixed white lights. A steam whistle will sound two blasts of 5 seconds each every 90 seconds, and a submarine bell will strike 5 times every 18 seconds, with intervals of 2 seconds between strokes and 10 seconds between groups of strokes.

Ontario and the Great Lakes.

Press reports stated early in August that the St. Lawrence River was approximately 30 in. below the average August level.

The U.S. Government has given a contract for widening the section of the Livingstone Channel, in the Detroit River, west of the Detroit River lighthouse, to deep water in Lake Erie, dredging on which was commenced early in August.

The Rockport Navigation Co's s.s. Mississquoi ran ashore on Granite Island, at the end of July, while en route from Clayton, N.Y., to Gananoque, Ont., owing to the sudden illness and fainting of the captain, who was at the wheel. She was refloated and taken to Kingston, where she was drydocked for examination and repairs.

The United States Lake Survey reports the stages of the Great Lakes for July, in feet above the mean sea level, as follows—Superior 601.87; Michigan and Huron 570.89; St. Clair 574.87; Erie 572.04; Ontario 245.80. Compared with the average July levels for the past 10 years, Superior was 0.77 ft. below; Michigan and Huron 1.16 ft. below; Erie 0.93 ft. below, and Ontario 1.07 ft. below.

Glen Steamships' s.s. Glenealy, ran ashore about six miles below Farrans Point, in the St. Lawrence River, Aug. 8, when bound from Fort William to Montreal, with grain. The Sincennes-McNaughton Line's steam tug Muscalonge was dispatched and refloated her, after about 10,000 bush. had been lightered by the Montreal Harbor Commissioners' floating elevator 18. It is stated that the Glenealy suffered no damage.

The two motor ships which have been built at Ashtabula, Ohio, for the Great Lakes, Welland Canal and New York

State barge canal service, were built under the American Bureau of Shipping Great Lakes and coastwise classification, and have a d.w. capacity on canal draft, of 2,000 tons, and at sea, of 2,600 tons. Refrigerator space is provided for about 600 tons. The chief dimensions are,—length 258 ft., breadth 42 ft. They will be operated by Minnesota-Atlantic Transport Co., Duluth, Minn.

The Robert Hicks Coal and Towing Co's s.s. W. J. Carter, while running between Oswego, N.Y. and Cobourg, Ont., July 28, with coal, sprang a leak and sank. The captain and crew, a total of nine, escaped in a small boat, and were rescued by Keystone Transports' s.s. Keyport. The s.s. W. J. Carter, which had a wooden hull, was built at Milwaukee, Wis., in 1886 and was screw driven by engine of 36 h.p. Her dimensions were,—length 122 ft., breadth 27.8 ft., depth 9.6 ft.; tonnage, 317 gross, 170 net.

The U.S. s.s. E. C. Pope, which was engaged in Great Lakes service prior to the war, and which, with other ships, was placed in ocean service, having been cut in two to allow of passage through the canals, has returned to the Great Lakes, having again been cut in two at Montreal, by Canadian Vickers, Ltd. The two sections passed through the Welland canal Aug. 14, en route to Ashtabula, Ohio, where they will be reunited. The s.s. Maruba has also been cut in two by Canadian Vickers, Ltd., after having been similarly engaged.

Manitoba, Saskatchewan, Alberta and Northwest Territories.

The s.s. Winnipeg, owned by F. P. Weaver Co., Winnipeg, has had her name changed to Weavercoal.

The Hudson Bay Co's s.s. Athabasca River ran aground on a bar about 40 miles from Fort Norman, in the Mackenzie River, towards the end of July, and was reported to be high and dry, owing to the lowering of the water. It was stated that possibly special ways would have to be built to enable her to be refloated. This was expected to be done by the end of August, or early in September.

Of the \$195,000 appropriated for work on Manitoba, Saskatchewan and Alberta rivers and harbors, it is stated that approximately \$100,000 will be expended on dredging, and approximately \$95,000

on new works and repairs to wharves, buildings and equipment of the rivers and harbors, and that of the total, \$158,000 will be spent in Manitoba, of which \$80,000 will be for dredging, and \$78,000 for wharves, buildings and equipment. The Government wharf at Selkirk is to be repaired at a cost of \$13,665, and considerable dredging is to be done in the Red River and Lake Winnipeg.

British Columbia and Pacific Coast.

The motorboat Borealis, formerly a sailing ship owned by J. A. Lindsay, Vancouver, has had her name changed to Odeon.

The s.s. Coquitlam, owned formerly by Union Steamship Co. of British Columbia, and now owned by Capt. A. Berquist, Victoria, has had her name changed to Bervin.

The additional automobile ferry service between Anacortes, Wash. and Sidney, Vancouver Island, was commenced July 30, when a party of visitors were entertained by the Victoria Chamber of Commerce. The service is given by the Victoria-Anacortes Ferry Co., with two boats, the City of Angeles and the Mount Vernon, formerly Robert Bridges.

Furness Withy and Co's s.s. Siberian Prince, which went aground at Bentinck Island, near Race Rocks, B.C., recently, had a portion of her cargo lightered, to enable temporary repairs to be made, so that she might be refloated and towed to Esquimalt, to be drydocked for survey and permanent repairs. The salvage work was done by the Pacific Salvage Co.

The Puget Sound Navigation Co. is reported to have decided to have an additional automobile ferry built for next year's automobile traffic between Port Angeles and Victoria. It is stated that the boat will be equipped with a Diesel engine, will be capable of making three round trips a day, and that accommodation will be provided for 23 automobiles, without removing tops or tires.

The Coastwise Steamship and Barge Co., Seattle, Wash., with Canadian offices at Vancouver, which operates some ships in the Canadian coastwise trade, is stated to have taken the motor boat Caesar to Victoria, for transfer to the Canadian register, for operation between Anyox, Britannia Beach and Tacoma. The Marine Department has given notice that under the provisions of the Canada Shipping Act, sec. 27, her name has been changed to Mogul.

The U.S. s.s. Rainier, which was rammed by the Japanese s.s. Mandasan Maru, in a fog, near Victoria, B.C., July 28, and which was towed by the Pacific Salvage Co's s.s. Algerine to Esquimalt, where temporary work was done, was handed over to her Seattle, Wash., owners, Aug. 7. The Pacific Salvage Co. has libelled the Rainier for \$20,000, and the owner of the Rainier, the Atlas Steamship Co., has libelled the s.s. Mandasan Maru for \$200,000.

The Diesel engined tug Lucienne, which arrived at Vancouver recently, from Rotterdam, Holland, was bought by Wallace Shipbuilding and Drydock Co., North Vancouver. She was built at Rotterdam in 1920, is classed 100 A1 at Lloyd's, and is stated to be the most powerful tug of her type on the coast. Her dimensions are,—length over all 87 ft., length b.p. 80 ft. 5 in., breadth, moulded

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during July:

Articles	Eastbound	M. ft. B. M.	Canadian Canal	U.S. Canal	Total
Lumber	5,981		38,263	44,244	
Flour	722,830		496,190	1,219,020	
Wheat	2,283,135		13,345,798	15,628,933	
Grain, other than wheat	1,505,119		6,520,097	8,025,216	
Copper	2,275		3,812	6,087	
Iron Ore			10,094,136	10,094,136	
Pig Iron			2,750	2,750	
Stone			4,320	4,320	
General Merchandise			3,571	4,404	7,975
Passengers			5,241	3,055	8,296
Coal, Soft			14,440	2,757,269	2,771,709
Coal, Hard			4,500	349,424	353,924
Iron Ore				36,960	36,960
Manufactured Iron and Steel			5,932	9,307	15,239
Salt			2,306	8,545	10,851
Oil			6,372	31,510	37,882
Stone				103,432	103,432
General Merchandise			44,341	31,924	76,265
Passengers			5,602	3,327	8,929
Summary					
Vessel Passages	Number	548	2,855	3,403	
Registered Tonnage	Net	840,327	9,704,599	10,544,926	
Freight—Eastbound	Short tons	190,029	10,792,617	10,982,646	
Westbound	Short tons	77,891	3,328,371	3,406,262	
Total Freight	Short tons	267,920	14,120,988	14,388,908	

19 ft. 8 in., depth, moulded 11 ft., draft, loaded 10 ft. She has a fuel tank capacity of 34 tons, and fresh water capacity of 13½ tons. She is equipped with a 420 b.h.p. 4-cylinder reversible 2-cycle Diesel engine, operating at 210 r.p.m., and has an ordinary cruising speed of 9½ knots, but on her trials reached 11¼ knots. She was 52 days on the voyage, via Las Palmas, Colon, the Panama Canal, Balboa and direct to Victoria and Vancouver.

Canal Traffic Statistics.

The Dominion Bureau of Statistics, Transportation Branch, has issued the following summary of canal statistics for June:—

Sault Ste. Marie.—Total traffic through the Canadian and U.S. canals for June increased 5,683,025 tons, or over 70% over June 1922. Wheat increased 13,050,590 bush., or 105%; iron ore increased 2,593,638 tons, or 39%; and coal shipments increased 2,776,328 tons. Coal shipments during June 1922 were very light, while for 1923 they were more or less normal. During June a total of 18,909,900 bush. of Canadian grain passed through the canals, destined to Canadian ports, and 6,944,406 bush. for U.S. ports. Of this total of 25,854,306, Canadian ships carried 19,228,657 and U.S. ships 6,625,647.

Welland.—Total traffic increased 115,444 tons over 1922, the principal increases being, wheat, 42,528 tons, or 1,417,600 bush.; soft coal, 63,357 tons; sand, 18,925 tons; and oats, 17,243 tons. Corn decreased 52,287 tons, or 1,867,390 bush. Canadian steamships increased 138,874 tons, and U.S. steamships decreased 8,855 tons.

St. Lawrence.—The net traffic was 167,295 tons. Grain shipment increased and decreased more or less similar to those on the Welland Canal. Pulpwood increased 8,850 tons, or 13.5%; anthracite coal increased 45,363 tons, and bituminous increased 65,484 tons, or 11%; petroleum and oils decreased 10,655 tons, and sugar decreased 4,060 tons.

Australian Shipping Losses.—The Premier of the Australian Commonwealth is reported to have stated in the House of Representatives, recently, that the net loss on the Government Merchant Marine, since its inauguration, had been £2,645,000. The capital cost was £12,766,538, which the government proposes to write down to £4,718,150, and to constitute a board of control. On behalf of the General Manager, who was in Australia recently, a complete denial has been sent to the English press of a statement which had been published to the effect that the Government intended to dispose of the bulk of its steamships at once, and to retain others for a year, when they would be sold if they had not earned their upkeep.

Welland Ship Canal Construction.—We are officially advised that plans and specifications are being prepared for sec. 8, Welland Ship Canal, which includes between Ramey's Bend, north of Humberstone, and deep water in Lake Erie. It is anticipated that tenders for this section will be called for in the autumn. Alex. J. Grant is Engineer in charge, at St. Catharines, Ont.

The French Government's Control of its merchant shipping, from what is termed an authoritative report, resulted in a loss, during and since the war, of at least 1,806,000,000 francs.

Enquiry Into Steamship Marvale's Wreck.

The official enquiry into the loss of the Canadian Pacific Steamships Ltd., s.s. Marvale, formerly Corsican, on Freels Rock, near Cape Pine, Nfld., May 21, was opened in London, Eng., Aug. 8, before J. A. R. Cairns, a police magistrate, with Capt. L. W. Bayldon, late R.N.R., and Jas. Garriock as nautical assessors. The Board of Trade was represented by John Aspinall; W. W. Higgs, instructed by the Imperial Merchant Service Guild, represented Capt. Harry Lewis, of the Marvale, and Dr. B. W. Ginsburg, instructed by the Navigators and General Insurance Co., held a watching brief for the officer on the bridge, Mr. Chambers. Sir Thomas Fisher, General Manager, Canadian Pacific Steamships Ltd., London, attended on behalf of the company.

Capt. Lewis stated in his evidence that there was a wireless installation and a Marconi direction finder on the ship, but the latter was of no use, as there was not any apparatus for it on Cape Pine. There were also two sets of Kelvin sounding apparatus and a Kelvin compass, as well as a Brown's gyro compass, which was out of order, but this had nothing to do with the casualty. The ship was icebound for 5 days. Twelve inches were broken off 2 blades of the propeller by the ice, and a Dominion Government icebreaking steamship accompanied the ship for some distance. The compasses had been adjusted in 1921, but all deviation books had been lost, the log only having been saved. The ice conditions had been abnormal during the year, and he thought he would be on the safe side by going more north. It was not possible to pass Cape Ray 10 miles away as usual, and he had to pass only 3 miles away. The ice was a month late in the spring this year, due to easterly winds. On May 21 at 2 p.m. he believed he was some 28 miles off Cape Pine, and he was sure it was Cape Pine and not Western Head or any other point. He then altered the course, and both he and the first officer were satisfied that the correct course was adopted. While going at about 13½ knots he heard 2 signals about 4 minutes before the ship struck, but sound was always difficult in a fog. He did not know whether they struck a rock, or a wreck. The damage was on the side high up, and not on the bottom. He realized that it was a mortal wound, and took the ship into shallow water, to beach her. The helm would not respond and she kept turning to the east and settled down forward and sank three-quarters of a mile from the shore in 9 fathoms of water. In answer to a question, he said that he attributed the stranding to the unusual atmospheric conditions and to the abnormal current running in to the land from that point. He was deceived as to the actual distance of the land when glimpses of it were seen through the fog. He considered that the abnormal current had set him in about 4½ miles. He stated that the Mayor of St. John's had advised him to try and have the investigation held there where the people understood the local conditions. Local fishermen had reported that the currents this year had been abnormally strong. Replying to a question as to why the lead was not used between 12.45 and 3.47 p.m., when she struck, he said he was confident the ship was on a clear course and did not think she was experiencing any set-in which could not be detected, and had no doubt

whatever that she was safe. He kept on a northern course because of the ice, which he feared was still about. If he had not been so sure of his position he would have taken more soundings and gone more to the south. The ordinary currents in the river at this point ran out to the south and east, but on this occasion there was a current taking them in to the shore, and there was an in-set tide. It was a most extraordinary current. He had been with the company since 1903, had commanded 16 of its ships, and had never had an accident. During the war he had carried horses, munitions and troops across the Atlantic to Europe, and also in the Mediterranean. After the ship struck, the whole of the crew and passengers were got into the boats without any discomfort, all within 20 minutes, and he had received letters of thanks from passengers. He considered that the speed of the ship had nothing to do with the casualty, the visibility was about a mile, and he considered full speed was justified, at half speed they would have struck in just the same way. A press report states that the court found that the casualty was due to a grave error of judgment by the captain, through being over confident of the position of his ship, but that no censure was passed.

During the hearing it transpired that several of the crew had deserted the ship, and that the company's efforts to secure their arrest had been fruitless. The court stated that it hoped the Board of Trade would keep watch on these men, who, sooner or later, would return to a British port, as the desertion was a serious matter.

Editor's Note.—The Captain is reported to have stated that the Marconi direction finder on the ship was of no use, as there was not any apparatus for it on Cape Pine. As pointed out in the article on Canadian Government Radio Direction Finding Stations, in Canadian Railway and Marine World for August, pg. 408, he was but 21 miles from Cape Race direction finding station when the ship struck, and it appears extraordinary that he had not asked that station for his location.

Green's Marine Directory of the Great Lakes for 1923, contains a complete alphabetical list of owners and managers of steamships, operating on the Great Lakes, both Canadian and U.S., as well as information concerning grain elevators, harbors, ore and coal docks, captains and chief engineers of the various ships, coastguard and radiotelegraph stations, and a number of historical facts and statistics relating to the various canals. It has numerous illustrations, including some of the various works under construction on the Welland ship canal. It is published by the Green's Marine Directory of the Great Lakes Co., Rockefeller Building, Cleveland, Ohio, at \$10, and can be obtained through Canadian Railway and Marine World.

Vancouver Grain Shipments.—During May and June, 2,157,100 Bush. of wheat were shipped from Vancouver, B.C., through the Dominion Government elevator, in 26 ocean ships, of which 8, with 1,162,082 bush., were for United Kingdom ports; 5 with 448,297 bush. for European ports; and 13 with 546,000 bush. for Japan.

Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties,—

Keynor-Bernon L. Collision.

Held at Montreal, July 31, before Capt. L. A. Demers, Dominion Wreck Commissioner, and Capts. C. Lapierre and D. M. Dickson, as nautical assessors, into the collision between Keystone Transports s.s. Keynor and the barge Bernon L. in tow of the tug Brant, in Welland Canal, June 30. Much contradictory evidence was given regarding the wind, the position of the s.s. Keynor, with respect to the bank, and her speed. She was bound from Montreal to Conneaut, Ohio, light, and while in the canal, about 400 yards from the air line bridge, heard a one blast signal from a tug with a barge in tow, and replied with the usual one blast. The captain of the Keynor stated that when about 500 ft. from the bridge, he brought the ship's bow close to the banks, her stern being 15 ft. clear, and the engine going very slowly ahead, pending the passing of the barge. He noticed that the tug's tow rope was slack, and the barge sheered, and struck his port bow with her port anchor, making a hole 10 ft. long in the bow. He immediately put full speed ahead and hard a starboard. No conversation on the subject took place, each ship proceeding on her way without comment. At the time of the casualty there was a light breeze from the southwest.

The captain of the tug Brant stated that at the time of the collision, a fresh breeze was blowing and his speed was about 2 to 3 miles an hour, with a current of from 1 to 2 miles. The barge's stern was about even with the bridge, and he ported his helm to check the sheer of the barge. The man in charge of the barge also stated that there was a fresh breeze and that before reaching the bridge he ported his helm and kept it so, until after the accident. The tug was for some time somewhat to his starboard, and the barge did not answer the helm.

The bridge tenders' evidence upset that of those on the Keynor, with respect to that ship's position at the bank, and placed the Keynor apparently on the right side of the middle line of the canal, and about 500 ft. from the bridge, which the court maintained was a safe position to await the passage of the tow. The full speed ahead order, with a starboard helm, was no doubt with a view to protect another part of the ship, when the collision became inevitable. The movement of the screw, and the influence of the rudder, would cause the head to swing towards the barge, and it was held that the Keynor's movements were practical and good seamanship. The injury was due to the fact that the impact took place when the barge began to swing back to her own side. The evidence showed that all those on the barge and the tug knew of the trend of the current, and the court was of the opinion that the tardy efforts made were due to an error of judgment and not to negligence. The court found that both the tug and the tow were responsible for the casualty, but the evidence did not disclose any negligence on the part of the tug's master, and therefore the certificate of Capt. Wm. Julian, of the tug Brant, was not dealt with, but he was cautioned, that, since it is known that ships will sheer in the vicinity of

bridges, to take timely action, to check such sheer. As no orders were issued from the tow to the barge, the barge must assume part of the responsibility. Capt. C. Ross of the s.s. Keynor, was exonerated.

Fanad Head-Kamouraska Collision.

Held at Montreal, July 4 and 5, by Capt. L. A. Demers, Dominion Wreck Commissioner, and Capts. H. E. Webb and D. M. Dickson, as nautical assessors, into the collision between the Head Line s.s. Fanad Head, and Kamouraska Shipping Co's s.s. Kamouraska, off Bicquette Island, in the St. Lawrence River, June 20. After hearing the evidence, the court found that the Kamouraska was alone to blame for the collision and suspended the certificate of Capt. David Morgan, no. 019,716, for two months from Aug. 2, and the license of pilot Hermenegilde Lachance for two months from July 13.

Loss of the s.s. Caraquet.

Held at Bermuda before a marine court of inquiry appointed by the Governor, consisting of W. A. V. Smith, President; N. H. Hutchings, and Capt. J. Davis, R.N.R., of the s.s. Fort George, to enquire into the loss of the Royal Mail Steam Packet Co's s.s. Caraquet, running between Halifax, N.S. and West Indies ports, which ran ashore about 12 miles from Hamilton, Bermuda, June 25. After hearing the evidence, the court decided that the error in the ship's position and her stranding, were due to a strong southwesterly current, and that the master, Capt. Hernandez, was not to blame, as he had taken every reasonable precaution. He was exonerated and his certificate returned to him.

Striking Sunken Wreck by s.s. Manoa.

Held at Quebec, Que., Aug. 8, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. Landry, harbor master, Quebec, and Capt. E. W. C. Beggs, of Manchester Liners' s.s. Manchester Producer, into the striking of the sunken wreck of Canadian Government Merchant Marine s.s. Canadian Recruit, by Canada Steamship Lines' s.s. Manoa, off Channel Patch, St. Lawrence River, July 22. Capt. J. P. Dufour, of the Manoa, stated that on July 22, the weather being fine, clear and calm, he left the bridge about noon for luncheon, advising the pilot he would relieve him later, and leaving the second officer on duty. While at luncheon he felt a roll of the ship, and immediately went to the bridge and put the telegraph standby, and found that the ship had veered over to southeast, and had struck the sunken wreck. He sounded the bells and about 20 minutes after found about 9 ft. of water, but the pumps being of sufficient power to control the inrush, the ship was not retarded on her trip to Charlottetown, where a survey was made. She then proceeded to St. John's, Nfld., where another survey was made and she was permitted to return to Quebec, where she was drydocked for repairs to her port bilges near hatch 1. His evidence was confirmed by the second officer. Louis Thivierge, pilot, who was ill and declined to assist in the investigation, but eventually attended the hearing, stated that he had no excuse to offer, and did not blame anyone else; that he knew of no reason why the court should not deal with his license, and asked it to accept his resignation. The court found that

the pilot was alone to blame for the casualty, and exonerated the captain and second officer. In view of the pilot's 35 years in the service, that his record has been far from good lately, he having had some very serious accidents during last year, and owing to the gravity of the offence in this instance, the court felt inclined to cancel his license as it did not consider it proper for the sake of the Pilots Association and in the general interests to have him retained in the ranks. As it had in mind the great hardship which would be experienced by the pilot, and owing to his state of health, which had deteriorated since his collisions last year, instead of cancelling his license, it accepted his resignation effective immediately, and in doing so showed great leniency, which, it stated, must not be taken as a precedent.

Public Works Marine Contracts Awarded.

The Dominion Public Works Department has awarded marine contracts as follows,—June 26, dredging mooring berths at Penetanguishene, Ont., to Light and Carson, Penetanguishene, class B at 35c a cub. yd. scow measure; June 27, docking and cleaning dredge no. 306 (Mastodon), to Wallace Shipbuilding and Drydock Co., North Vancouver, B.C., for \$13,435 and unit prices for sundry work; June 30, for dredging and cleaning up bed of St. Mary River, opposite Sault Ste. Marie, Ont., to Soo Dredging and Construction Co., Sault Ste. Marie, Ont., at \$130 day of 10 hr. for derrick, scow, diver, tug, etc.; July 3, dredging channel at Bowmanville, Ont., to Randolph Macdonald Co., Toronto, class A, \$5 a cub. yd., class B, 65c a cub. yd., place measure; July 4, dredging harbor and entrance piers at Port Hope, Ont., to Frontenac Dredging Co., Toronto, for class B, 65c a cub. yd., place measure; July 5, dredging channel at River St. Charles, Que., to Eastern Canada Stevedoring and General Contracting Co., Quebec, Que., class B 70c a cub. yd., place measure, and \$224.70 for pulling and cutting steel sheet piling; July 9, dredging channel and basin at St. Pierre les Becquets, Que., to E. Dufresne and A. Marchildon, Three Rivers, Que., class B, 40c a cub. yd., scow measure; July 9, dredging channel at Nicolet, Que., to E. Dufresne and A. Marchildon, Three Rivers, Que., at class B, 40c a cub. yd. scow measure; July 19, reconstruction of wharf at Haileybury, Ont., to T. P. Charleson, Ottawa, Ont., at unit prices; July 20, reconstruction of piers at Whitby, Ont., to T. P. Charleson, Ottawa, Ont., at unit prices.

British Steamships and Russia.—Moscow press dispatches state that disputes between the Soviet Volunteer Fleet and foreign shipping companies have been ended, and an agreement made which is decidedly in favor of the former. It is stated that a project has been approved for the formation of a mixed company to control shipping, with equality of control and participation of profits. The company will consist of the Soviet Volunteer Fleet and the White Star, Hamburg American, North German Lloyd, Red Star, Dominion, and Harriman Lines. It is stated that in the Russian steamship services, the C.P.R. and the Cunard Line have been eliminated.

Canadian Government Merchant Marine Operations, Etc.

Officers of Steamships.—The following chief engineers have been appointed since those mentioned in a previous issue: Canadian Adventurer, J. Stark; Canadian Forrester, W. Morrison; Canadian Sailor, J. M. Bowden; Sheba, T. Jones.

The s.s. Canadian Britisher loaded lumber during August, for India, following the plans for the extension of the British Columbia lumber trade to India. The cargo was taken on at Port Alberni and at Ogden pier, Victoria. Shipment at the latter point was made from barges, which had been loaded at the mills in the inner harbor.

British Columbia-Great Britain Service.—It is announced that commencing Oct. 20, a new steamship service will be inaugurated from Vancouver to Avonmouth, England. The s.s. Canadian Winner will be the first ship in the new service, and will be followed by Canadian Prospector, Canadian Seigneur, and three other ships not yet named. Two of the ships to be utilized will be transferred from the Atlantic service.

Sale of Ships.—As announced in previous issues, it was decided to dispose of 27 of the ships which it was considered inexpedient to continue to operate, and we have been advised that the steamships J. A. McKee and Thomas J. Drummond have been sold to N. M. Paterson and Co., Fort William, Ont., for use in the Great Lakes grain trade. The J. A. McKee was built at Newcastle-upon-Tyne, Eng., in 1908, for Western Steamship Co., and named after the President, since deceased. She was built to the highest classification of the British Corporation, and according to Board of Trade measurements was designed to carry 3,150 d.w. tons on 18½ ft. draft in salt water. Her chief dimensions are: Length b.p. 248 ft., breadth 43 ft. 1 in., depth 22 ft. 5 in. She has 7 cargo hatches, each 8 by 29 ft., and a large grain bin 14 x 34 x 7½ ft. The propelling machinery consists of triple expansion engines with cylinders 20½, 33 and 54 in. diam. by 36 in. stroke, supplied with steam by 2 cylindrical multi-tubular boilers 10½ ft. long by 13½ ft. diam., at 180 lb. working pressure. There are also 3 steam winches and 3 derricks, complete electric lighting installation and steam heating equipment. The Thomas J. Drummond was built at Dumbarton, Scotland, in 1910, for Algoma Central and Hudson Bay Ry., and named after the company's then President. Her dimensions are: length 248 ft., breadth 44 ft., depth 26 ft. She was built to British Corporation survey, with scantlings entitling her to trade in any waters, and was specially designed for carrying rails and bulk cargo. The hold space is divided into 3 compartments, and extra strength was introduced in the ship's construction where additional strains were likely to occur in her special trade. She has a cellular double bottom of extra depth over rule requirements, and fore and aft peak tanks are arranged to carry water ballast. The propelling machinery consists of triple expansion engines, with cylinders 20½, 33 and 54 in. diam. by 36 in. stroke, supplied with steam by 2 boilers 10½ by 14 ft., at a working pressure of 190 lb. The deck machinery includes winches, windlasses and capstan, and there is a complete electric lighting installation and steam heating equipment. These ships were bought by

the Dominion Government about seven years ago, and were operated by the Railways and Canals Department, and subsequently handed over to Canadian Government Merchant Marine. During the past year they have been operated under charter, by Great Lakes Transportation Co., Midland, Ont.

Mainly About Marine People.

Capt. G. C. Evans, O.B.E., formerly of the C.P.R. s.s. Metagama, was presented with a pair of binoculars at Liverpool, Eng., recently, by Capt. E. Elliott, of the Mercantile Marine Service Association, on behalf of the Newfoundland Government, in recognition of his rescue of the crew of the schooner Ida M. Cunningham, off the Nova Scotia coast, in February.

John Laxton, one of the Toronto Harbor Commissioners, died in Toronto, Aug. 15, aged 77.

Capt. Samuel McCaig, for many years captain of different upper lakes steamships, died at Toronto, Aug. 6, aged 74.

Stephen John Murphy, District Passenger Agent, Canada Steamship Lines, St. Louis, Mo., died suddenly, aged 60, from hemorrhage of the brain, at Toronto, Aug. 11, while on a visit to his doctor. He entered Niagara Navigation Co.'s service about 40 years ago at Toronto, and eventually became Travelling Passenger Agent there. On the taking over of the Niagara Navigation Co. by the Richelieu and Ontario Navigation Co., in Jan., 1913, he was appointed Travelling Passenger Agent and Excursion Agent, R. & O. N. Co., with jurisdiction over all Niagara Navigation Co.'s excursion business, and office at Toronto, and in Jan., 1914, on the formation of Canada Steamship Lines, Ltd., which took over all the R. & O. N. Co.'s properties, he was appointed Travelling and Excursion Agent, Toronto, which position he held until his appointment in 1921 as District Passenger Agent, C.S.L., St. Louis, Mo.

Senator L. C. Webster, President, Webster Steamship Co., has been elected a director of the Sun Life Assurance Co. of Canada.

Dominion Marine Association's Activities.

A meeting of the Dominion Marine Association's executive committee was held at Toronto, Aug. 15, when a full report regarding the Board of Grain Commissioners' meeting at Winnipeg on Aug. 7 was discussed. The difficulties caused by the new legislation in regard to grain freight rates on the Great Lakes were considered, also suggestions as how best to avoid the difficulties. The prepayment of freight, and demurrage requirements, rendered necessary by the new legislation were also discussed. The Association's members stated that they were complying with the law as best they could, and so far as is known, to the authorities' satisfaction. The action of U.S. shipowners, as mentioned on another page of this issue, has been confirmed by their representatives in Cleveland.

Upon a report that the Railways and Canals Department is considering alternative proposals for the improvement of the upper entrance of the Morrisburg Canal, one of which would move the lock farther down the canal, the other providing for excavation and alteration of the

northern bank of the entrance, it was resolved to recommend that, notwithstanding the probable heavy cost, the lock should be moved as the only certain improvement.

No action was taken regarding the new regulations published by order in council, June 19, regarding water systems on board ship, for drinking and culinary purposes.

It was decided to bring to the Board of Grain Commissioners' attention the Montreal Harbor Commissioners' refusal to make any reductions in the charge for unloading grain, in which there is a wide discrepancy between the cost to the Commissioners and the charge to the ship.

Among other subjects discussed were, aids to navigation, the recent meeting of the Lighthouse Board, casualties, and steamboat inspection.

Three Rivers Harbor Commissioners.—The incorporation of the Three Rivers Harbor Commissioners, with the limits of the district to be placed under their jurisdiction, was mentioned in our last issue. The commissioners appointed are: Robert F. Grant, President; Jos. L. Fortin and Norman Labelle.

It is strange that the sailors who proudly boast of having "a girl in every port" do not discover that the girl usually has "a lover on every ship."—Widow.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Bureau of Explosives—A. H. McMullen, Inspector, lines east of Port Arthur, 354 New Union Station, Toronto.—D. W. McNabb, Inspector, lines west of Port Arthur, C.P.R. station, Winnipeg.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Electric Railway Association—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke St., Montreal. Meetings at Montreal 2nd Tuesday, each month, except June, July and August, at 8.30 p.m.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 Canadian National Rys. General Office, Montreal.

Hydro Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorfner, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Bldg., Winnipeg, Man.

Transportation Meetings, Etc., in 1923.

The names of persons given below are those of the secretaries, unless stated otherwise:—

September.—Travelling Engineers' Association, Chicago, Ill. W. O. Thompson, 1177 East 98th Street, Cleveland, Ohio.

Sept. 4 to 6.—American Railway Association, Division 5—Mechanical, Equipment Painting Section, Hollenden Hotel, Cleveland, Ohio. V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

Sept. 4 to 7.—International Railway General Foreman's Association, Chicago, Ill. W. Hall, 1061 West Wabash Ave., Winona, Minn.

Sept. 17.—American Association of Passenger Traffic Officers, Montreal. W. C. Hope, Central Rd. of New Jersey, 143 Liberty Street, New York, N.Y.

Sept. 18 to 20.—Roadmasters' and Maintenance of Way Association, Chicago, Ill. P. J. McAndrews, Chicago & Northwestern Ry., Sterling, Ill.

Oct. 8 to 12.—American Electric Railway Association, Atlantic City, N.J. J. W. Welsh, 8 West 40th Street, New York, N.Y.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

Dec. 10 to 12.—American Association of Port Authorities, New Orleans, La. T. S. McChesney, New Orleans.

Trade and Supply Notes.

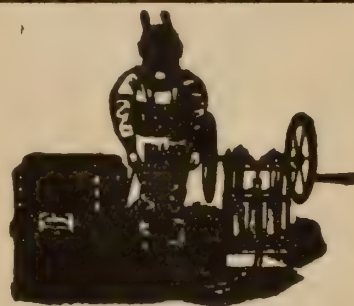
The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Flannery Bolt Co., Pittsburgh, Pa., has appointed W. S. Murrian Co., Knoxville, Tennessee, as Southern Representative.

Robert W. Hunt & Co., Ltd., Montreal, —Charles Warnock has been elected President, to succeed Robert W. Hunt, who died at his home in Chicago, Ill., July 11, aged 84 and was buried at Troy, N.Y. Mr. Hunt was born in Fallsington, Bucks, Pa., Dec. 9, 1838. He spent several years learning the practical side of iron making in John Burnish & Co's rolling mills at Pottsville, Pa., and later took a course in analytic chemistry in Booth, Garrett & Blair's laboratory. Upon the completion of this he entered the Cambria Iron Co.'s employ at Johnstown, Pa., and on Aug. 1, 1860, established for them the first laboratory in America as a direct part of an iron and steel organization. In the autumn of 1861, he entered the United States military service and was in command of Camp Curtin, at Harrisburg, Pa., with the rank of captain. Upon being mustered out of service, he returned to Cambria Iron Co's employ, and was sent to the works at Wyandotte, Mich., where experiments with the new Bessemer process of making steel were being conduct-

ed. He was placed in charge of the experimental works in July, 1865, and so continued until May, 1866, when the company transferred him to Johnstown to take charge of its steel business. It was at this mill later, and largely under Mr. Hunt's direction, that the first commercial order for steel rails ever made in America was rolled. Later, he assisted in designing and building the Cambria's Bessemer works and in 1873 he moved to Troy, N.Y., to become Superintendent of the Albion & Rensselaer Iron & Steel Co. During his years of active connection with steel rail manufacture he almost completely rebuilt this company's various works and he patented many details of iron and steel metallurgical processes and machinery, including, in conjunction with others, the first automatic rail mill tables. He left Troy, in 1888, for Chicago, and established the bureau of inspection, tests and consultation now known as the Robert W. Hunt Co. He was a member of numerous technical societies among others, American

Institute of Mining and Metallurgical Engineers, (honorary member and twice President); American Society of Mechanical Engineers, (honorary member and past President); American Society of Civil Engineers; Western Society of Engineers, (honorary member and past President); Canadian Society of Civil Engineers; Institution of Mechanical Engineers; Iron and Steel Institute of England; American Iron and Steel Institute; and American Society of Testing Materials, (honorary member and past President). In 1912 he was awarded the John Fritz medal for his contributions to the early development of the Bessemer processes, and in June of this year he was given the Western Society of Engineers' Washington award, in recognition of his achievements. He was for many years a trustee of the Rensselaer Polytechnic Institute and in 1916 received from it the honorary degree of Doctor of Engineering. He was married in 1866 to Miss Eleanor Clark, of Ecorse, Mich., who survives him.



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Distributors for: Lehigh Valley Coal Company's Anthracite

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES:

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number.
Minimum order—\$1.
Rates under other headings and for display advertisements on application.

For Sale

"We are now prepared and glad to furnish Stucki Side Bearings per Canadian Patents Nos. 187019 and 17080 upon request. Please call—The Holden Co., Ltd., Montreal, Canada."

Street Cars For Sale

The Commission offers for sale by tender complete street cars and trailers as listed below. Sealed tenders addressed to the Chairman, endorsed "Tender for Street Cars," will be received until noon of

September 21st, 1923

at the offices of the Commission, 35 Yonge St., Toronto, Ontario. A cheque for 5% of the amount of the offer, payable to "The Toronto Transportation Commission," drawn on and accepted by a Canadian chartered bank, must accompany each Tender. Tenders for the whole or a part of the lot offered will be received. The cars offered are now on the Commission's property in Toronto, and Tenders must be based on acceptance of the cars as and where they are at present located.

Rental of flat cars for the removal of the cars offered, from the Commission's property to steam railroad siding, may be arranged with the Commission by successful tenderers.

Payment shall be at par in Toronto, and full payment for cars bought shall be made to the Commission before the removal of any cars from the Commission's property.

Cars For Sale

- 53 Single-truck/cars complete with G.E.-67 motors;
- 8 Single-truck cars complete with G.E.-1000 motors;
- 9 Single-truck, double-end operation cars complete with G.E.-67 motors;
- 12 Double-truck (Brill Max.) cars complete with G.E.-67 motors;
- 47 Single-truck trailer cars complete.

A condition of the acceptance of any Tender is that the cars must be removed by the Tenderer from the property of the Commission within one calendar month from date of notification of acceptance by the Commission to the Tenderer by registered mail.

Copies of a detailed inventory may be secured and appointments to inspect may be arranged through the Executive Department, Public Utilities Building, 35 Yonge St., or the Rolling Stock Department, 4 Sherbourne St.

The highest or any tender not necessarily accepted.

H. H. COUZENS, General Manager.
TORONTO TRANSPORTATION COMMISSION.

Modern Marine Machinery
Automatic Steam Towing Machines, Ship Windlasses, Cargo and Deck Winches, Steam Capstans, Dock Gypsies, Steering Engines, Hydraulic Hoists, etc.

Manufactured by the
CORBET FOUNDRY & MACHINE CO., LIMITED, Owen Sound, Canada.

CANADIAN PACIFIC RAILWAY COMPANY. Dividend Notice.

At a meeting of the Board of Directors held today the following dividends were declared:—

On the Preference Stock, two per cent. for the half-year ended 30th June last;

On the Common Stock, two and one-half per cent. for the quarter ended 30th June last, from railway revenues and Special Income;

Both dividends are payable 1st October next to Stockholders of record at three p.m. on 31st August next.

By order of the Board,

ERNEST ALEXANDER,
Secretary.

Montreal, 13th August, 1923.

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W. P. Fraser,
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Tug Strathbell

Harbour Tug Service

Lighter Strathbuoy—Capacity, 700 tons.

Equipped for all kinds of Towing, Wrecking, Etc.

Sand and Gravel Supplied for Concrete Work, Rock and Soil Filling for Cribwork.

Dock Telephone, South 180; Head Office, South 2383.

JOHN BELL, General Manager, 509 Grain Exchange, Fort William, Ont.

WHEN DANGER LURKS IN SPASMODIC ADVERTISING

From Printer's Ink, New York.

The time is near at hand when general advertisers are going to recognize something about the scientific use of the principle of continuity in advertising that has been known for a considerable period by the retail mail-order people. By experiments, and also by experience that sometimes has been costly and bitter, the mail-order houses have established to their complete satisfaction the fact that it takes just about four years of continuous and cumulative effort to "make" an article in a selling way.

Through compiling and collating a long list of selling successes, they are able to demonstrate by average figures that an advertising campaign yields only about 40% of its selling power during the first year. In three more years, if the advertising has been kept up unabated, the cumulative effect is such that the additional 60% efficiency is brought about, thus getting the proposition fully under way.

And the interesting thing about it is that the principle works the other way also. If there is any lessening of effort it takes four years for the full effect to be felt. It used to be that the mail order people imagined they could safely shorten

advertising outlay here and there. They thought the momentum from past efforts would carry them over. Or, if it didn't, the resulting slackening of sales would be temporary. Conditions might be such that sales effort was not needed so far as present needs were concerned. There might be so much business that the effect of cutting the advertising down or out would not be noticed. It could be resumed when the need began to appear.

But they found this kind of business would not work at all for the reason that only about 40% of the result would be felt during the current year. For three more years the tearing down influence would continue, its maximum effect not appearing until the end of that time.

Advertising is not the magic thing some of its overly enthusiastic friends claim it is. If it were, then it could be turned on or shut off at will, just as steam is manipulated in a radiator, and the desired result gained each time. Advertising is an economic force that will yield proportionately to the correctness of its application. It has done wonderful things despite the abuse and mishandling it has received.

What A Dennisteel Cabinet Does for Your Office

THE Dennisteel Cabinet provides a place for stationery, supplies, books, etc., that keeps them from dust, vermin and fire danger.

It utilizes little space, yet provides plenty of room for the storing of the supplies required by most offices.

Above all, it promotes system. When you have your office books and supplies in a Dennisteel Cabinet, you know just where to lay hands on them.

Dennisteel Cabinets are a handsome article of office furniture. Shelving and pigeon-holing can be arranged for individual needs.

Standard finish of olive green. Can be furnished to harmonize with other furnishings if desired.

We also make Lockers.

Write for Folders

THE DENNIS WIRE AND IRON
WORKS CO. LIMITED
LONDON
CANADA



Fairmont

Section Motor Cars
Inspection Cars
Gang and Power Cars
Push Cars and Trailers

Wheels, Axles and Hyatt Roller
Bearings
Engines, Power Decks and Safety
Appliances for Motor Cars

SEND FOR DESCRIPTIVE BULLETINS

Fairmont Railway Motors, Inc., 39 Charlotte St., Winnipeg

BALL BEARING MOTORS AND RAILWAY MOTOR CARS

Engineers and Contractors

The Strauss Bascule Bridge Co.

Engineers & Patentees of Strauss Movable Bridges.

STRAUSS Bridges in CANADA number more than TWICE as many as all other Bascule and Lift Bridges COMBINED. Consult us before adopting plans or undertaking construction.

Main Office: 225 No. Michigan Avenue, Chicago.

Canadian Offices: 14 Windsor Hotel, Montreal; 103 London Bldg., Vancouver. New York Office: Knickerbocker Bldg.

VIVIAN T. BARTRAM

Railroad
and
Harbour Works

Head Office

Bank of Toronto Bldg. TORONTO

Sinclair Construction Co. Limited

Railway and General Contractors

HEAD OFFICE: EXCELSIOR LIFE BLDG.
Adelaide and Toronto Sts., Toronto

THE ARNOLD COMPANY

ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
Reports, Design and Construction
Complete Railway Shop and Terminal
Properties
Electrification of Steam Railroads.
CHICAGO

Traffic Service



GRIFFIN & GRIFFIN

P.O. Box 97, Windsor, Ont.

Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

Bureau of Canadian Information



THE Canadian Pacific Railway, through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In the Reference Libraries maintained at Montreal, Chicago and New York are complete data on

natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added. No charge or obligation attaches to this service. Business organizations are invited to make use of it.

Canadian Pacific Railway

Department of Colonization and Development

165 E. Ontario St. Chicago 355 Windsor Stn. Montreal C.P.R. Bldg., Madison Ave., at 44th St. New York

If you are in the market for

LOCOMOTIVES
CRANES
STEAM SHOVELS
DUMP CARS

PASSENGER OR
BAGGAGE CARS
FLATS, COAL OR
BOX CARS, ETC.

Give us an opportunity to quote you

CANADIAN EQUIPMENT CO., LIMITED

285 BEAVER HALL HILL - - - MONTREAL

Contractors', Industrial and Railroad Equipment

IMPERIAL BANK OF CANADA

Capital Authorized.....\$10,000,000
Capital Paid Up.....7,000,000
Reserve Fund.....7,500,000

Head Office - - - Toronto

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the world.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches Throughout the Dominion of Canada

Robert W. Hunt & Co., Limited

Consulting and Inspecting Engineers
Chemists and Metallurgists

Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement, Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

Resident inspectors at all important manufacturing centres in Canada, the United States and Great Britain.

REPORTS ON PROPERTIES AND PROCESSES.

Head Office and Laboratories:

McGill Building
Branches: TORONTO

VANCOUVER

MONTREAL, QUE.
LONDON, ENGLAND

CANADIAN BRONZE LIMITED

Passenger Service. BABBITS. Miscellaneous Brass Castings for Railroads. Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Works and Office: 69 Delorimer Avenue, MONTREAL, QUE.

You should certainly have a copy

This "Sales Inventory" of the Construction Equipment Accessories and supplies, which can be released from the Queenston-Chippawa Development, has been specially prepared solely as a service to—

**CONTRACTORS
ENGINEERS
MINES
QUARRIES**

**MUNICIPALITIES
BRIDGE BUILDERS
BRICK COMPANIES
SAND and GRAVEL
COMPANIES
RAILROADS, ETC.**

There is every possibility that you can save not only Money but valuable Time, by simply referring to this "Sales Inventory."

Your copy is available at our nearest office.

Also, our experience is at your disposal, if you have problems to solve. We have about everything imaginable in Construction Equipment and Supplies at extremely reasonable prices consistent upon the excellent condition.

LET US PROVE TO YOU JUST WHAT WE CAN DO

Hydro Salvage Syndicate

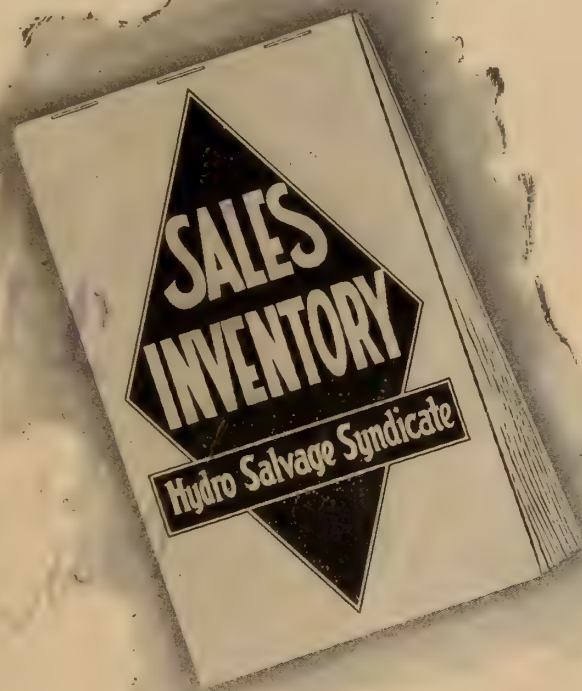
P.O. Box 109 Niagara Falls, Ont.

Operated by

**Canadian Equipment Co. Limited
Montreal**

and

**F. H. Hopkins & Co., Limited
Toronto and Montreal**





G-R-S Model 5 Switch Machine

The Model 5 Switch Machine is simple in design, substantial in construction, comparatively light in weight, yet powerful and dependable in operation.

It is low and narrow and is therefore very desirable in congested yards and terminals where space is limited. This feature also makes less likely the chance of damage by dragging equipment, snow ploughs, etc.

The machine is easy to install and maintain; no special tie framing neces-

sary. The mechanism is enclosed in a dust and weather proof case.

Furnished for either high or low voltage direct-current or 110-volts, alternating-current, 25 or 60 cycles.

The excellent service secured from the many Model 5 Switch Machines now in use is evidence that it has exceptional merit.

GENERAL RAILWAY SIGNAL COMPANY

LACHINE OF CANADA LIMITED QUEBEC



ELVIN Mechanical Stokers

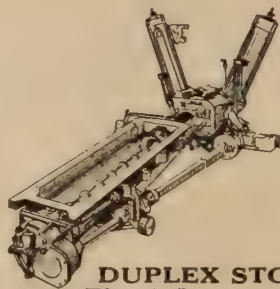
SIMPLICITY OF CONTROL
FUEL ECONOMY
LIGHT WEIGHT
A ROOMY CAB
NO TANK SLIDE PLATES

*Manufactured in Canada by
Montreal Locomotive Works, Ltd.*

for

The Elvin Mechanical Stoker Company
50 Church Street New York, N.Y.

DUPLEX LOCOMOTIVE STOKERS



DUPLEX STOKER
Fired Locomotives
Haul More Tonnage

**5,500 IN SERVICE
ON 79 RAILROADS**

in Canada and The United States

Manufactured in Canada by
Canadian Westinghouse Co., Ltd.

for

LOCOMOTIVE STOKER CO.
PITTSBURGH, PA., U.S.A.

Car Forgings—

FLAT HAMMER and
DROP FORGINGS

LOCOMOTIVE AXLES

TURNBUCKLES

JOURNAL BOX WEDGES

Prompt Deliveries.

Let us quote you on your requirements.

Canada Foundries & Forgings
Limited

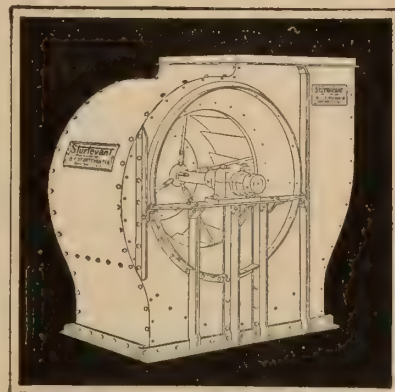
Welland

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Ontario

Railway and Marine Installations our Specialty



Sturtevant engineers have had distinctive success in designing efficient, economical Heating and Ventilating equipment for railway and marine use.

We will be glad to furnish records of such installations, and also a copy of our folder 608 containing valuable information on this subject.

*Just address
nearest office*

B. F. STURTEVANT CO.
of Canada, Ltd.

Montreal
Galt

Toronto
Winnipeg



DUNLOP Rubber Products

BELTING HOSE PACKING

Air Brake and Air Signal Hose

General Rubber Supplies for Railways



ALGOMA STEEL CORPORATION, Ltd.

SAULT STE. MARIE, ONTARIO

• *Manufacturers of*

OPEN HEARTH STEEL RAILS
ANGLE BARS and TIE PLATES
STRUCTURAL SHAPES
MERCHANT BARS

BLOOMS, BILLETS, SLABS
"ALGOMA" PIG IRON
BASIC, MALLEABLE, FOUNDRY

SALES OFFICES

SAULT STE. MARIE, ONT.

J. D. Gray, Manager of Sales

MONTREAL: MCGILL BUILDING

G. A. Irwin, Dist. Sales Manager

TORONTO: BANK OF HAMILTON BUILDING

R. E. Nicholson, Dist. Sales Manager

RAMAPO

AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps
Double Shoulder Solid Bottom
Switch Riser Plates*

SWITCHES

FROGS AND CROSSINGS

MANGANESE TRACK WORK A SPECIALTY



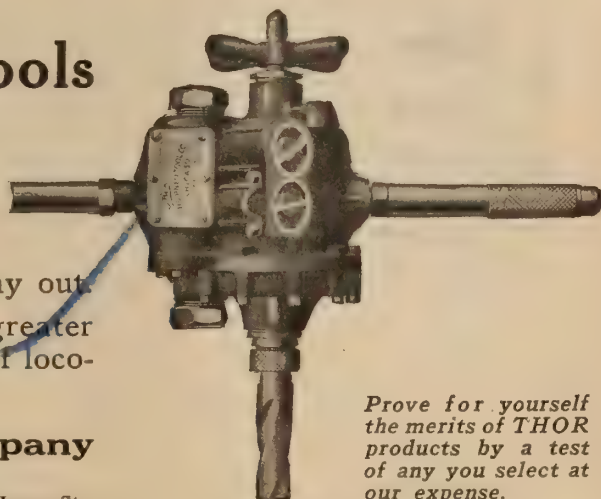
CANADIAN RAMAPO IRON WORKS, LIMITED
NIAGARA FALLS, ONT., CANADA

Thor Pneumatic Tools

For railway construction and repair shops, pneumatic tools of highest grade and quality are needed. Thor Pneumatic Tools are just such tools, ever at your service, day in and day out. No class of tools made are capable of doing a greater variety of work in the construction and repair of locomotives and cars.

Independent Pneumatic Tool Company
334 St. James Street, Montreal

Toronto: 68 Temperance St.; Winnipeg: Galt Bldg.; Vancouver: 1142 Homer St.;
United Kingdom: No. 40 Broadway, Westminster, London, S.W. 1.



*Prove for yourself
the merits of THOR
products by a test
of any you select at
our expense.*

JNO. E. RUSSELL

Harbor Building

- -

TORONTO

CONTRACTOR FOR HARBOR IMPROVEMENTS,
SALVAGE, TOWING AND
LIGHTERING

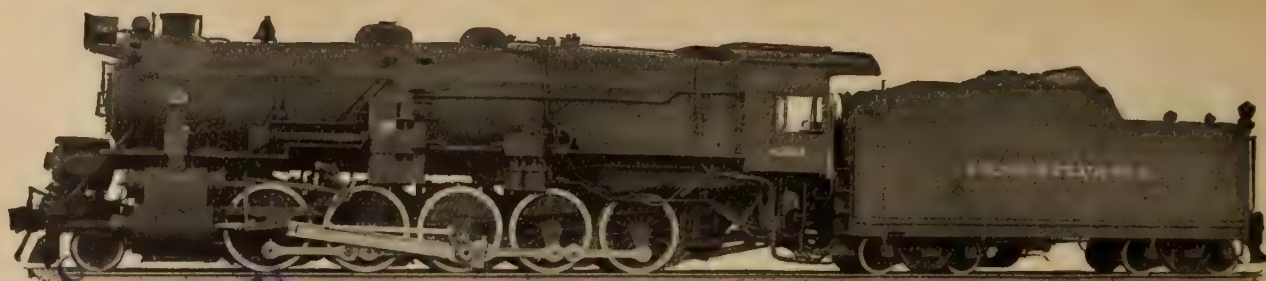
Tugs, Lighters, Divers, Diving Gear and Steam Pumps
at all times available.

CANADIAN **VICKERS** LIMITED

SHIPBUILDERS, ENGINEERS, BOILERMAKERS and REPAIRERS
MONTREAL

Boilers—All types.
Tanks and Special Plate Work.

Low Prices—Prompt Deliveries.



One of 475 Heavy Freight Locomotives now being built for the Pennsylvania System

We are prepared to build locomotives of all types and sizes, and to meet the requirements, not only of the great Trunk Lines, but also of shorter railroads, contractors, industrial plants, and all those requiring railroad motive power.

The Baldwin Locomotive Works - Philadelphia, Pa.

MOHAIR PLUSH BAY STATE BRAND

All standard grades for Car Seats, Furniture,
Hotel & Steamship Upholstering.

Plain, Frieze & Figured—Friezettes—Linen & Cotton Backs

Used by leading Railroads in Canada and U.S. for 30 years

MASSACHUSETTS MOHAIR PLUSH CO.

200 Devonshire St., Boston, Mass., U.S.A.

For the Good of the Service Use—

NATIONAL STEEL TRAP DOOR AND LIFTING DEVICE
RESISTO and TUCORK INSULATION
FLEXOLITH COMPOSITION FLOORING
TUCO PRESERVATIVE FOR FLOOR PLATES
NATIONAL STANDARD ROOFING
IMPERIAL CAR WINDOW SCREENS

TUCO PRODUCTS CORPORATION, 30 Church St., New York City

CANADIAN OFFICE:

Consolidated Equipment Co., 263 St. James Street, Montreal

Canada Iron Foundries, Limited

Chilled Tread Cast Iron Car Wheels for All Services
Cast Iron Water, Gas and Culvert Pipe,
Flanged Pipe and Specials
Railway Castings

HEAD OFFICE

Mark Fisher Building

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-

-

Montreal



MADE IN
CANADA

Feed Water Heating

FOR

More Effective Manufacture of Steam

Just as the development of the use of steam has come to us by steps and stages—so also is it necessary that the manufacture of steam be greatly improved. Economical reasons demand it.

When feed water is heated by heat otherwise wasted, the first stage is accomplished and the steam generating plants made more effective.

In addition to the mere gain of heat otherwise lost, there is a gain in efficiency of the boiler fed with hot water, because a part of the duty of the boiler is reverted to evaporating the water otherwise spent in raising its temperature.

Elesco Feed Water Heaters

Built by

The Superheater Company, Limited

Transportation Bldg., Montreal

Works, Sherbrooke, Quebec

A WHITE LOCOMOTIVE?

Hardly—but clean, bright, black is regular. Our new Jet Black is free flowing — elastic — and it wears. There's real economy in this new Jet Black made by

BERRY BROTHERS
World's Largest Makers
Varnishes and Paint Specialties

WALKERVILLE

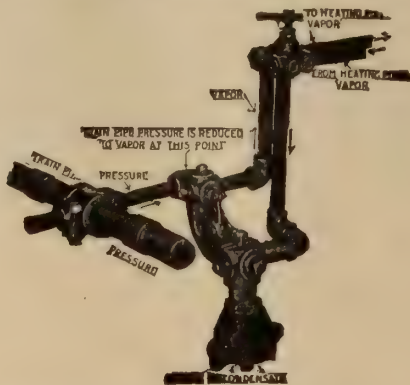
MONTREAL

TORONTO

VAPOR CAR HEATING CO. of Canada, Limited

MADE
IN
CANADA

AT



THE
VAPOR SYSTEM
OF
CAR HEATING

61 DALHOUSIE STREET

MONTREAL, QUEBEC

F. A. PURDY, SALES REPRESENTATIVE.

L. GERRARD SMITH, ASS'T. TREASURER.

BARBER

LATERAL MOTION TRUCK DEVICE
ROLLER SIDE BEARINGS—PASSENGER, FREIGHT, LOCOMOTIVES
70-TON DOUBLE ACTION TRUCK, LATERAL AND RADIAL MOTION
SPECIAL ROLLER BEARING CENTER PLATES
LATERAL MOTION ROLLER BEARING JOURNAL BOXES
TILTING BRAKE STAFF—GIVES CLEAR DECK ON FLAT CARS

For Detailed Information and Drawings Apply

UNITED STATES:

STANDARD CAR TRUCK COMPANY

1522 McCormick Building,
Chicago, Illinois.

CANADA:

CANADIAN APPLIANCE CO., LTD.

708 New Birks Building,
Montreal, Quebec.

When You Require

STEAM PLANT EQUIPMENT

Boilers, Superheaters, Stokers, Conveyors, Electric
Cranes or any Accessories.

—WRITE—

BABCOCK & WILCOX, LIMITED

Head Office for Canada:
St. Henry, MONTREAL

Toronto Office:
Bank of Hamilton Building

The Rail Joint Company of Canada, Limited

McGill Building, MONTREAL

Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

PROTECTED BY PATENTS

Grand Prize, San Francisco, 1915

Chicago Railway Equipment Co.

**BRAKE BEAMS AND
BRAKE BEAM SUPPORTS**

Chicago

Represented in Canada by the
Canadian Appliance Company, Ltd., 708 New Birks Building
Montreal, Quebec



**Wilson
"Color-Tip"
Welding Metals
and
Arc Welding
Equipment**



G. D. PETERS & CO., LIMITED

New Birks Bldg. - Montreal

DOMINION BRIDGE COMPANY, LIMITED

MONTREAL, P.Q., CANADA

Engineers, Manufacturers and Erectors of Steel Structures

Railway and Highway Bridges; Swing and Bascule Spans; Buildings of all kinds; Hemispherical Bottom and other tanks; Transmission Poles and Towers; Riveted Pipe; Caissons; Barges; Turntables; Electric and Hand Power Cranes; Hoisting Appliances; Lift Locks; Hydraulic Regulating Gates, Etc. Gear Cutting and General Machine Work.

Main Office and Works:

LACHINE LOCKS, P.Q. P.O. Address—MONTREAL

Cable Address: "DOMINION"

BRANCH WORKS:

Toronto, Ont. Winnipeg, Man.
Ottawa, Ont.

SALES OFFICES:

Montreal, P.Q. Toronto, Ont. Winnipeg, Man.
Ottawa, Ont. Regina, Sask. Edmonton, Alta.
Vancouver, B.C.

"STERLING"



HACK SAW BLADES

Webster's Dictionary interprets the word "STERLING" as meaning pure, unadulterated and genuine.

These words apply to the Hack Saw Blade represented on this page. They are good. Give them a trial; they may help you out of your Hack Saw troubles.

If you need assistance or advice in this line, write the manufacturer.

Manufactured by

Diamond Saw and Stamping Works, 357 Seventh St., Buffalo, N.Y., U.S.A.

"The Trackless Train"



method of handling freight is saving
THOUSANDS OF DOLLARS

annually in Freight Sheds, Express Depots, and
Steamship Docks.

We will be glad to send you literature on
request.

Taylor & Arnold Engineering Co.

Limited

100th Ann St.

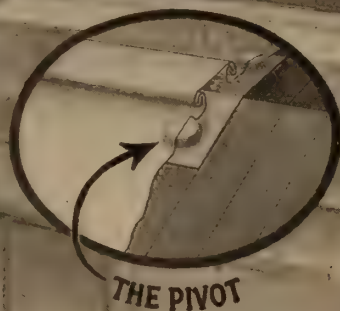
Montreal

Canadian Manufacturers of

"MERCURY" Tractors and Trailers

MURPHY XLA FLEXIBLE ROOFS

DESIGNED
FOR ALL CARS



The roof with
the distinguish-
ing pivot.

Made by

P. H. MURPHY CO.

of Canada, Limited

10 Cathcart St., Montreal

*Also makers of Z. U.
Steel Carlines*

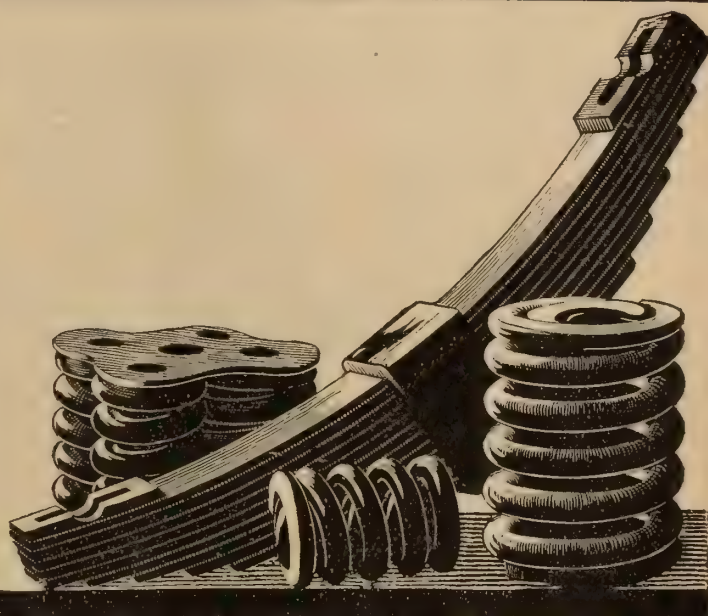
COGHLIN Springs

All Types
—For Every Purpose

Manufacturers of Springs since 1869

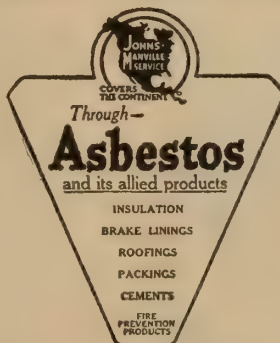
B.J. COGHLIN Co
Limited
MONTREAL

Toronto: Harvard Turnbull & Co. Winnipeg: Filer-Smith
Machinery Co., Ltd. Vancouver: Gordon & Belyea, Ltd.



Johns-Manville Railroad Supplies

Asbestos Packings
Asbestos Protected Metal
Asbestos Roofing
Asbestos Shingles
Ebony and Transite Asbestos Wood
Expander Rings for Air Brake Cylinders
High Temperature Cements
Industrial Flooring
Locomotive Lagging
Locomotive Packings, including Air
Pump, Throttle, Valve Stem, Cab
Cock, Gaskets, Etc.



Locomotive Spiral Pipe Covering
No. 82 Moulded Packing Cups and
Expander Rings for Power Reverse
Gear Cylinders.
Orangeburg Fibre Conduit
Orangeburg Underfloor Duct System
Pipe Covering for all classes of service
Refrigerator Car Insulation
Steam and Radiator Traps
Steel Passenger Car Insulation
Transite Asbestos Smoke Jacks
Transite Corrugated Asbestos Roofing
and Siding.

Canadian Johns-Manville Co., Limited
TORONTO MONTREAL WINNIPEG
VANCOUVER OTTAWA

YOU can effect a **SAVING** in Lubrication costs by using **TULC** for it will give results not to be obtained by the use of any other Lubricant.

**T
U
L
C**

Will not splash over commutators.
Will not cause short circuit or burnt armatures.
Will not leak or rot fields.
Will so save in brass and babbitt to pay for itself.
Will only feed sufficient to lubricate properly.
Will save dripping losses.
Will make axles and journals last longer.
Will cut down a lot of pull-ins.
Will eliminate hot boxes and cut axles.
Will be sent for trial on request.

The Universal Lubricating Company

Offices: Schofield Building

CLEVELAND, OHIO

Works: Sweeney Avenue

M. C. McElligott, Canadian Representative - Preston, Ontario

MACHINISTS' SUPPLIES

Various Kinds of Iron and Steel

We are prepared to make Prompt Delivery on:—



Hacksaw Blades
Machine Screws
Cap Screws
Drills (carbon and high speed)
Machinists' Tools
Files
Etc.,
Etc.

Bar Iron
Sheet Iron (black or galvanized)
Mild Steel
Machine Steel
Cast Steel
High Speed Steel
Carbon Steel
Cold Rolled Steel



Let us know your requirements

RICE LEWIS & SON, LIMITED

Established 1847

TORONTO

19 Victoria St.



ENGINEERS, MANUFACTURERS
AND ERECTORS OF

**STEEL RAILWAY BRIDGES
STEEL HIGHWAY BRIDGES
STEEL TURNABLES
STEEL STRUCTURES OF
EVERY DESCRIPTION**

YOUR INQUIRIES WILL RECEIVE PROMPT ATTENTION

THE HAMILTON BRIDGE WORKS COMPANY

Head Office and Works:
HAMILTON, CANADA

LIMITED

Branch Office:
General Assurance Bldg., Toronto

THE BUYERS' GUIDE

Of the Manufacturers of and Dealers in Steam and Electric Railway, Marine and Shipbuilding, and Railway and Canal Contractor's Supplies

ADJUSTERS, SLACK

Railway & Power Eng. Corp.

AIR BRAKES AND FITTINGS

Canadian General Electric Co.
Canadian Westinghouse Co.

AIR WASHERS

B. F. Sturtevant Co.

ANCHOR BOLTS

Steel Co. of Canada

ANCHORS AND CHAINS

American Steel Foundries

ANCHORS AND RODS, GUY

B. J. Coghlin Co.

ANGLE BARS

British Empire Steel Corp.

Steel Co. of Canada

ARMATURE COILS

Railway & Power Eng. Corp.

ASBESTOS

Canadian Johns-Manville Co.

AXLES

British Empire Steel Corp.

B. J. Coghlin Co.

Railway & Power Eng. Corp.

Steel Co. of Canada.

BATTERIES, SIGNAL & TRACK

Canadian National Carbon Co.

BATTERIES, STORAGE

Canadian General Electric Co.

Canadian National Carbon Co.

BATTERY SUPPLIES

Canadian National Carbon Co.

BEACONS

Safety Car Heating & Lighting Co.

BEARINGS, JOURNAL

Canadian Bronze Ltd.

BEARINGS, JOURNAL, ROLLER

Lyman Tube & Supply Co.

Stafford Roller Bearing Car Truck Corp.

BEARINGS, SIDE

W. H. Miner.

Pratt and Letchworth Co.

Standard Car Truck Co.

BELTING

Dunlop Tire and Rubber Goods Co.

BLOWERS

B. F. Sturtevant Co.

BOILER COMPOUND

Dearborn Chemical Co.

BOILERS, MARINE, PORTABLE & STATIONARY

Babcock & Wilcox.

F. H. Hopkins & Co.

BOLSTERS, TRUCK

American Steel Foundries.

Canadian Car and Foundry Co.

BOLTS

Steel Co. of Canada.

BOLTS, EYE

Steel Co. of Canada.

BOLTS, TRACK

British Empire Steel Corp.

F. H. Hopkins & Co.

Steel Co. of Canada.

BORERS, CAR WHEEL

Canada Machinery Corporation.

BRAKE ATTACHMENTS, HAND

Webb G. Krauser.

BRAKE BEAM SUPPORTS

Chicago Railway Equipment Co.

BRAKE BEAMS

American Steel Foundries.

Buffalo Brake Beam Co.

Canadian Car and Foundry Co.

Chicago Railway Equipment Co.

BRAKE HEADS

Chicago Railway Equipment Co.

Pratt and Letchworth Co.

BRAKE SHOES

Canada Iron Foundries.

Dominion Brakeshoe Co.

Railway & Power Eng. Corp.

BRAKE STAFFS

Standard Car Truck Co.

BRAKES, GEARED, HAND

Lyman Tube and Supply Co.

BRIDGES

Dominion Bridge Co.

Hamilton Bridge Works Co.

Strauss Bascule Bridge Co.

BRUSHES, CARBON, GRAPHITE, & METAL COMPOSITION

Canadian National Carbon Co.

Lyman Tube and Supply Co.

Railway & Power Eng. Corp.

BUCKETS, CLAM SHELL & ORANGE PEEL

Brown Hoisting Machinery Co.

BUCKETS, COAL, ORE AND CONCRETE

Brown Hoisting Machinery Co.

F. H. Hopkins & Co.

BUILDINGS, STEEL

Dominion Bridge Co.

Hamilton Bridge Works Co.

BUMPING POSTS

F. H. Hopkins & Co.

CABLE WIRE

B. Greening Wire Co.

CABLES, TELEGRAPH, TELEPHONE AND POWER

Northern Electric Co.

Standard Und. Cable Co. of Can.

CAPSTANS

Dake Engine Co.

CARBON SPECIALTIES

Canadian National Carbon Co.

CARBONS, ARC LAMP, FLARE ARC AND PHOTOGRAPHIC

Canadian National Carbon Co.

CAR, ELECTRIC, ROUTE SIGNS

Lyman Tube and Supply Co.

CARLINES

P. H. Murphy Co. of Canada

CARS

Canadian Equipment Co.

Hart-Otis Car Co.

CARS, DUMP

Canadian Car & Foundry Co.

Canadian Equipment Co.

Hart-Otis Car Co.

F. H. Hopkins & Co.

CARS, ELECTRIC

Canadian Car & Foundry Co.

CARS, FREIGHT

Canadian Car & Foundry Co.

CARS, INDUSTRIAL

Canadian Equipment Co.

CARS, PASSENGER

Canadian Car & Foundry Co.

CARS, SELF-PROPELLED, GASOLINE

Ledoux, Jennings, Ltd.

CASTINGS, BRASS AND BRONZE

Canada Iron Foundries

Canadian Bronze, Limited.

CASTINGS, CAR

Canadian Steel Foundries, Ltd.

CASTINGS, FERRO ALLOY

Canadian Steel Foundries, Ltd.

CASTINGS, IRON

American Steel Foundries.

Canada Iron Foundries.

Dominion Brakeshoe Co.

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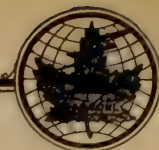
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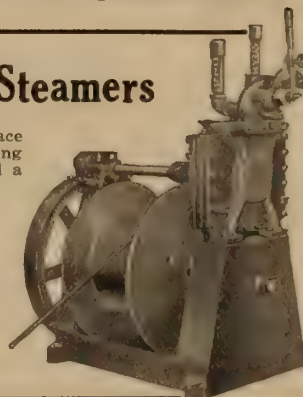
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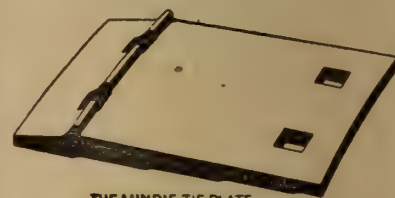
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Malleable Castings High Grade Material First Class Service Galt Malleable Iron Co., Limited - GALT, ONT.

MONCRIEFF'S

Moncrieff's "Unific" is not a cheap glass. But because it outlasts many ordinary glasses, the "Unific" is economical. British made.

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"UNIFIC" WATER GAUGE



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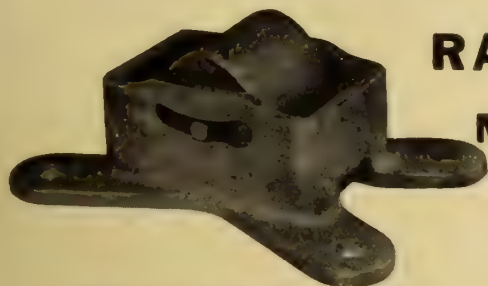
The "Unific" does not readily corrode. It resists extreme changes of temperature and withstands the highest working steam pressure.

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HAND
BRAKES**

**EFFICIENT
FRICTION
DRAFT
GEARS**



**W. H. MINER
CHICAGO**

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FOR THE PRINCIPAL PARTS OF A LOCOMOTIVE

- | | |
|---------------------------|-----------------------------|
| 1 Cylinder Bushing | 6 Valve Bull Rings |
| 2 Cylinder Packing | 7 Crosshead Shoes |
| 3 Piston—Piston Bull Ring | 8 Knuckle Pin Bushings |
| 4 Valve Bushings | 9 Pedestal Shoes and Wedges |
| 5 Valve Packing | 10 Driving Boxes |

Cylinder Packing

of Hunt-Spiller Gun Iron when properly designed and applied will produce cylinder conditions that will be exceedingly satisfactory.

Made only by

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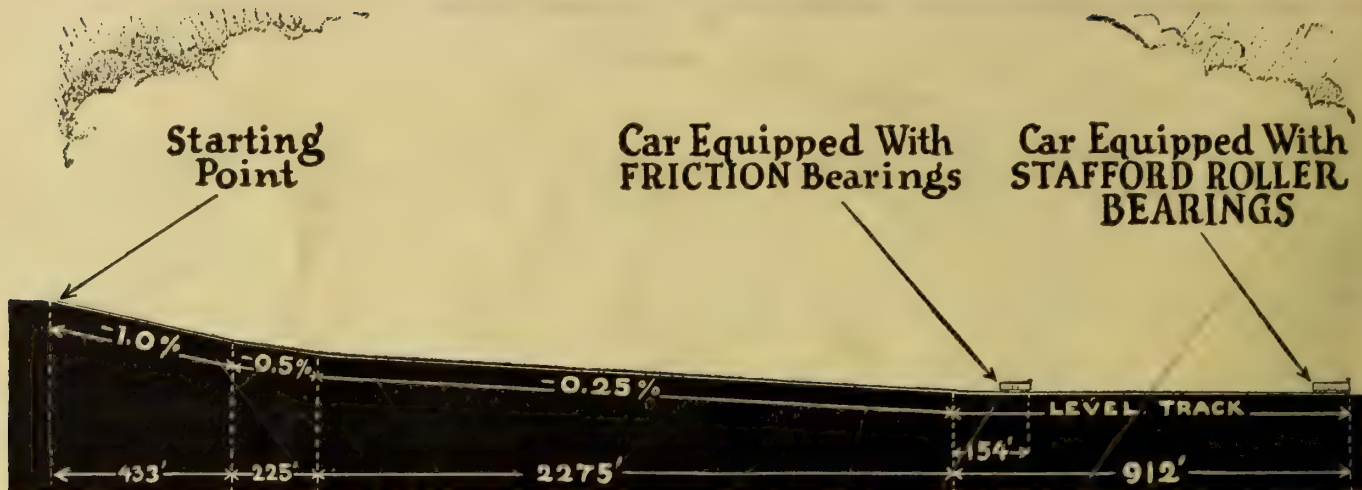
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A Drag On Earning Power



Railroad men realize that the big drag in a tonnage train is the Drag of Journal Resistance.

To overcome this resistance requires the use of large additional amounts of coal, and the consumption of countless gallons of oil, pounds of waste and other journal box materials.

Thus the Drag of Journal Friction produces a big drag on Earning Power.

Proof that Stafford Roller Bearings eliminate this big Drag was shown in the test conducted by the Michigan Central Railroad.

The Stafford-equipped car ran over 6 times as far on level track and started alone on the 1% grade, while the Friction Bearing car at the same point had to be given a starting push by the locomotive.

Stafford Roller Bearings—
guaranteed three years

STAFFORD ROLLER BEARING CAR TRUCK CORPORATION

LAWTON MICHIGAN

"IT ROLLS THE FRICTION AWAY"

Canadian Railway AND Marine World

Founded in 1898 by Acton Burrows.

Number 308.
Index to contents pg. 475.

TORONTO, CANADA, OCTOBER, 1923

See page 475 for
Subscription Rates.

GALENA OILS

The Worlds Best Railway Lubricants

Not only better service
—but lower cost

Were every steam and electric railway in Canada to specify Galena Lubrication for its equipment, with the sole viewpoint of securing *maximum service efficiency*, each and every one would be displaying the soundest of business judgment, amply justified by the matchless performance records it has established, wherever used.

But *cost of lubrication* is also a factor of extreme importance. It is an entirely different quantity than *cost of oils*. Lubricants that are incapable of performing the functions required to produce efficient service cost too much at any price. Economy is often sought, but never realized, through the purchase of cheap oils.

The **ECONOMY** of Galena lubrication is not an intangible quantity—not a vague claim based on a “best is the cheapest” hypothesis. It shows plainly and clearly in the operating records kept by every railway using Galena Oils—in mileage accomplished, in reduction of repairs and time losses, in preservation and longer life of equipment. Whenever and wherever comparisons of service received from lubricants have been made on this most equitable basis, the actual economy of Galena Oils is evident.

*“More miles to the pint;
Better service to the mile!”*



Galena-Signal Oil Company
— of Canada, Limited —

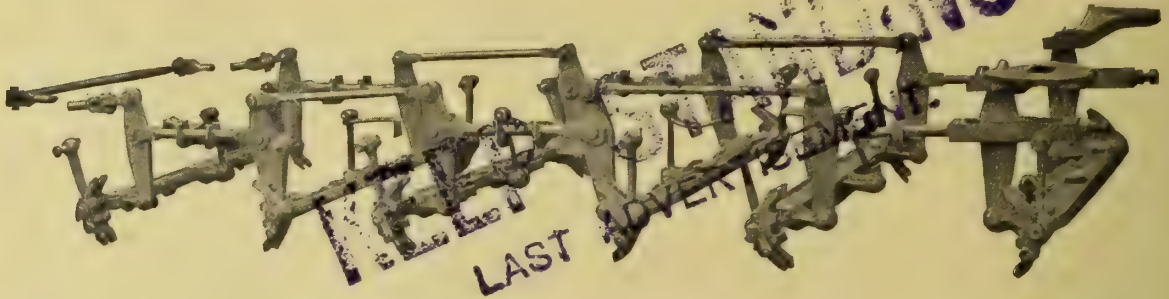
TORONTO
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AMERICAN STEEL FOUNDRIES

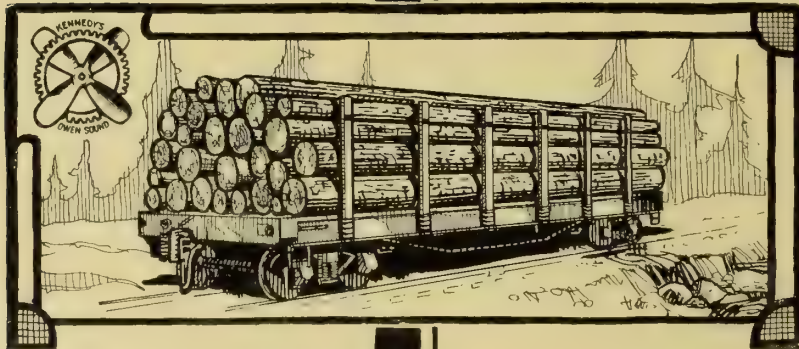
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Van Donk Stake Pockets

The Latest—

No waste stakes. No trouble. Absolute safety as the pockets may be opened from side of the car opposite the operating shaft. The cost is low—the saving tremendous. Get the particulars to-day.

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Service shows the most successful car roof to be the

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which made possible the following specifications:

No. 1. That should be weather-proof under all conditions, also rust-proof, fire-proof and burglar-proof.

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No. 3. That should be of low deadweight and give the car a low center of gravity.

No. 4. That should lessen strain on the superstructure of the car when the car is in motion.

No. 5. That should strengthen, rather than detract, from the strength of the car frame.

No. 6. That should give the greatest interior capacity and the lowest clearance limits.

No. 7. That should be flexible enough to conform to every service condition of the car.

No. 8. That should be possible to use again on the same or another car, even in case of partial or total destruction of the rest of the car by fire or wreck.

No. 9. That should not require roofing boards.

No. 10. That should be of low first cost.

No. 11. That should permit of inspection on the part of any shipper by merely closing the doors of the car and if no rays of light are seen through the roof, the shipper to consider it a weather-tight roof.

No. 12. That should be so constructed that the carlines, purlines and ridge, tie the sides and ends of the car together firmly, so that the weather-proof roof has only the one duty of protecting the contents of the car from the elements.

HUTCHINS CAR ROOFING CO., LTD.

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If you are a Contractor—Engineer—Bridge Builder—Quarryman—or if you operate Mines—Brickyards—Railroads—Sand or Gravel Companies—we want you to write us at once, because we will save you time and money.

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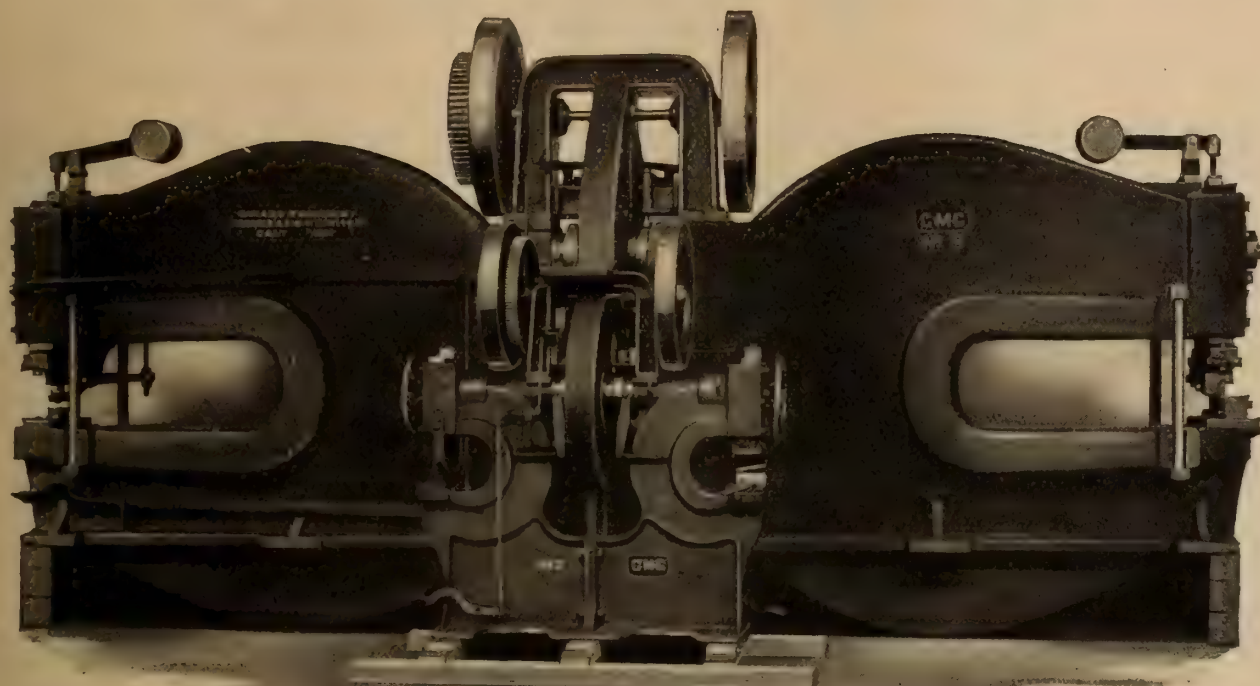
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Canadian National Railways



Punches and Shears



No. 5 and No. 2 Double End Punches and Shears

This Company has been building Punches and Shears for twenty-five years, and the benefit of this experience is offered the trade in heavy, rugged Machines with ample strength and solidity to endure the most severe service and strong but convenient mechanism which will speed up the rate of production.

C.M.C. Punches and Shears are built single or double end, for belt or motor drive, ranging in weight from one to twenty tons and in capacity from $\frac{1}{2}$ " hole in $\frac{1}{2}$ " plate to 2" hole in 2" plate.

We can fill your needs. Prices and full information gladly sent upon request.

CANADA MACHINERY CORPORATION

LIMITED

GALT - ONTARIO

Manufacturers of Iron and Woodworking Machine Tools

Toronto Sales Office

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HIGHEST QUALITY
BASIC OPEN-HEARTH STEEL

CASTINGS



CAST - STEEL PLUNGER CONE
FOR TURBINE VALVE

Diameter - 13ft. 11in. Height - 7ft. 2in.

Weight 25,455 lbs.



for every purpose for which they are required.

From 1 lb. to 100,000 lbs. each.

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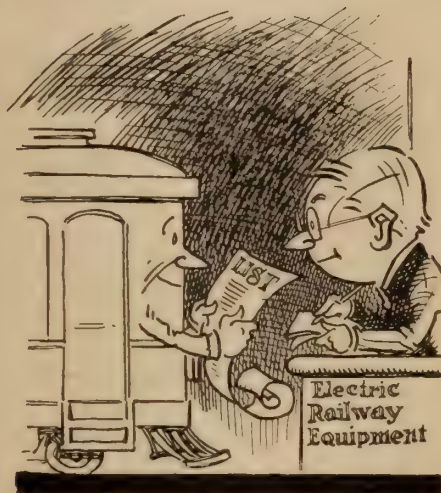
General Offices:

307 CRAIG STREET W.

MONTREAL

List of Supplies purchased by an Electric Railway

Axle Bearings.
Armature Bearings.
Augers.
Bar Iron.
Bar Steel.
Bar Copper.
Bolts, Machine.
Bolts, Carriage.
Bolts, Finished.
Brake Shoes.
Coal.
Conductor's Patches.
Coke for Forges.
Copper Bonds.
Cast Iron Castings.
Cotter Pins.
Car Trolley Poles.
Car Wheels.
Car Trucks.
Car Axles.
Corn Brooms.
Crowbars.
Emery Wheels.
Emery Cloth.
Forges.
First Aid Equipment.
Galvanized Pails.
Galvanized Coal Hods.
Galvanized Watering
Cans.
Generators and Parts.
Hard Fibre.
Hammers.
Insulating Papers.
Lead Covered Wire.
Linen and Cotton.
Life Guards.
Leather Belt Cord.
Leather Belting.
Linen and Cotton Hose.
Lamps.
Lamp Sockets.
Magnet Wire.
Malleable Castings.
Metal-working Tools.
Pipe and Fittings.
Paint Shop Equipment.
Paint Brushes.
Paints and Oils.
Printing.
Railway Bolts.
Railway Varnishes.
Railway Insulating
Varnish.
Repair Shop Equip-
ment.
Rubber Packing.



WHAT CANADA'S ELECTRIC RAILWAYS ARE BUYING

One might think, unthinkingly, that, when an electric railway line was built and the cars set on its tracks, there was little for the operating company to buy.

Yet here is a list of 100 things or groups of things that operating companies buy—

Then, add to these the still large list of things that railway contractors and car builders and power house engineers must buy when building and equipping new lines.

And remember, that more miles of new electric railway, more power houses and more cars are being built each year; and that Canada is really only in its infancy in urban and interurban development; with big things to come in the future.

And then make note of the fact that

Canadian Railway and Marine World

is the only publication in Canada appealing specifically to both the building and the operating electric railway interests.

CANADIAN RAILWAY AND MARINE WORLD

Toronto Member of Canada
Audit Bureau of Circulations,
Associated Business Papers,
Business Newspapers Association of Canada,
Canadian National Newspapers and Periodicals
Association,
Canadian Press Association.

List of Supplies purchased by an Electric Railway

Railway Springs.
Rails and Fish Plates.
Railway Ties.
Railway Spikes.
Rubber Covered Wire.
Rubber Covered Ropes.
Railway Motors.
Railway Gears.
Railway Pinions.
Railway Motor
Frames.
Railway Gear Cases.
Railway Controllers.
Railway Trolley
Wheels.
Railway Harps,
Trolley.
Railway Trolley
Bushings.
Railway Commuta-
tors.
Railway Fields.
Railway Armatures.
Railway Brush Hold-
ers.
Railway Trolley Rope.
Railway Car Heaters.
Rattan Seating.
Rattan for Sweeper
Brooms.
Rubber Belting.
Rubber Hose.
Saws.
Screws, Wood.
Screws, Brass.
Screws, Set.
Screws, Machine.
Screws, Cap.
Scythes.
Steel Castings.
Sand Paper.
Spray Cans for Paint.
Street Trolley Poles.
Tamps.
Track Bolts.
Trolley Wire.
Tape.
Trolley Catchers.
Trolley Stands.
Trolley Stand Bases.
Uniform Caps.
Uniform Clothing.
Uniform Buttons.
Wrenches.
Washers, Iron.
Wire Nails.
Weatherproof Wire.

Boost Earnings by Continuous Service

Can you afford to invest large sums of money in new locomotives, cars, and track and only secure a part of the service of which this improved equipment is capable of rendering?

No! You cannot.

The modern system of railroading requires a more continuous movement of traffic.

Have you thought of Automatic Block Signals, the Remote Control of Switches, and Interlocking as a means of making your traffic movement more continuous?

A number of railroads are boosting their earnings by reducing operating costs through the use of more signaling. They have found that the proper use of signaling eliminates train stops, reduces overtime and secures a greater use of locomotives, cars, track, labor, and, in fact, practically every item that is required to produce rail transportation.

G-R-S Automatic Block Signals and Interlocking, through more than 20 years of continuous service, have earned a reputation for dependability and low cost of maintenance. The maximum benefits that can be obtained by the use of signal equipment are insured when G-R-S apparatus is specified.

Investigate the possibilities of boosting your earnings by the use of more signaling. Investigate the performance of G-R-S signal equipment.



GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

LACHINE

QUEBEC



For Rolling Equipment Lubrication

Galena Car, Engine, Coach and Valve Oils; Air Brake and Driving Journal Compounds; Rod Cup, Gear, Transmission and Hub and Center Plate Greases.

For Power House and Shop Machinery Lubrication

Galena Power House Engine, Power House Valve, Dynamo, Turbine and Air Compressor Oils; Gas Engine, Commutator, Air Tool, Soluble Drilling, Hydraulic Jack, Tempering and Thread Cutting Oils; Tapping and Reaming Compound; Lubricating Greases for every use.

For Illumination and Signals

Galena Railway Safety, Long Time Burner and Perfection Signal Oils. For every requirement of hand lanterns, tail, switch and semaphore lights.

Galena lubricating and burning oils are made from highest grade stocks by Galena special process. Each product manufactured in graded consistencies to suit the variations of climate or type of service. All of merit proved by years of matchless performance on Canada's representative railways.

Galena Service is an invaluable aid in securing improved operation through raising the standard of lubrication. It accompanies Galena Oils without cost.



Galena-Signal Oil Company

of Canada, Limited

Toronto

Montreal





Brownhoist No. 4 Locomotive Crane on car repair work

KILL LAST AD How Brownhoists Serve the Railroads

Brownhoist Products

*Heavy Dock Machinery
Locomotive Cranes
Monorail Trolleys
Concrete Bunkers
Chain Conveyors
Belt Conveyors
Coal Crushers
Bridge Cranes
Buckets, etc.*

Literature on request

In the tremendous task of meeting the nation's constant need for more and better transportation facilities, Brownhoist cranes are indispensable helpers to most of the larger railroads.

For coaling locomotives, car repair work, and handling scrap with magnet—Brownhoists' prove their economy and reliability by ever-ready service.

On maintenance work a Brownhoist crane saves both time and labor in handling rails, cleaning ballast along the right of way, etc. On new construction a Brownhoist does the work of many men in excavating, handling material, driving piles and in other operations incidental to the building of new trackage.

Brownhoist locomotive cranes, designed for any of the above work, are built in a wide range of capacities to meet the need of every railroad. Catalog "K" briefly describes these various cranes. May we send it?

The Brown Hoisting Machinery Co., Cleveland, Ohio

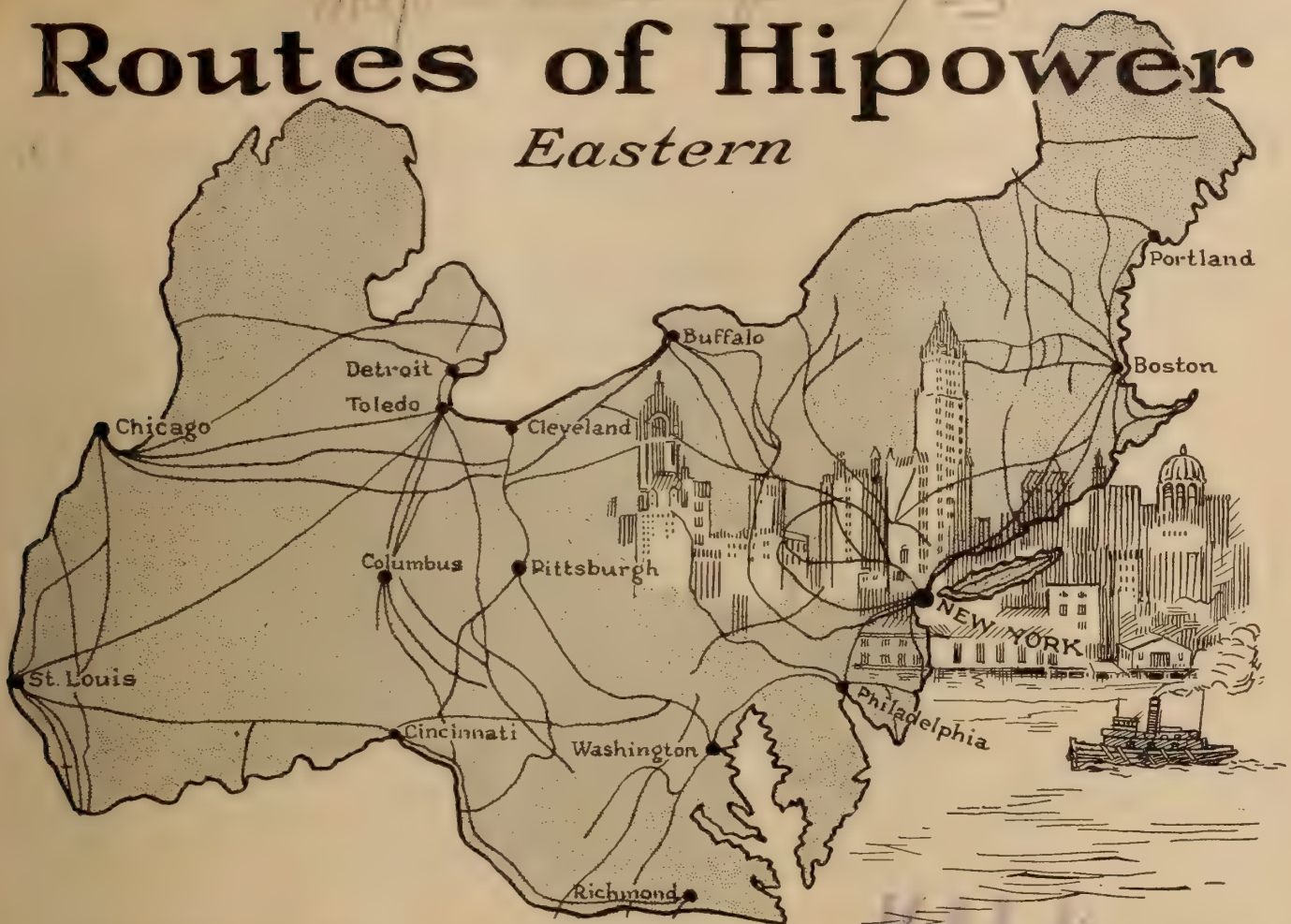
Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

BROWNHOIST

M A T E R I A L H A N D L I N G M A C H I N E R Y

Routes of Hipower

Eastern



The Routes of Hipower
Lead to Economy

IN the great manufacturing districts and thickly populated areas, HIPOWER is adequately, economically and permanently maintaining the bolted security of railway track joints.

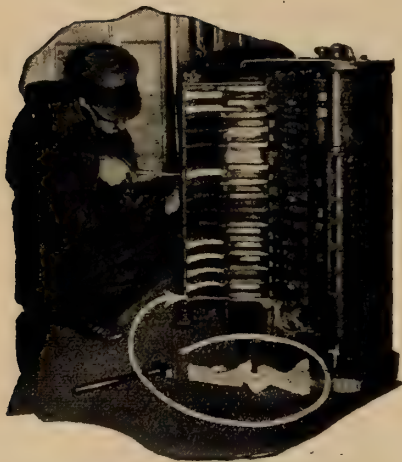
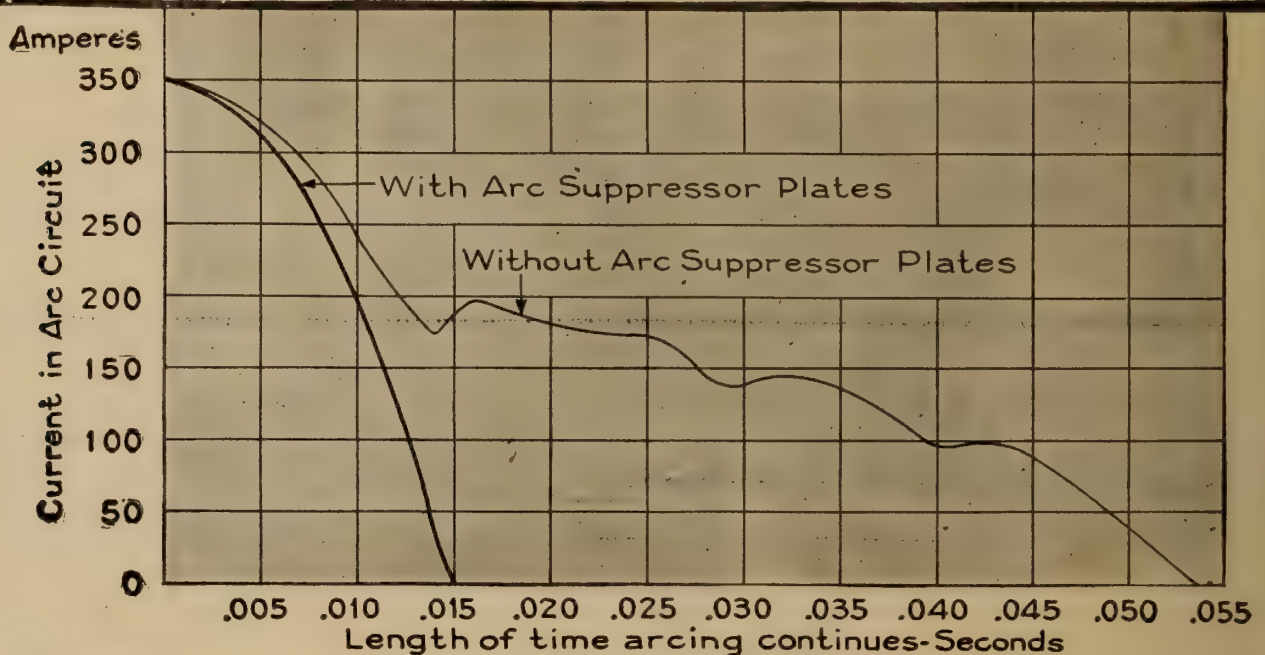
HIPOWER has won countrywide recognition for exceptional service under all known track and climatic conditions.

That's why HIPOWER is universally used.

Watch for your road
in this series.

THE NATIONAL LOCK WASHER CO.
Newark, N.J., U.S.A.

What C-G-E Arc Suppressor Plates Do



C-G-E Arc Suppressor Plates are installed opposite the fingers where there is the most arcing. They narrow the arc passages, which increase the resistance of the arc and the cooling effect of the plates.

NOTE the difference in time required to disrupt the arc in a K-35 controller as shown by actual test. This difference means there's considerably less burning of controller fingers, segments, and arcing plates when the equipment is protected with C-G-E Arc Suppressors.

Consider the value of these auxiliary plates in reducing maintenance costs. They reduce carbonization and eliminate much of the trouble from pitting of contacts. Modern controllers are equipped with them to give better, longer service.

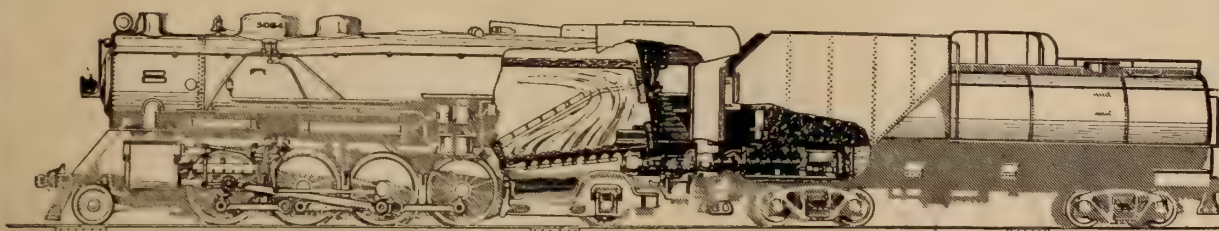
Arc Suppressor Plates can be used to advantage in any C-G-E controller having individual finger blow-outs. Installation requires only a few minutes. They are inexpensive. Try them.

"Made in Canada" by

Canadian General Electric Co., Limited

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Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Sherbrooke, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.



STAND ON THE TOP OF THE FIRST CAR

for just a few minutes with a locomotive fired either by hand or with another stoker and working hard.

Repeat the performance with a DU PONT SIMPLEX STOKER fired locomotive.

The difference in spark and cinder bombardment will be a revelation.

This reduction in spark and cinder loss is an easy demonstration of the DU PONT SIMPLEX coal economy.

STANDARD STOKER COMPANY, INC.

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McCormick Bldg., Chicago, Ill. duPont Bldg., Wilmington, Del.

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DUPONT-SIMPLEX STOKER

Scientific Treatment of Boiler Feed Water



Dearborn

On the Use of Water Softeners

When exceptionally bad waters of certain types are encountered, where analysis shows that treating plants would be the most effective method of handling, Dearborn recommends accordingly.

But if a road has failed to get results by adding various chemicals to the water supplies, without scientific analysis and understanding such as Dearborn provides, it does not follow that a treating plant is needed.

Don't Make This Mistake

There are many districts on which water softeners have been built in the belief that they would eliminate water troubles. In actual operation these plants are only partially effective, but representing an investment of thousands of dollars, they are kept in use, although inadequate, and the equipment and operating cost suffer accordingly.

We Will Investigate For You

We will make a survey of your water conditions, including complete mineral analysis, and submit recommendations looking to the greatest possible benefits for you. If we recommend Dearborn Treatment, we guarantee results. Dearborn Treatment costs less than the chemicals required in a treating plant, and calls for no investment in plant or equipment. There is no expense other than the cost of the treatment.

Roads using Dearborn Treatment have at their command at all times the services of the Dearborn Laboratory and expert engineers.

Operating executives who let Dearborn work with them never have to defend a bad purchase or an ineffective remedy.

Our Standing Offer

Let us make our laboratory analysis of your water supplies. Let us place our recommendations before you. Consider our methods, our laboratory control. Compare the expense and THEN decide. Write us direct, sending water samples.

NOTE: Dearborn Treatment is being used in a number of cases in conjunction with water softeners to give them increased effectiveness

Dearborn Chemical Company
Limited

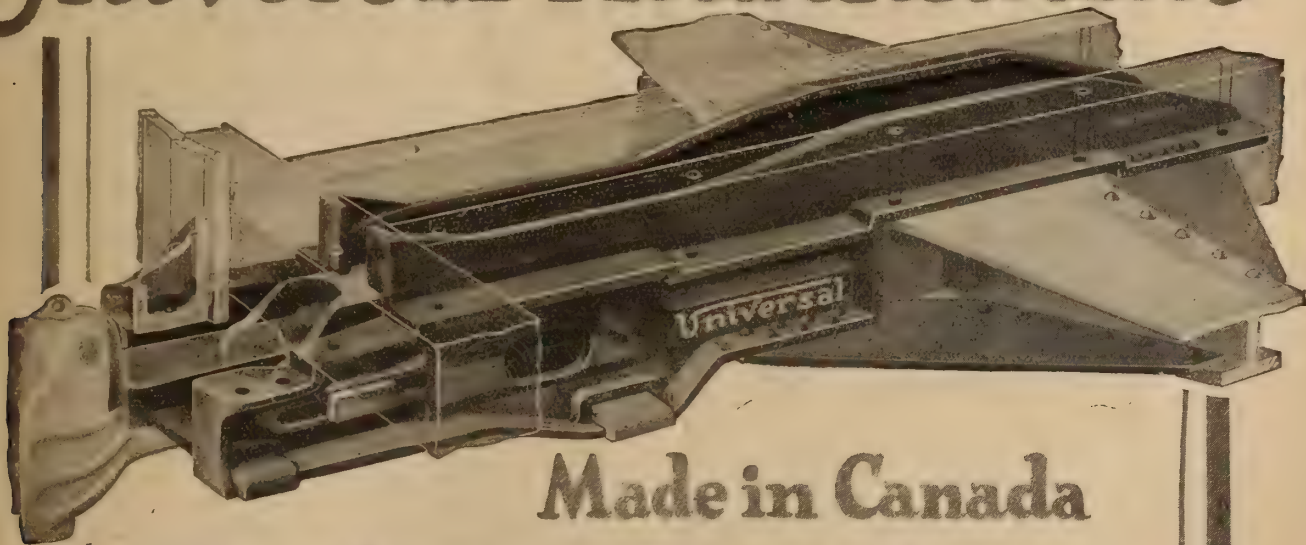
2454-2464 Dundas St. W. TORONTO, CANADA

Cardwell Friction Draft Gear



Made in Canada

Universal Attachments



Made in Canada

**Reinforcing Draft Arms
Tandem Spring Draft Arms
Twin Spring Draft Rigging
Frictionless Side Bearings
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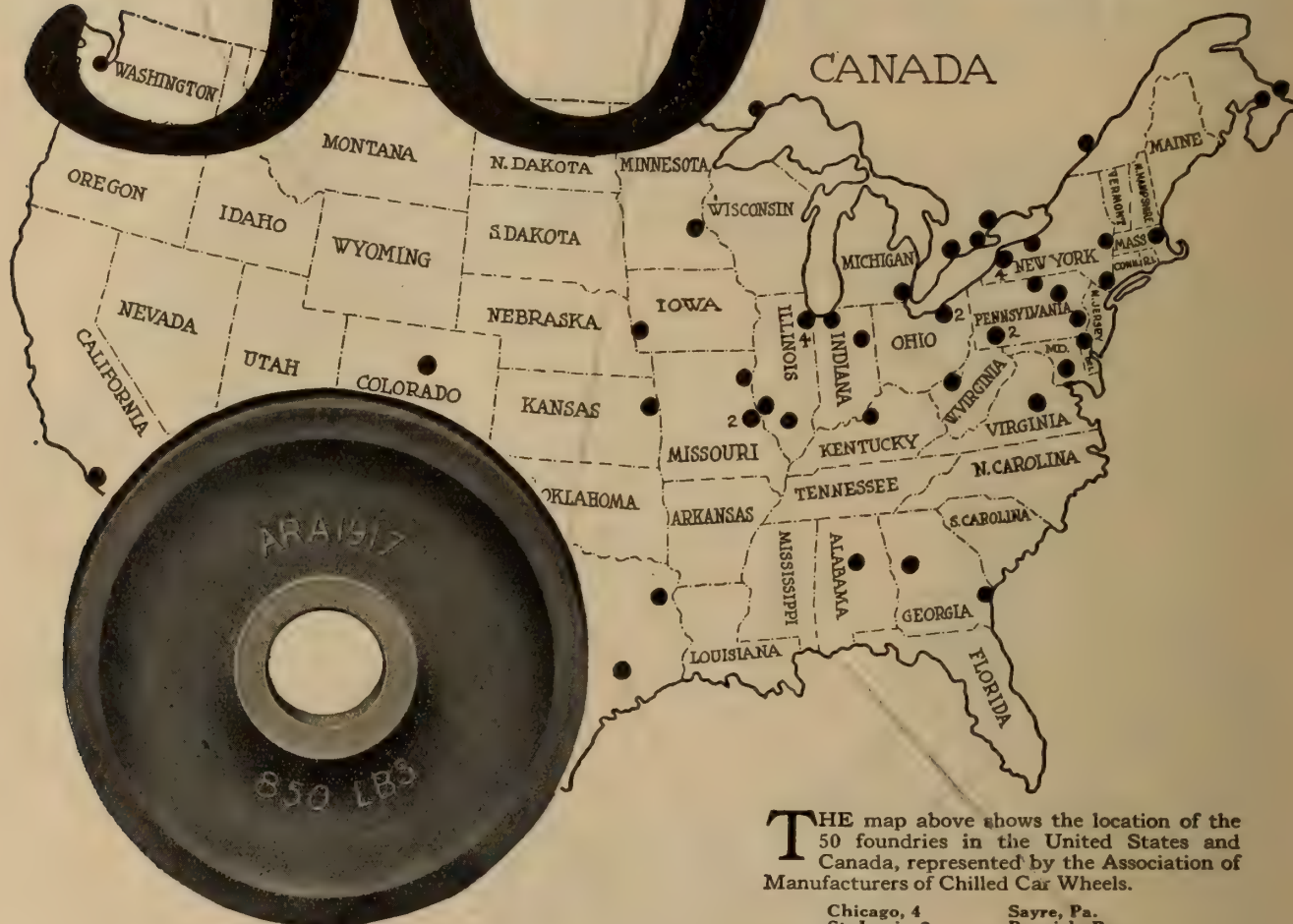
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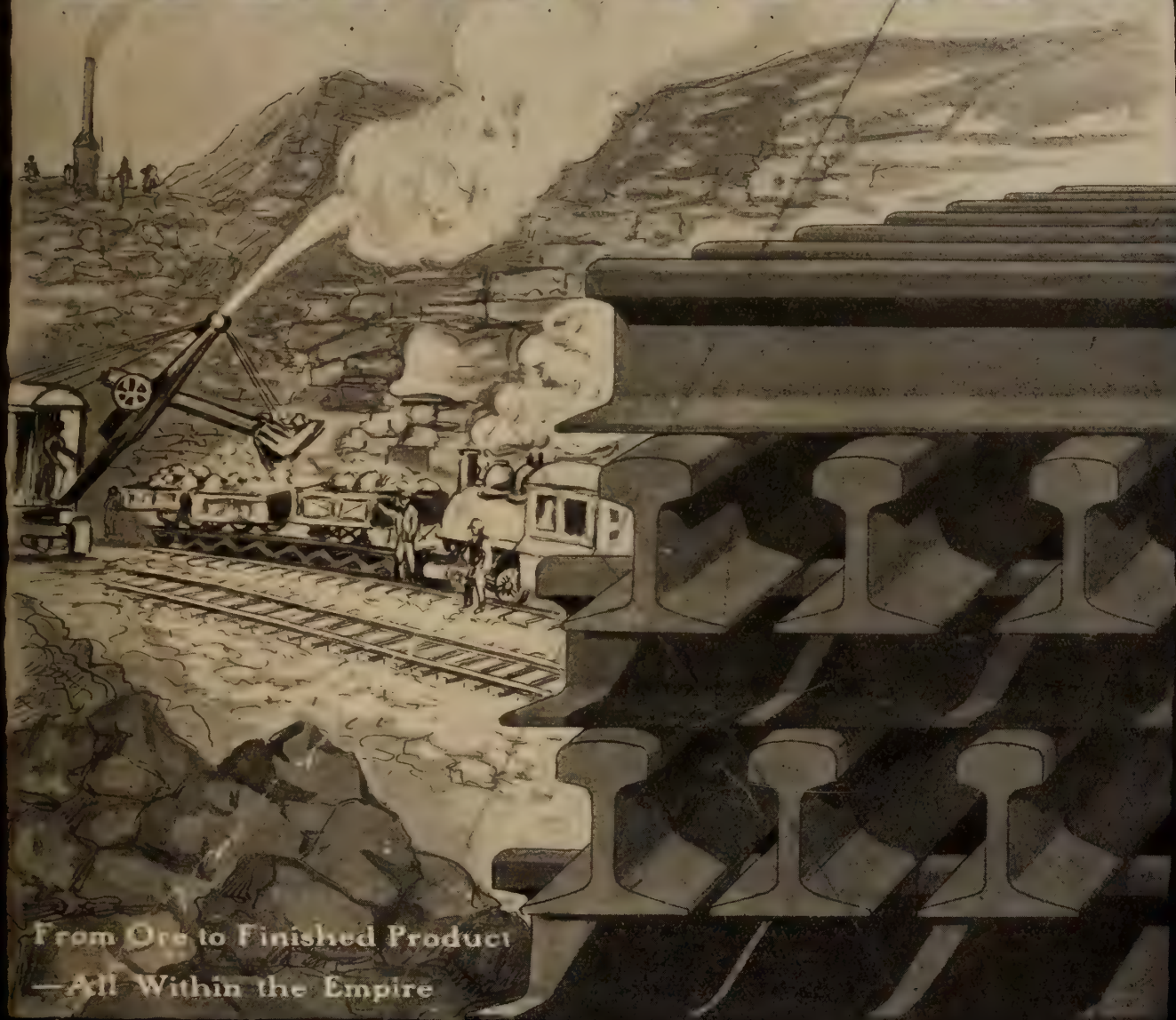
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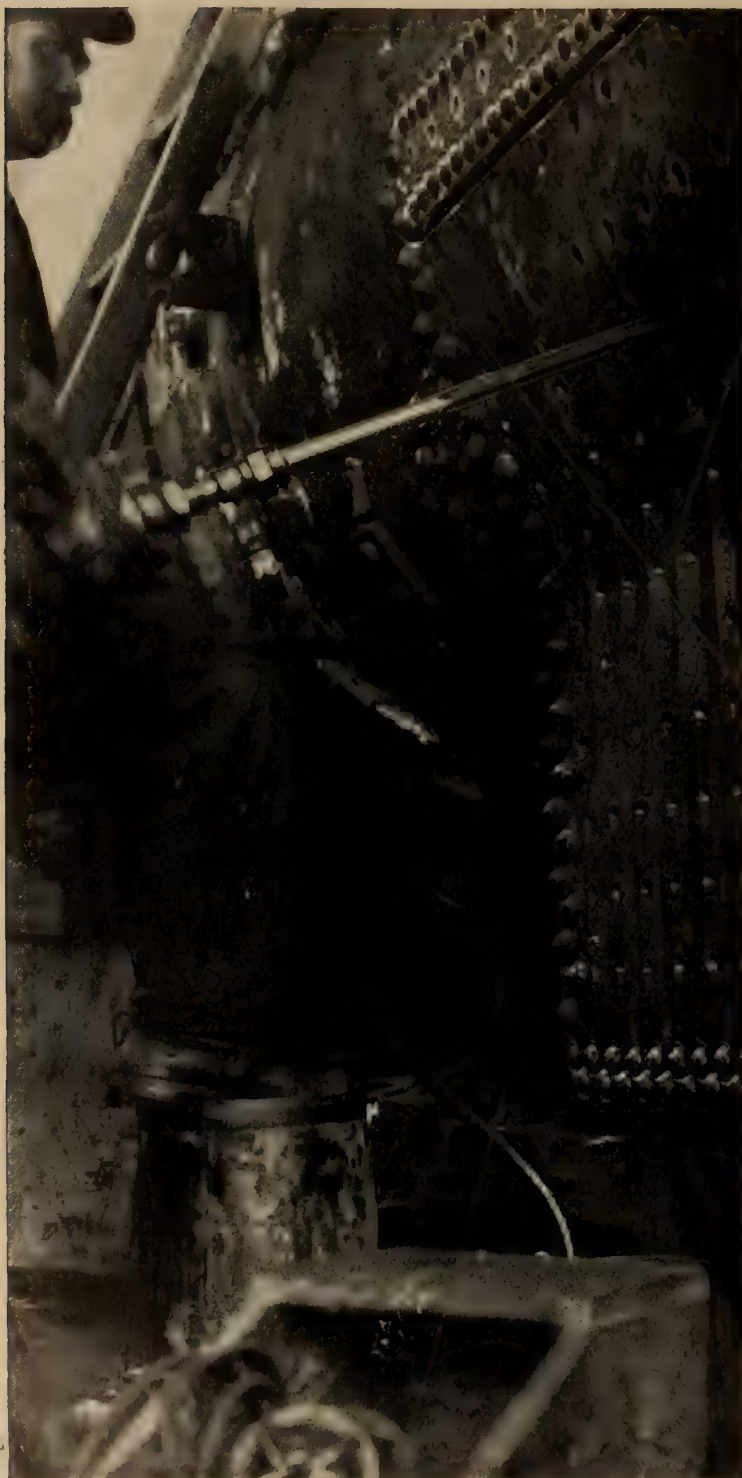
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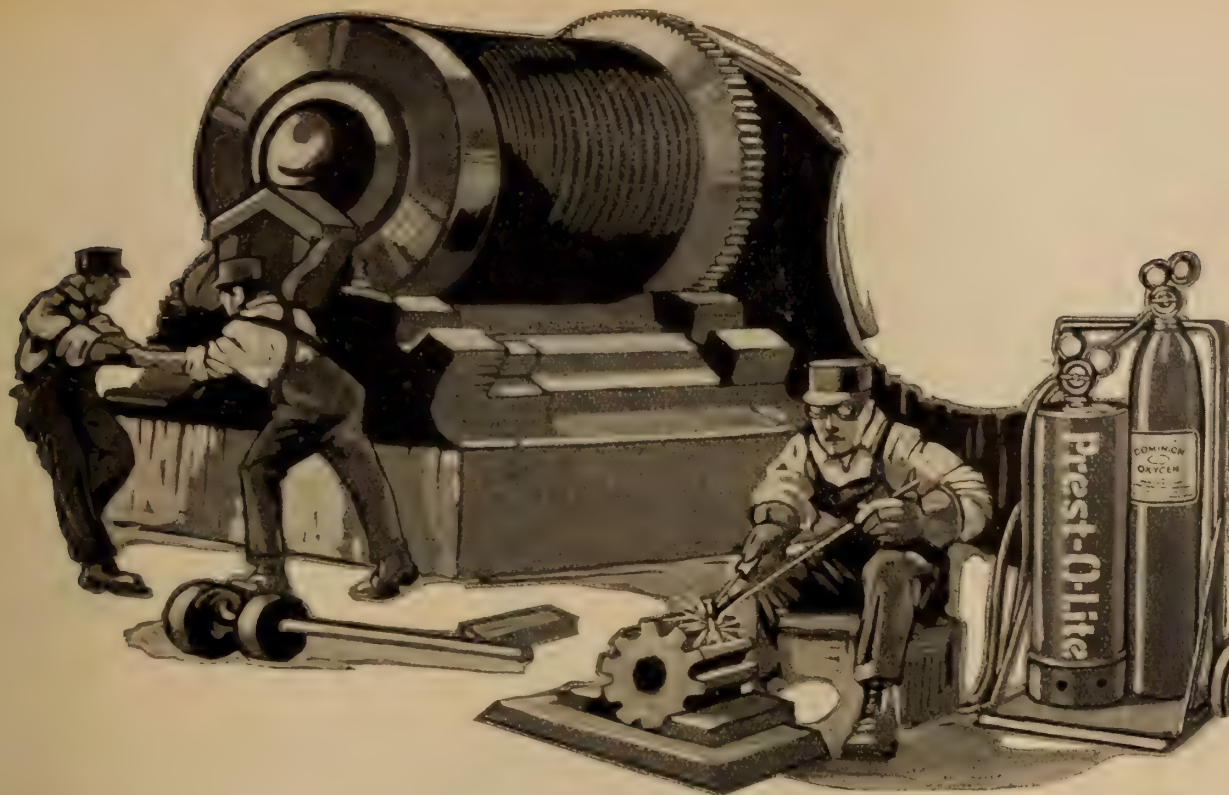
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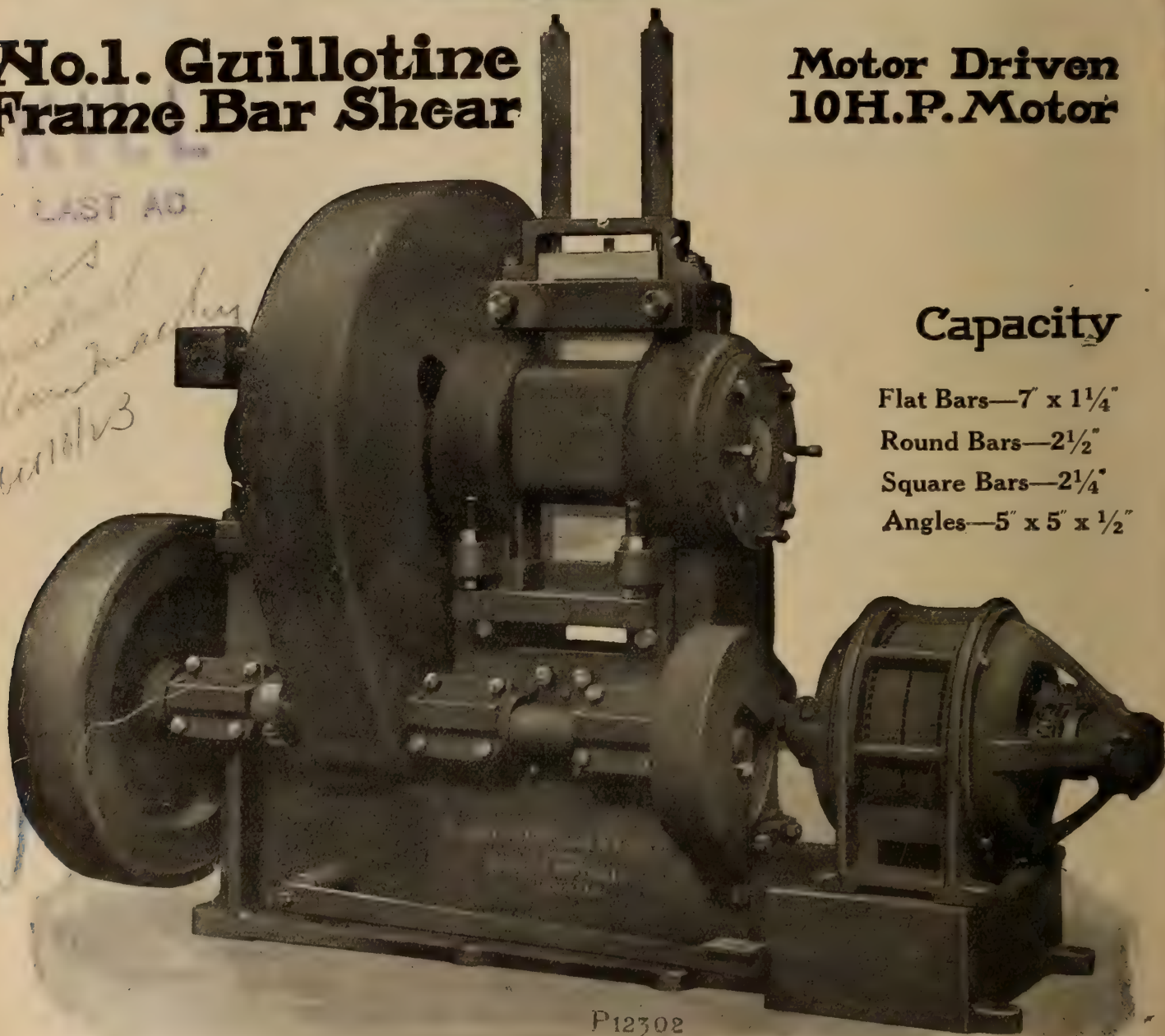
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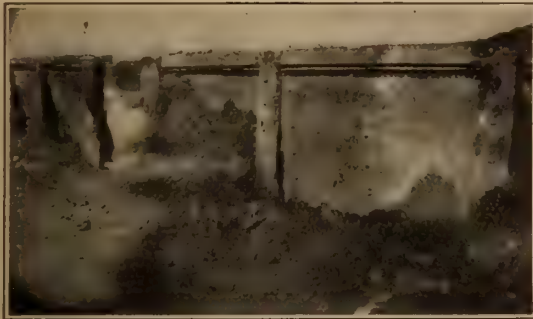
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or
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Improved Car Unloaded by Top Plow. Has no Ballast to be Shovelled out by Hand.

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**EQUIPPED TO
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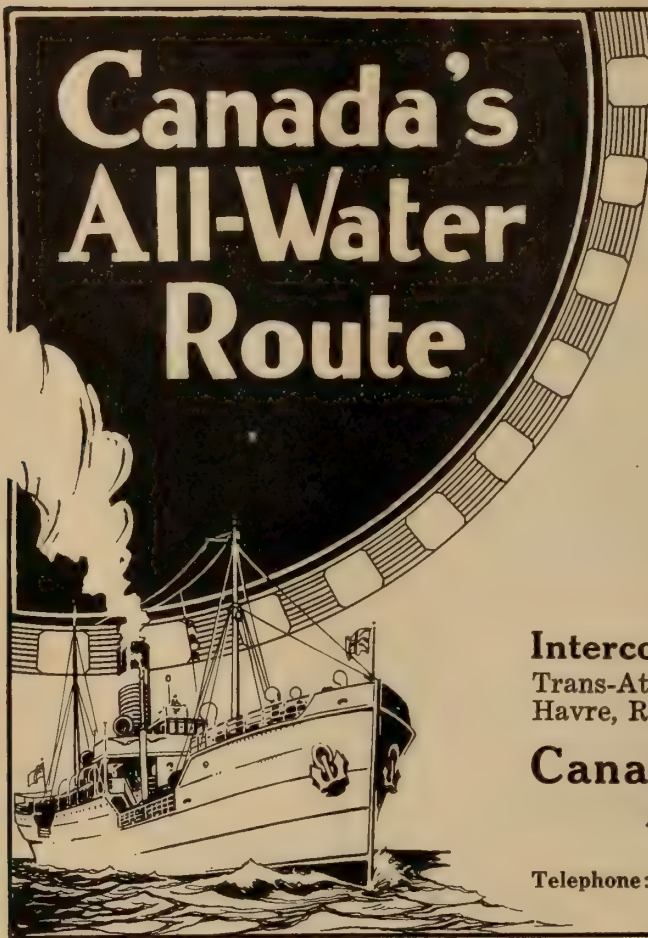
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We operate the following Freight Services:

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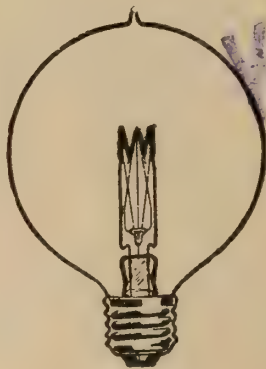
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Westinghouse Mazda C Locomotive Headlight Lamps are scientifically built to precision limits.

The light center and filament concentration are correct to give a powerful, penetrating, uniform beam and a light free from dark spots. These lamps are quickly and easily focused in all standard types of headlighting equipment.

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Largest Exclusive Trolley Wheel Makers in the World.

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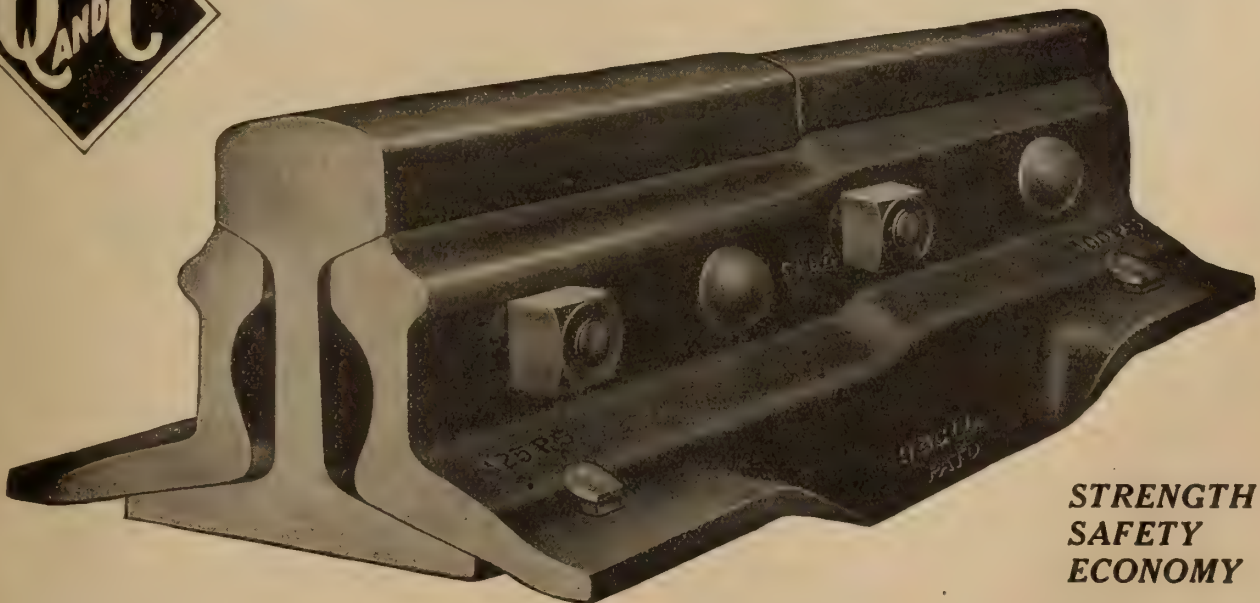
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These simple, strong cars bring work crews speedily and untired to the job. They need no skilled mechanic to operate them.

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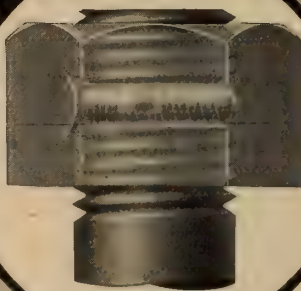
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F. B. C. Welded Flexible Staybolts
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SPECIAL FACILITIES FOR REPAIRS

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Franklin Automatic Adjustable Wedges protect every bearing on the engine.

"Franklin Automatic Adjustable Driving Box Wedges have given double the locomotive mileage without the necessity of removing rod bushings.

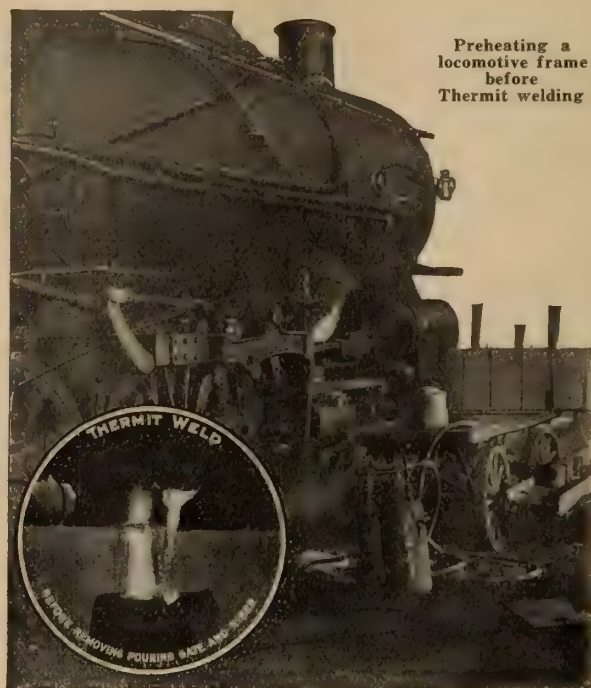
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This from a letter of a Superintendent of Motive Power to his Vice-President.

The comment resulted from the service given by the Franklin Wedges on his heavy freight engines. He used it in his request for more.

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Preheating a
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Only Reliable Method for Repairing Locomotive Frames



What the 500 Shops using the Thermit Welding Process in the United States and Canada are reporting:—

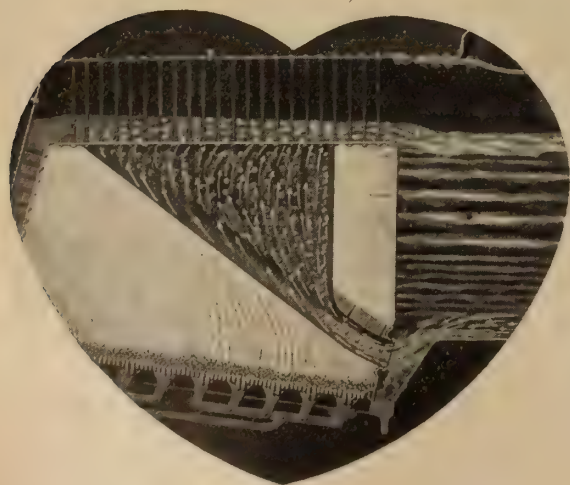
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The Canadian National route through the Rockies skirts Canada's highest peaks at the easiest gradient and lowest altitude of any transcontinental route.

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Built for the Canadian National Railways

We are specialists in building locomotives.

We build all types and sizes, also all kinds of spare and repair parts for locomotives and tenders.

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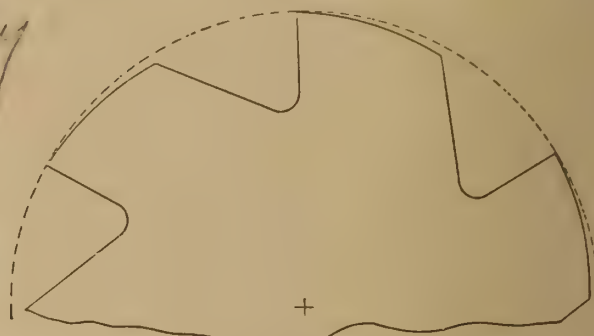
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Reamers

With Eccentric Relief

THE cut below shows our patent eccentric relief which is an exclusive Pratt & Whitney feature. Eccentrically relieved Reamers, as made by us, have the distinguishing advantage that they can be sharpened by grinding on the face of each flute, thus retaining a true working size for a much longer period than is otherwise possible.

Pratt & Whitney Reamers are the only reamers having this eccentric relief, which should not be confused with the so-called "Eccentric tooth," which is nothing more than unequal spacing and adds nothing to the life of the tool.



—a stronger tooth—a smoother hole
—no chatter—maintained size

All P. & W. Adjustable Reamers have eccentric relief, can be set to size without regrinding and can be made to face the bottom of a hole.

In order to set these reamers, it is only necessary to loosen the shoes and run back the nuts. The blades can then be pushed back and the shoes tightened slightly. Then, upon coming up with the adjusting nut, the diameter will gradually decrease until the desired size is obtained. Lock-nut and shoes are now firmly tightened and the reamer is ready for use. Quick, positive and convenient.

These reamers are made with 12 different sizes of bodies, giving an adjustment from .020 to .060 in., according to the diameter. Shell, hand or chucking reamers with the same number of body have interchangeable nuts, shoes, screws and wrenches. Shell and chucking reamers with the same number of body have interchangeable blades also.

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Works: Dundas, Ontario

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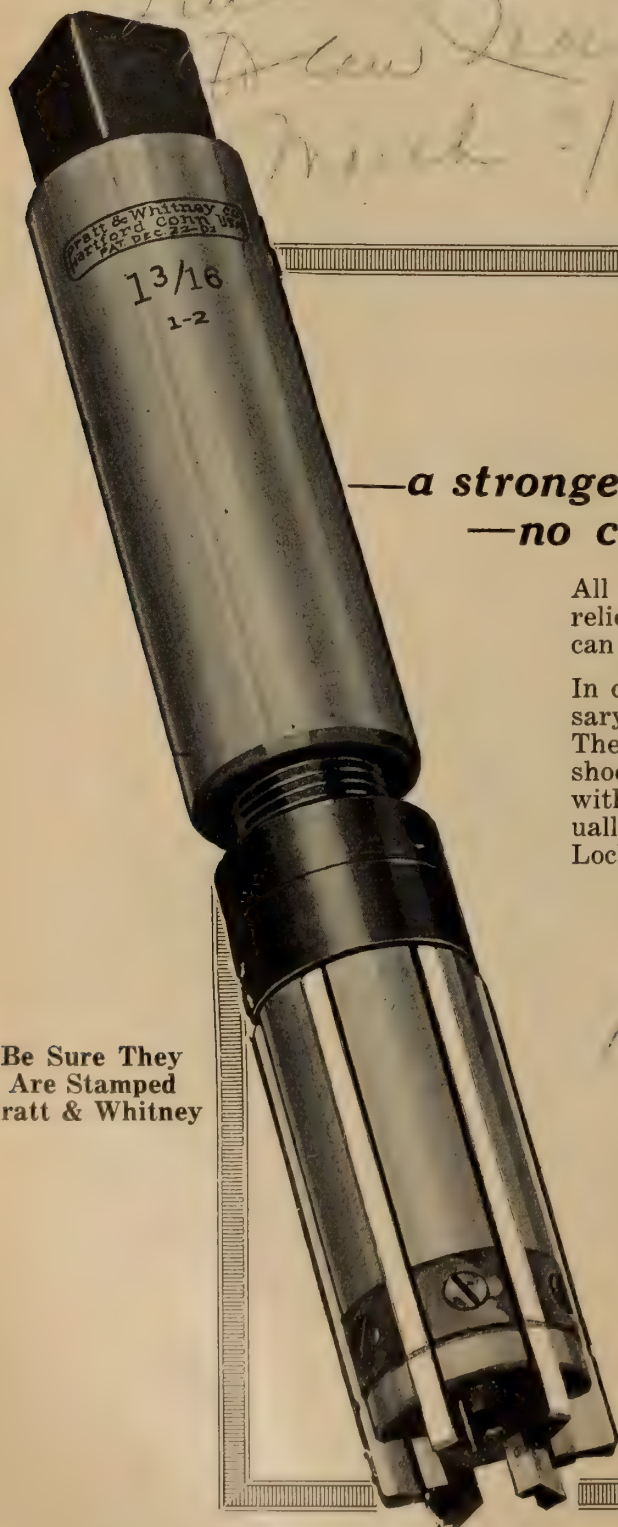
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VANCOUVER
B. C. Equipment Co.

Be Sure They
Are Stamped
Pratt & Whitney



Canadian Railway and Marine World

October, 1923.

Railway Operating Revenues, Expenses and Other Statistics.

The table of figures on page 465 gives the operating revenues, expenses, net earnings or deficits, and other operating statistics for Canadian railways' Canadian lines as a whole, for the first six months of 1923, compared with the same period of 1922, and separately for the Canadian National and Canadian Pacific as reported to the Dominion Bureau of Statistics.

The table on page 464 gives the Canadian Pacific results for July, also the Canadian National Rys. result for July, for the whole system, including all their steam railway lines in Canada and the U.S., except Central Vermont Ry. and also including express and hotel departments, and a number of subsidiary companies, but not the car ferries and steamboats. The table on page 466 gives the Canadian National Rys. results for June and for the first six months of 1923 for their steam lines in Canada and the U.S., except Central Vermont Ry.

The most noticeable thing about the table on page 465, so far as all the railways are concerned, is that a much larger traffic was carried in the first six months of this year, than in the corresponding period of 1922, with the public paying lower freight rates, but with better net earnings for the railways. It is also noticeable that while the Canadian National Rys. experienced substantial improvement in net earnings, or rather in the way of reducing the operating deficit, as compared with the same period of 1922, the C.P.R. net earnings decreased.

For the railways as a whole, during the first six months of 1923, freight earnings, \$148,718,310, were \$13,991,816 more than for the first 6 months of 1922; passenger earnings, \$35,384,454, were \$1,885,062 more, and total earnings, \$205,830,528, were \$17,999,343 more. Operating expenses for the first 6 months of 1923 were \$14,875,793 more than in the same period of 1922. The result of the greater increase in gross earnings than in operating expenses was that the railways as a whole reduced their operating ratio from 94.53 to 93.49, not a very large reduction, but at least sufficient to establish the fact that the change was in the right direction, and to inspire hope for the future.

During the first 6 months of 1923, the railways, as a whole, carried 14,244,777,310 ton miles of revenue freight, an increase of 21% over the first 6 months of 1922. Freight train miles operated 29,696,715, were 12% more than in the first 6 months of 1922. Revenue passenger miles increased by 5.1%; the payroll increased by 8.8%, and the number of employees increased by 8.5%. The average car loading in the first 6 months of 1922 was but 24.1 tons; in the first 6 months of 1923 it was 25.2 tons. The average revenue trainload in the first 6 months of 1923 was 479.7 tons, or 19.6 tons heavier than in the first 6 months of 1922, and the average freight train make up in the 1923 period was 22 loads and 9.7 empties, compared with 21.1 loads, and 9.6 empties, in the 1922 period.

The average receipt per revenue ton mile and per revenue passenger mile in the first 6 months of 1923 were 1.044 and 2.885 respectively, while in the first 6 months of 1922, they were 1.144 and 2.918 respectively.

From these figures it will be seen that the Canadian railways furnished a lot more transportation service in the first half of 1923 than in that of 1922, and that they charged less per unit for it. Notwithstanding this, due to better train and car loading, and to efficient handling of the traffic offered, the railways secured much larger net earnings than in the first half of last year, furnished employment to a greater number, and paid out much more in wages. This is a practical demonstration of the almost axiomatic proposition that the movement of a large volume of traffic at lowered rates is far better for all concerned than the movement of a restricted volume at high rates.

The Canadian National Rys., in the first half of 1923, including the Canadian Northern, Intercolonial, Prince Edward Island, National Transcontinental and other Government Rys., the Hudson Bay Ry., the Grand Trunk Railway in Canada, the G.T. Pacific Ry., and 36.16 miles of the G.T.R. in the U.S., viz., Champlain & St. Lawrence Ry., 1.21 miles, United States & Canada Ry., 22.18 miles, Vermont & Province Line Ry., 9.77 miles, and the Black Rock Terminal, but not other U.S. Grand Trunk lines, or the Central Vermont Ry., had freight earnings \$7,946,693 greater than in the first 6 months of 1922; passenger earnings \$1,319,739 greater; total earnings \$9,328,105 greater, and total expenses \$7,437,283 greater. The result of this was that the operating ratio was reduced from 105.34 in the first half of 1922, to 102.85 in the first half of 1923, and the operating deficit was reduced by \$1,890,823. As shown by the table on page 466, if it had not been for the exceptionally good results obtained in the first 6 months of this year by the Grand Trunk Western, the Canadian National Rys. as a whole would have had a deficit instead of any net earnings for the first half of 1923.

Examination of the Canadian National operating statistics for the 6 months period in the two years shows that, while the number of ton miles of revenue freight handled in the first half of 1923 was 23% greater than in the first half of 1922, the number of freight train miles operated was but 13% greater. It is thus evident that the number of freight train miles operated was not increased by nearly so much, proportionately, as the number of ton miles of revenue freight handled—a desirable condition. This is explained by the train loading figures, which show an increase of 39.1 tons of revenue freight per average freight train, this train loading betterment arising from, first, the addition of one loaded freight car to each average freight train, and an increase of 1.7 tons in each average car load. It is thus seen that the Canadian National management took advantage of the opportunity offered to

handle freight more economically by reason of there being a greater volume of it to handle.

The Canadian Pacific Ry.'s gross earnings for the first 6 months of 1923 were \$2,882,162 greater than in the same period of 1922, but operating expenses were \$4,790,824 greater, which resulted in a decrease of \$1,907,662 in net earnings, and an increase in the operating ratio from 87.03 to 89.87. It would appear that the C.P.R. showing is not as satisfactory as it might be, because the 1922 showing to the end of June was not as good as in 1921; it may be though, that the road will repeat its performance of last year, when the 1922 net ran behind that of 1921 until near the end of the year and then suddenly forged ahead and allowed the company to finish the year with better net earnings than in 1921. The increase in revenue ton miles handled in the first 6 months of 1923, compared with the first 6 months of 1922, was 15%, as compared with 23% for the Canadian National, and freight train mileage increased 19%, compared with 13% for the Canadian National. The C.P.R.'s inability to prevent freight train mileage increasing in a greater measure, proportionately, than revenue ton mileage is due to the fact that the average revenue trainload decreased by 18.4 tons, due to there being 0.3 less loaded freight cars per average train in the first half of 1923 than in the first half of 1922, this more than counterbalancing the increased average car loading of 0.6 ton per car.

C.P.R. and C.N.R.—while the C.P.R. was unable to derive better net earnings in the first half of 1923 than in the first half of 1922, and while the Canadian National Rys. were able to bring about a moderate reduction in their operating deficit, it is evident that they have a long way to go yet before their earning capacity will begin to approach that of the C.P.R., as is shown by the fact that the Canadian National Rys. were experiencing a deficit while the C.P.R. was earning a substantial net. In making comparisons in the operating results secured by the two systems, prior conditions must be given due consideration, and it must be borne in mind that the national lines have had more latitude, or opportunity, to effect improvement, than the C.P.R., due to the latter road having been organized and operating on its present basis for a much longer period. In the same way, also, as the Canadian National Rys. approach the C.P.R. standard of earnings throughout future years, the latitude or opportunity for further improvement will decrease, and it will be logical to expect, therefore, that the nearer the C.P.R. standard of relationship as between earnings and expenses is approached, the slower will be the rate of accomplishment of still further improvement.

July Results.—The table on page 464 shows that for July the Canadian National operating revenues for all steam railways, except the Central Vermont, and for the express and hotel depart-

ments and a number of subsidiary companies, but not the car ferries and steamboats, were \$21,002,848, or \$1,467,907 more than in July, 1922, while operating expenses for the month, \$19,530,620, were \$718,683 more, which made the net earnings, \$1,472,229, \$749,224 more than those of July, 1922, and reduced the operating ratio from 96.30 to 92.99. For the first 7 months of 1923, the net earnings for the system as specified above, were \$2,984,460, compared with an operating deficit for the same lines of \$2,202,993, in the first 7 months of 1922, a betterment of \$5,187,453.

The C.P.R. July operating revenues were \$15,677,836, an increase of \$1,214,001 over July 1922; and operating expenses, \$13,607,802, were \$1,105,875 more, making the net \$2,070,034, or \$108,126 more. The increase in net earnings, however, was insufficient to bring the net for the first 7 months of 1923 up to that of the first 7 months of 1922, the difference being \$139,585.

Six and Seven Months Results.—Thorough examination of the figures contained in the various tables in this issue shows that, despite the improvement made by the whole Canadian National Rys. in the first 7 months of 1923, and the optimistic utterances concerning the situation, made by portions of the press, the Canadian railway industry is still in a bad way financially, and there is a long distance to go before it will be on a proper basis. As to the Canadian National Rys. results, the improvement effected in the first 6 months of 1923, over the corresponding period of 1922, is due to the Grand Trunk Western lines.

The table on page 466 of this issue giving separately the results secured by the Canadian National's Canadian lines, Duluth, Winnipeg and Pacific Rys., Grand Trunk Western lines and New England lines other than Central Vermont, when studied in conjunction with the table on page 465 showing the results secured by lines in Canada, and the 36.16 miles in the U.S. as specified, also shows that the greatest influence in the betterment shown by the C.N.R. as a whole for the first 7 months of this year, was due in great part to the G.T.R. Western lines in the U.S. All U.S. roads are securing results this year which are much better than for some years past, and while Canada has experienced a good traffic revival, and while operation is as efficient as conditions will allow, the rate reductions made have been so severe that the railways find themselves unable to make any headway of consequence. It may be that during the first 7 months of this year large expenditures were made on maintenance in preparation for the expected heavy autumn traffic, but this is a more or less usual procedure. The fact is that the railways are not getting paid enough, in relation to what they have to pay out, to allow them to derive a reasonable operating ratio. For example, take the C.P.R. net earnings for the first seven months of the year, \$11,636,394. Going back to 1912, net earnings for the first 7 months of each year have been as follows: 1922, \$11,775,979; 1921, \$15,004,482; 1920, \$13,047,672; 1919, \$15,183,182; 1918, \$16,876,996; 1917, \$24,757,455; 1916, \$23,618,825; 1915, \$16,701,453; 1914, \$18,892,937; 1913, \$23,231,516; 1912, \$23,276,171. It will thus be seen that the net earnings for the first 7 months of 1923 are the smallest for any similar period back to 1912. With the C.P.R. deriving net earnings as restricted as they are, and with the Canadian

National's Canadian lines showing no net earnings to apply on fixed charges during the first half of the year, it certainly seems that the rate reductions imposed on Canadian railways have been drastic and it is a fact that it is only because traffic is being offered in its present large volume that they are able to get results as good as they have been getting. It is certainly to be hoped that a still greater traffic in the final 5 months of the year will enable them to make a better showing than in the first 7 months.

American Association of Passenger Traffic Officers.

This Association held its 67th annual meeting in Canada this year. The Canadian National Rys. ran a special train from Chicago, for the members from southwestern points, to Montreal a stop of a few hours being made in Toronto, Sept. 15. Other members travelled to Montreal by special cars from New York, Buffalo, Cleveland, and New England points. The several parties were received in Montreal, by Canadian National and Canadian Pacific Rys. traffic officials on Sept. 17, were taken on a tour round the city. Charles Marcell, M.P., on behalf of the Dominion Government, and Mayor Martin on behalf of the city welcomed the Association, at a luncheon at which G. T. Bell, Executive Assistant to Vice President in charge of Traffic, C.N. Rys. presided. In the evening the party embarked on the Canada Steamship Lines s.s. Richelieu, for a trip to the Saguenay, and return, during which the association's business was dealt with. On the return to Montreal the Canadian National Rys. entertained the members at dinner at the Mount Royal Hotel.

The Canadian Ticket Agents' Association will hold its 37th annual meeting and outing on Oct. 9 and 10. The business meeting will be at the Mount Royal Hotel, Montreal, Oct. 9, at 10 a.m., and there will be a theatre party in the evening. On Oct. 10, a limited number of members will be given a trip around the harbor, by the Harbor Commissioners; the C.P.R. has given an invitation for an at home on the s.s. Melita, and there will probably be a mountain drive. Quebec may be visited, either by rail or Canada Steamship Lines route.

Steel Rails for Canadian National Rys.—A Chicago dispatch of Sept. 12 to a New York paper said: "The Canadian National Rys. have placed an informal order for 23,000 tons of standard steel rails with the Illinois Steel Co., a United States Steel Corporation subsidiary." Canadian Railway and Marine World was officially advised, Sept. 15, that the report was entirely erroneous, as the C.N.R. had ordered no rails from the Illinois Steel Co., and had not placed any orders for rails recently, either in Canada or the United States.

Sir George McLaren Brown, European General Manager, C.P.R., writing in the London Morning Post recently on Canada said that Canada land settlement, the agricultural salvation of western Canada lies in mixed farming, which calls for smaller and more numerous agricultural holdings than wheat growing does, and results in closer settlement and better communications. The bigger and more densely settled the rural population the more social amenities there are with greater advantages generally.

Railway Earnings and Expenses.

Canadian National Railways.

Canadian Railway and Marine World is now able, after three months interval, to resume publication of its monthly comparative table of C.N.R. earnings and expenses, which had to be omitted from its July, August and September issues owing to changes which had been made in the form in which they were furnished. We have now been supplied by the C.N.R. with comparative figures from January to June, both inclusive, for 1922 and 1923, which are given below. We are advised that they include the Canadian Northern Ry. system, including Duluth, Winnipeg & Pacific Ry.; Canadian Government Rys., including Intercolonial and Prince Edward Island Rys., and various local lines in the Maritime Provinces and Quebec which have been acquired by the Dominion Government; Grand Trunk Pacific Ry.; Grand Trunk Ry. lines both in Canada and the United States, but not Central Vermont Ry. or electric lines. They also include the express and hotel departments and a number of subsidiary companies, the names of which are not given, but not car ferries and steamboats, nor the telegraph department.

	Earnings	Expenses	Net	Increase or decrease
Jan.	\$18,765,458	\$19,362,197	\$*596,739	\$1,273,039
Feb.	16,193,823	18,903,510	*2,709,687	*1,310,437
Mar.	19,460,560	19,773,916	*313,356	*733,755
Apr.	20,890,911	18,779,726	2,111,185	3,039,973
May	20,992,772	19,092,414	1,900,358	925,126
June	20,475,149	19,354,678	1,120,471	1,244,283
July	21,002,849	19,530,620	1,472,229	749,224

	\$137,781,522	\$134,797,061	\$2,984,461	\$5,187,453
Incr.	\$15,675,945	\$10,488,492	\$5,187,453	*****

*Deficit or decrease.

Operating ratios—	1923	1922
January	103.17	111.63
February	116.73	108.84
March	101.61	97.74
April	89.89	106.08
May	90.94	94.72
June	94.52	100.67
July	92.99	96.30
For 7 months ended July 31	97.83	101.80

The C.N.R. Publicity Department has issued the following statement: The gross earnings for July were up \$1,467,907, an increase of 7½% over July, 1922. After meeting operating expenses, \$19,530,620, there remains a net operating revenue for the month of \$1,472,228. In July, 1922, the net operating revenue from the same properties was \$723,004, so that the July, 1923, net increased \$749,224, or 103.6%. For the first seven months of 1923 the net earnings were \$2,984,460, compared with a deficit on the same properties of \$2,202,993 in the corresponding period of 1922. The improvement in net operating results in the first seven months of 1923 over those of 1922 was therefore \$5,187,453.

The C.N.R.'s Publicity Department has also issued the following statement: Approximate gross earnings for August were \$21,952,169, against \$20,053,375 for Aug., 1922; and for the 2 weeks ended Sept. 14, \$9,471,405, against \$9,193,584 for same period, 1922, and from Jan. 1 to Sept. 14, \$169,210,470.90, an increase of \$17,497,671.80 over the same period of 1922.

The C.N.R. official figures, as reported to the Dominion Bureau of Statistics, for six months to June 30, for practically Canadian lines only, are given on pg. 465 of this issue, and for the whole system on pg. 466.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross	Expenses	Net	Increase or decrease
Jan.	\$13,148,914	\$12,428,888	\$720,026	\$236,549
Feb.	11,159,865	10,664,371	495,494	*158,994
Mar.	13,585,763	11,606,049	1,979,714	*440,793
April	13,651,494	11,700,615	1,950,879	402,107
May	14,355,539	12,357,292	1,998,247	*346,266
June	14,943,919	12,521,918	2,422,001	59,687
July	15,677,836	13,607,802	2,070,034	108,126
	\$96,523,329	\$84,886,935	\$11,636,394	*\$139,585
Incr.	\$5,764,136	\$5,903,721	*****	*****
Decrease	*****	*****	\$139,585	*****

*Decrease.

Approximate gross earnings for August, \$15,946,000, against \$15,493,000 for Aug., 1922; for 2 weeks ended Sept. 14, \$6,739,000, against \$7,299,000 for same period 1922.

Railway Operating Revenues, Expenses and Other Statistics for Six Months Ended June 30, 1923.

The following comparative table for the six months ended June 30, 1922 and 1923, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are not in all cases the same as reported in 1922.

The column headed "Canadian National" gives the figures for the combined steam railways in Canada, under the

Canadian National Ry. Co's directors' management, including the former Canadian Northern System; the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Province Line Ry., 9.77 miles, and Black Rock terminal. It does not include the Central Vermont, other lines in New England, nor lines west of the Detroit and St. Clair Rivers.

The column headed "Canadian Pacific"

includes also the Montreal & Atlantic and Esquimalt & Nanaimo Rys.

The first six items under the heading "Operating revenues" include rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, baggage, parlor cars, etc.

Operating Revenues	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
Freight	\$148,718,310.24	\$134,726,494.31	\$71,736,305.57	\$63,789,612.64	\$54,819,215.70	\$52,226,120.83
Passenger	35,384,453.86	33,499,391.96	14,861,903.95	13,542,164.69	15,241,708.73	15,162,104.66
Mail	3,559,739.59	3,759,176.54	1,531,929.03	1,683,196.37	1,757,550.70	1,803,012.72
Express	7,040,809.45	6,037,322.18	3,691,753.02	3,385,623.73	2,710,141.88	2,689,282.46
Other freight train	28,331.86	20,802.82	8,700.00	Dr. 8,329.65	14,069.93	27,317.31
Other passenger train	2,952,587.41	2,843,783.15	1,117,114.05	1,017,796.25	1,717,762.05	1,681,825.11
Water line	818,195.12	766,772.48		.40	632,095.21	614,416.81
All other	7,328,100.04	6,177,441.20	2,917,184.80	2,526,720.37	3,476,558.52	3,282,861.62
Total railway operating revenues	\$205,830,527.57	\$187,831,184.59	\$95,864,890.42	\$86,536,784.80	\$80,369,102.72	\$77,486,941.52
Operating Expenses						
Maintenance of way and structures	\$35,575,104.09	\$33,228,678.80	\$18,541,767.44	\$17,754,973.76	\$12,526,858.72	\$11,691,211.23
Maintenance of equipment	45,028,557.99	43,420,861.75	23,207,200.52	22,764,753.32	16,744,164.54	15,393,806.89
Traffic	6,407,900.19	6,071,629.71	2,122,459.09	2,089,754.49	3,864,152.04	3,517,104.39
Transportation	96,873,563.45	87,044,362.15	50,290,198.28	44,683,883.26	36,061,018.39	33,765,230.15
Miscellaneous operations	2,693,049.04	2,479,312.54	1,239,442.60	1,241,573.68	1,207,941.19	1,262,158.04
General	6,000,085.76	5,667,856.41	3,332,036.06	2,982,837.95	1,824,778.00	1,808,578.41
Transportation for investment	153,354.82	363,588.79	Cr. 140,216.60	Cr. 362,172.09		
Total railway operating expenses	\$192,424,905.70	\$177,549,112.57	\$98,592,887.39	\$91,155,604.37	\$72,228,912.88	\$67,438,089.11
Operating Income						
Net operating revenue	\$13,405,621.87	\$10,282,072.02	Dr. \$2,727,996.97	Dr. \$4,618,819.57	\$8,140,189.84	\$10,048,852.41
Railway tax accruals	3,415,456.67	3,055,050.37	1,309,402.58	1,091,557.21	1,577,189.63	1,480,936.88
Uncollectible revenues	35,187.98	27,777.88	28,982.59	20,312.67		
Hire of equipment	Cr. 3,572,622.23	Cr. 2,028,008.06	Cr. 2,301,148.59	Cr. 2,185,470.12	Cr. 3,102,098.85	Dr. 1,867,214.64
Joint facilities rents	Dr. 735,705.98	Dr. 540,520.41	Cr. 95,825.20	Cr. 100,861.57	Cr. 51,638.10	Cr. 127,708.71
Operating income	12,791,893.47	8,686,731.42	Dr. 1,669,408.35	Dr. 3,444,357.76	9,716,737.16	10,062,838.88
Operating Statistics						
Average miles of road operated	38,709	38,805	20,627	20,726	13,919.9	13,877.2
Tons carried (revenue freight)	53,613,222	42,874,827	22,888,684	17,758,847	14,309,643	12,633,595
Tons carried one mile (revenue freight)	14,244,777.310	11,776,875.996	7,274,229.163	5,902,507.835	5,201,030.634	4,518,450.580
Tons carried (all freight)	63,345,338	49,727,250	27,732,029	21,199,057	18,550,930	15,330,068
Tons-carried one mile (all freight)	16,247,604,803	12,995,180,071	8,356,395,622	6,571,516,347	6,063,926,464	5,023,371,448
Revenue passengers carried	20,220,587	19,963,494	10,414,727	10,316,873	7,064,093	6,948,706
Revenue passengers carried one mile	1,226,483,917	1,148,022,666	533,543,746	487,706,029	534,943,780	516,444,314
Freight train miles	29,696,715	25,598,251	15,402,055	13,625,940	10,927,063	9,138,966
Passenger train miles	22,241,955	21,531,487	10,174,792	10,029,217	9,431,717	9,411,116
Total train miles (revenue and non-revenue)	54,136,285	48,475,154	26,834,468	24,657,160	21,117,873	18,928,752
Freight car miles—loaded	645,986,061	539,786,966	325,832,124	275,473,894	235,846,349	200,183,036
Freight car miles—empty	288,051,374	245,395,824	158,230,631	132,485,101	93,527,697	76,644,460
Passenger train car miles	147,452,576	143,577,950	64,099,439	64,465,864	65,008,495	63,718,954
Total amount of payroll	\$115,376,546.19	\$106,029,374.62	\$63,046,081.01	\$58,213,611.58	\$42,301,263.62	\$38,805,299.98
Number of employees	158,630	146,228	87,797	80,892	58,499	54,171
Daily Averages per mile of road operated						
Operating revenues	\$177.25	\$161.35	\$154.92	\$139.18	\$192.46	\$186.13
Operating expenses	\$165.70	\$152.51	\$159.33	\$146.60	\$172.96	\$161.99
Tons moved one mile (revenue freight)	12,267	10,116	11,755	9,493	12,455	10,853
Tons moved one mile (all freight)	13,991	11,168	13,504	10,569	14,521	12,066
Revenue passengers carried one mile	1,056	986	862	784	1,281	1,240
*Averages per freight train mile						
Freight revenues	\$5.01	\$5.26	\$4.66	\$4.68	\$5.02	\$5.72
Tons of freight (revenue freight)	479.7	460.1	472.3	433.2	476.0	494.4
Tons of freight (all freight)	547.1	507.7	542.5	482.3	554.9	549.7
Loaded freight cars	22.0	21.1	21.2	20.2	21.6	21.9
Empty freight cars	9.7	9.6	10.3	9.7	8.6	8.4
*Averages per passenger train mile						
Passenger train revenues	\$2.20	\$2.14	\$2.08	\$2.02	\$2.27	\$2.27
Passengers carried	55.1	53.3	52.4	48.6	56.7	54.9
Passenger cars	6.6	6.7	6.3	6.4	6.9	6.8
Average operating expenses per train mile	\$3.55	\$3.66	\$3.67	\$3.70	\$3.42	\$3.56
Average length of haul (revenue freight), miles	265.7	274.7	317.8	332.4	363.5	357.7
Average passenger journey, miles	60.7	57.51	51.2	47.3	75.7	74.3
Average tons per loaded freight car	25.2	24.1	25.6	23.9	25.7	25.1
Average freight receipt per revenue ton mile	1.044c	1.144c	.986c	1.081c	1.054c	1.156c
Average Passenger receipt per passenger per mile	2.885c	2.918c	2.786c	2.777c	2.849c	2.936c
Ratio of payroll to operating revenues	56.1%	56.4%	65.8%	67.3%	52.6%	50.1%
Ratio of payroll to operating expenses	60.0%	59.7%	63.9%	63.9%	58.6%	57.5%
Ratio of operating expenses to revenues	93.49%	94.53%	102.85%	105.34%	89.87%	87.03%

*Contains a proportion of mixed train miles.

Transportation Day at Canadian National Exhibition.

The Canadian National Exhibition directors' luncheon on Transportation Day, Sept. 6, was attended by a number of transportation officials, in addition to other guests, among those present being:—Geo. Wright, member Toronto Transportation Commission; J. E. Dalrymple and W. D. Robb, Vice Presidents; G. C. Jones, Manager, Telegraph and Telephone Department; C. J. Smith, General Manager, Elevators and Warehouses; C. W. Johnston, Passenger Traffic Manager; C. K. Howard, General Tourist Agent; L. L. Grabill, General Baggage Agent, Central Region; C. E. Horning, District Passenger Agent; and W. J. Moffatt, General Agent, Passenger Department, Canadian National Rys.; W. Fulton, District Passenger Agent; W. Horder, Assistant District Passenger Agent; H. B. Beaumont, General Agent, Steamship Department; W. C. Underwood, City Passenger Agent; W. Corbett, Terminal Passenger Agent; W. Dockrill, J. B. Tinning, and J. A. Yorick, Travelling Passenger Agents, Canadian Pacific Rys.; G. H. Webster, Secretary, Canadian Passenger Association, Eastern Lines; R. A. Mitchell, General Agent, Canadian National Rys. Express Department; F. W. Branscombe, General Superintendent, Eastern Lines; and H. P. Sharpe, General Agent, Toronto, Dominion Ex. Co.; J. Foy, Canadian Passenger Agent, New York Central Rd.; and Acton Burrows, Proprietor, Canadian Railway and Marine World.

W. D. Robb, Vice President, in charge of insurance, lands, telegraph, colonization, development and general matters, Canadian National Rys., who spoke on behalf of the transportation interests, complimented the directors on setting

aside a special day for those interests, instead of in conjunction with some others, as in previous years, and congratulated them on the exhibition's continued and unrivalled success. After referring to other transportation matters, he said, "The Canadian National Rys., since the advent of the present management, have been planning an active and effective organization to deal with Canada's important need for greater population. There are those who approach this subject in the belief that it is a simple matter, and that all we have to do is to bring over the thousands from Europe desiring to emigrate and fill up the country. The C.N.R.'s policy must, of necessity, be regulated by that of the Dominion Government and Canada's ability to absorb and assimilate newcomers. Our policy is, therefore, to bring to Canada all the people we possibly can, subject to these conditions, and our organization is now being completed with this object in view. It is our intention to use every possible instrument in this country and the British Isles, not only to bring desirable people into this country, but to take care of them after they come here and to this end the Canadian railways, in co-operation with the Dominion Government, have taken over the direction of the Canada Colonization Association and the Canadian National Rys. are represented on its board of directors. Every effort will be made by the Association to induce suitable settlers to come to Canada and enable them to take up the many thousand acres of fertile lands that have been lying dormant and unproductive up to the present time. These lands are being offered

on long term payments and easy terms to attain this object. I am, however, firmly of the belief that it is not so much the endeavor to bring in people to this country that is going to solve our problem, as making the conditions in the country so attractive that people will desire to come of their own accord. Probably one of the most potent factors in accomplishing this result will be the introduction of necessary capital to develop our natural resources and the many industries that can be built upon them. I am glad to know that there are many forces at work to bring about this much desired result, and one of the most significant of these is the presence at this exhibition of a number of firms representing the great Federation of British Industries, the most important organized association of manufacturers in the world, representing more than twenty-five billion dollars of capital, which, in a recent pronouncement, took cognizance not only of the need of the overseas dominions for increased population, and the necessity for support of the Empire Settlement Act, but also the necessity for the migration of British capital to the overseas Dominions. While they realize that these dominions, as a result of such financial assistance, will, to the full extent of their power, endeavor to develop their own manufacturing industries, which, in many cases, will compete with the goods of the mother country, they take the broad view that, by so doing, these dominions will increase their internal prosperity and thus provide a wider market within the Empire for the mother country's goods. It is within the province of the Canadian National Railways Colonization and Development Department, over which I have the honor to preside, to co-operate with and assist in every way possible, the bringing about of this most desirable condition, and we welcome to this country the pioneer movement of the Federation of British Industries, which we believe will be a potent factor in the upbuilding of the overseas dominion." In concluding he spoke of the part which the transportation systems of the country have played in its development. He pointed out that the section of western Canada which is producing record crops this year, and in which crop failure has seldom been known, notably the Saskatchewan valley, and the northern part of the three prairie provinces owe their development largely to the Canadian National Rys. The development of these steady producers has had a most beneficial effect upon the whole of Canada and had stimulated the manufacturers of the east and provided valuable markets. He pointed out that the Canadian National Rys. serve every one of the nine provinces, and all the principal cities and towns, and, in addition, great areas of undeveloped country which show every indication of being immensely wealthy in mineral deposits. He added that it was necessary for the country to have a railway framework before there can be any density of settlement and the railways of this country were brought into existence to perform no less a task than the turning of our vast waste spaces into populated areas, and he said: "When these are filled with an industrious people yielding traffic, it will be time to apply to the railway

Canadian National Railways' Earnings and Expenses Detailed.

The Dominion Bureau of Statistics, Transportation Branch, has issued the figures given below, of the operations of the Canadian National Rys. steam lines, both in Canada and the United States, for June, 1922 and 1923, and for the six months ended June 30, 1922 and 1923. The Canadian lines include the combined steam railways in Canada, under the Canadian National Ry. Co.'s directors' management, including the former Canadian Northern System, the former Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States and

Canadian Ry., 22.18 miles; Vermont & Province Line Ry., 9.77 miles, and Black Rock Terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair Rivers. The New England lines include the portion of the Montreal-Portland, Me., line from Norton Mills, Que., on the Sherbrooke Subdivision, Portland Division, Montreal District, 132.11 miles from Montreal, to Portland, 165.15 miles, and the Lewiston and Norway Subdivisions, Portland Division, in Maine, 6.68 miles, a total of 172.01 miles. They do not include the Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles, and Vermont & Province Line Ry., 9.77 miles, a total of 33.16 miles, which are included under the C.N.R. Canadian lines.

Operating Revenues	Month of June		Six Months to June 30	
	1923	1922	1923	1922
Canadian lines	\$17,192,990	\$15,365,723	\$95,864,890	\$86,536,785
Duluth, Winnipeg & Pacific Ry.	176,674	194,909	1,811,286	972,666
Grand Trunk Western lines	2,891,840	2,576,260	16,039,105	11,853,145
New England lines	213,645	171,823	1,847,480	1,491,243
Totals	\$20,475,149	\$18,308,715	\$115,062,761	\$100,853,839
Operating Expenses	Month of June		Six Months to June 30	
	1923	1922	1923	1922
Canadian lines	\$16,878,248	\$16,262,084	\$98,592,887	\$91,155,604
Duluth, Winnipeg & Pacific Ry.	173,566	147,522	1,080,923	891,372
Grand Trunk Western lines	1,993,272	1,823,642	11,540,590	9,759,949
New England lines	309,591	199,280	2,120,275	1,490,845
Totals	\$19,354,677	\$18,432,528	\$113,334,675	\$103,297,770
Net Operating Revenues	Month of June		Six Months to June 30	
	1923	1922	1923	1922
Canadian lines	\$314,742	Dr. \$896,361	Dr. \$2,727,997	Dr. \$4,618,820
Duluth, Winnipeg & Pacific Ry.	3,107	47,387	280,363	81,293
Grand Trunk Western lines	898,569	752,618	4,498,515	2,093,196
New England lines	Dr. 95,946	Dr. 27,457	Dr. 272,795	398
Totals	\$1,120,472	Dr. \$128,813	\$1,728,086	Dr. \$2,443,931

some of the tests that reasonably apply to other business from the outset. The western country is only now coming into its own, and it is my prediction that, in the course of a few years, many hun-

dreds of thousands of settlers will be added to its population, and while the settlement of the wooded areas of northern Ontario and Quebec is, of necessity, of a slower character, most satisfactory

progress is being recorded there. It is also our intention to direct attention to the maritime provinces, which offer singular opportunities to the people of the British Isles."

Railway Rolling Stock Orders and Deliveries.

The Russian Soviet Government is reported to have ordered 1,500 locomotives to be paid for in gold.

The Toronto, Hamilton & Buffalo Ry. is in the market for some cars, probably 10 first class, 6 smoking and 6 baggage cars.

The Quebec Development Co. has received one 4-wheel switching locomotive, with cylinders 14 x 22 in., from Montreal Locomotive Works.

The C.P.R., between Aug. 19 and Sept. 14, received 1 steel baggage and express car from National Steel Car Corporation; 50 steel coal cars, 75 tons capacity, from Canadian Car and Foundry Co., and 114 steel underframe box cars 36 ft. long, from its Angus shops, Montreal.

The 1,000 automobile cars, which Canadian National Rys. have ordered from the Pressed Steel Car Co., as stated in our last issue, are being built to the same specifications as the 600 being built by Canadian Car and Foundry Co., and the 400 being built by National Steel

" trailing truck	47,000 lb.
" total engine	270,000 lb.
" tender	152,000 lb.
Wheelbase, driving	13 ft.
" total engine	33 ft. 10 in.
" total engine and tender	65 ft.
Cylinders, diar. and stroke	24 x 28 in.
Driving wheels, diar.	69 in.
Engine and tender truck wheels, diar.	33 in.
Trailing truck wheels, diar.	45 in.
Journals	main 10½ x 13 in.
"	others 10 x 13 in.
" engine truck	6½ x 12 in.
" trailing truck	9 x 14 in.
" tender truck	5½ x 10 in.
Boiler, type	radial stay
" pressure	200 lb.
Firebox, length and width	108½ x 75¼ in.
Grate area	56.5 sq. ft.
Tubes, no. and diar.	228 2 in.
Flues, no. and diar.	32 5½ in.
Tubes and flues, length	20 ft.
Heating surface, tubes	2,378 sq. ft.
" flues	897 sq. ft.
" arch tubes	27 sq. ft.
" firebox	215 sq. ft.
" total	3,517 sq. ft.
Tractive power	39,700 lb.
Factor of adhesion	4.4
Power reverse gear	Barco
Tender, frame	steel channels
" water capacity	8,000 gals.
" coal capacity	10 tons

The Canadian National Rys., during

nos. 8650 to 8669, completed June 30; 35 first class, nos. 5020 to 5060, out of an order for 41; leaving 6 first class, 12 depressed flat, nos. 699950 to 699961, 30 sleeping, nos. 1559 to 1588, and 750 box, 60 tons capacity, nos. 500500 to 501249, still on order; from Eastern Car Co., 206 general service bodies only, nos. 131000 to 131271, out of an order for 272; 100 general service, nos. 131272 to 131371, completed July 5; 100 hopper, nos. 119550 to 119649, completed April 13; leaving 500 box, nos. 426500 to 426999, 66 general service, bodies only, and 8 snow ploughs, nos. 55262 to 55269, still on order; from National Steel Car Corporation, 717 box, 40 tons capacity, nos. 427000 to 427999, out of an order for 1,000; 50 express refrigerators, nos. 10050 to 10099, completed Aug. 31; leaving 283 box, 40 tons capacity, 400 automobile, nos. 580600 to 580999, 10 baggage, nos. 8670 to 8679, and 250 box, 60 tons capacity, nos. 501250 to 501499, still on order; from Pressed Steel Car Co., 100 general service, nos. 79700 to 79799, for Grand



Mikado Locomotive, Canadian National Railways.

This is one of 35 mikado locomotives being built for the C.N.R. by Montreal Locomotive Works, of which 25 have been delivered. The chief details are as follows: Weight on drivers, 227,600 lb.; weight of engine, working order, 314,800 lb.; weight of tender, 185,100 lb.; cylinders, 27 x 30 in.; boiler pressure, 185 lb.; driving wheel diameter, 63 in.; maximum tractive effort, 54,600 lb.; factor of adhesion, 4.16.

Car Corporation, details of which have already been given.

Canadian National Rys. have received the following additions to rolling stock recently,—22 mikado (2-8-2) locomotives, cylinders 27 x 30 in. out of an order for 25, from Montreal Locomotive Works, 1 mikado (2-8-2) locomotive from Canadian Locomotive Co., 18 first class and 10 mail and express cars from Canadian Car and Foundry Co., Montreal, and 35 cabooses converted from box cars, from Canadian Car and Foundry Co., Amherst, N.S.

The U.S. Commerce Department reports U.S. locomotive builders' operations as follows: Locomotives shipped from plants in Aug., 1923, 272, compared with 239 in July, 1923, and 151 in Aug., 1922. In the first 8 months of 1923, 1,916 locomotives were shipped, compared with 641 in the same period in 1922. Unfilled orders on hand at the end of August, 1923, totalled 1,497, compared with 1,738 at the end of July, 1923, and 1,035 at the end of Aug., 1922.

The Toronto, Hamilton & Buffalo Ry. has ordered 2 Pacific type (4-6-2) locomotives from Montreal Locomotive Works. Following are chief details:—

Weight on drivers	175,000 lb.
" engine truck	48,500 lb.

this year, up to Aug. 31, received the following rolling stock: Locomotives, from Montreal Locomotive Works, 23 mikados, out of an order for 35, nos. 3525 to 3559; from Canadian Locomotive Co., 16 mountain type, nos. 6000 to 6015, completed Aug. 18; leaving 10 mikados, nos. 2560 to 3569, 10 six-wheel switchers, nos. 7509 to 7518, and 7 eight-wheel switchers, nos. 8215 to 8221, still on order; from American Locomotive Co., Schenectady, N.Y., 8 mikados, nos. 3740 to 3747, for Grand Trunk Western, completed Aug. 11; leaving 10 mikados, nos. 5748 to 3757; 5 Pacifics, nos. 5627 to 5631; and 5 eight-wheel switchers, nos. 8300 to 8304, for Grand Trunk Western, and 16 consolidations, nos. 460 to 475, and 8 eight-wheel switchers, nos. 500 to 507, for Central Vermont Ry., still on order; from Lima Locomotive Co., Lima Ohio, 3 six-wheel switchers, nos. 7519 to 7521, completed June 12, and 5 eight-wheel switchers, nos. 8222 to 8226, completed June 30, for Grand Trunk Western. Cars, from Canadian Car & Foundry Co., 1,000 box, nos. 428000 to 428999, completed May 31; 100 Hart-Otis ballast, nos. 99500 to 99599, completed April 17; 600 automobile, nos. 580000 to 580599, completed July 26; 10 mail and express, nos. 9720 to 9729, completed Aug. 25; 20 baggage,

Trunk Western, completed June 21; leaving 1,000 automobile cars still on order.

U.S. Railways' Financial Results—U.S. class 1 railways in July had a net operating income of \$84,591,400, equivalent to an annual rate of return of 4.93% on their valuation. The eastern carriers earned at the equivalent annual rate of 5.6%, the western at 4.05%, and the southern at 5.26%. In July, 1922, the net operating income for all class 1 roads was \$69,321,000, equivalent to an annual rate of return of 4.12%. Operating revenues for July this year, \$535,577,300, were 20.7% more than in July, 1922, and operating expenses, \$414,333,300, were 21.5% more. For the first 7 months of 1923, net operating income was \$528,219,300, representative of an annual return of 5.51%, compared with net operating income of \$418,394,650 in the first 7 months of 1922, representative of an annual return of 4.46%.

Machinery Orders.—Canadian National Railways have ordered as follows: One 96 in. x 84 in. x 45 ft. Bertram frame planer complete with motor; one Bertram Bemont heavy 3-head locomotive frame slotting machine with motor and electrical equipment; one Morris standard type B 12½ ton fixed gantry crane.

Mainly About Railway People Throughout Canada.

A. H. Aishton, President, American Railway Association, was a guest at a luncheon given by Lady Frederick Williams-Taylor at Montreal, Sept. 7, for the Earl of Birkenhead. Other guests included Sir Henry Thornton and the Hon. Marguerite Shaughnessy, daughter of Lord Shaughnessy.

Stuart Armour, owner and manager of the Cadboro Beach Hotel, Victoria, B.C., who died here suddenly on Sept. 1, was Manager of the C.P.R. Hotel at Sicomous, B.C., from March 27, 1914, to April 1, 1915, after which he managed the Chateau Lake Louise, near Laggan, Alta., for a season, and in Feb., 1916, was appointed Manager of the Mount Staphen House in British Columbia, resigning from the service Oct. 31, 1917. He was a son of the late Hon. J. D. Armour, Chief Justice of Ontario, was born Nov. 16, 1865, and educated at Upper Canada College, Toronto, and the University of Oregon, graduating LL.B., after which he practised in Oregon and Washington, and eventually became interested in mining. He was a brother of Mrs. Hayter Reed, wife of the former Manager of Hotels, C.P.R.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, who left Ottawa, Aug. 9, for England, and joined the Minister at the League of Nations meeting at Geneva, Switzerland, later, returned to London, about the middle of September, and will remain there during the Imperial conference of premiers, to be available in regard to G.T.R. shareholders' claims.

David R. Bell, C.P.R. conductor, Toronto, who died at Guelph, Ont., Aug. 5, from pneumonia, left real estate valued at \$11,972, and personal estate \$10,309. His widow receives a life interest, and at her death the estate will be divided between the son and daughter.

William Edward Gladstone Bishop, who has been appointed Division Freight Agent, Canadian National Rys., North Bay, Ont., was born at Central Clarence, N.S., Dec. 4, 1888, and entered railway service, Aug. 5, 1908, since when he has been, to Oct., 1910, stenographer, District Freight Agent's office, Intercolonial Ry., Halifax, N.S.; Oct., 1910, to Oct., 1914, in General Freight Agent's office, Intercolonial Ry., Moncton, N.B.; Oct., 1914, to May 1, 1916, chief clerk, District Freight Agent's office, Canadian Government Rys., Halifax, N.S.; May 1, 1916, to Oct. 1, 1919, Travelling Freight Agent, Canadian Government Rys., Halifax, N.S.; Oct. 1, 1919, to June 16, 1923, District Freight and Passenger Agent, Canadian National Rys., Cochrane, Ont.

Sir George McLaren Brown, European General Manager, C.P.R., London, Eng., has been elected Honorary Vice President of the Canadian Chamber of Commerce, there, in appreciation of his valuable services to the organization, of which he was President for two years.

Allan Cameron, Oriental Manager, C.P.R., Hong Kong, China, who has been in Canada on a business trip, sailed from Vancouver, early in September, for Hong Kong, accompanied by Mrs. Cameron.

S. S. Clarke, relieving agent, Canadian National Rys., at St. Walburg, Sask., was found dead in a section house there recently, the circumstances indicating suicide.

C. H. N. Connell, District Engineer of Construction, Canadian National Rys.,

Toronto, Mrs. Connell and their infant daughter, spent the first half of September at Lac Echo, Que.

Senator N. Curry, Chairman of the Board, Canadian Car and Foundry Co., Montreal, is a director of the re-organized Riordon Co., Ltd.

J. E. Dalrymple, Vice President, Traffic Department, Canadian National Rys., went over the Atlantic Region lines in August, visiting New Brunswick, Nova Scotia and Prince Edward Island, accompanied by Mrs. Dalrymple, and by several traffic officials, including A. T. Weldon, Traffic Manager, Atlantic Region, and M. F. Tompkins, General Freight Agent, Moncton, N.B. The party drove from Mulgrave, N.S., to Guysboro, where they spent a week end fishing at Jost Camp, Moon Lake.

C. E. W. Dodwell, who has been appointed Superintending Engineer for the



F. A. Rutherford,
Superintendent of Transportation, Montreal
District, Central Region, Canadian
National Railways.

Maritime Provinces, Dominion Public Works Department, was engaged in railway construction in Nova Scotia from 1874 to 1877, and in 1881 entered C.P.R. service and was engaged on the preliminary surveys and estimates for the St. Lawrence bridge, and later was Resident Engineer in charge of construction of the C.P.R. from Montreal to Vaudreuil, resigning from the service in 1889 to engage in private practice. Prior to his present appointment he was Resident Engineer for the Public Works Department at Halifax, N.S.

Jas. Edward, District Freight Agent, Canadian National Rys., Montreal, and Mrs. Edward, returned to Montreal, Sept. 15, after a holiday at their summer cottage at Brule, N.B.

Mrs. Fairbairn, wife of J. M. R. Fairbairn, D.Sc., Chief Engineer, C.P.R., returned to Montreal, early in September, from Stony Lake, Ont.

Charles S. Fee, formerly Passenger Traffic Manager, Atchison, Topeka and Sante Fe Ry., died at San Francisco, Sept. 25, aged about 70.

W. P. Fitzsimons, who has been appointed Manager, Industrial Department, Atlantic and Central Regions, Canadian National Rys., Montreal, was born at Detroit, Mich., Oct. 27, 1868, and entered railway service as messenger in Assistant General Freight Agent's office, G.T.R., at Detroit, April 15, 1884, since when he has been consecutively to Feb. 10, 1896, in various positions general freight department, same road, at Detroit; Feb. 1896, to Jan. 1897, Travelling Freight Agent, same road; Jan. 1897 to Nov. 1898, secretary to General Freight Agent, same road, Montreal; Nov. 1898 to May 1900, chief clerk, General Freight Agent's office, same road, Montreal; May 1900 to April 1902, Division Freight Agent, same road, Detroit, Mich., and Manager, Grand Trunk Despatch Fast Freight Line; May 1902 to Sept. 1907, Manager, Lackawanna-Grand Trunk Line, Buffalo, N.Y.; Sept. 1907 to April 1909, Manager, Bureau of Transportation and Manufacturers, Detroit, Mich., Board of Commerce; April 1909 to March 9, 1923, Commissioner of Industries, G.T.R., Montreal; March 9 to Sept. 1, 1923, Commissioner of Industries, Atlantic and Central Regions, Canadian National Rys., Montreal.

D. E. Galloway, Assistant to President, Canadian National Rys., and Mrs. Galloway returned to Montreal, Sept. 10, on the s.s. Doric from Great Britain.

Hon. G. P. Graham, Minister of Railways and Canals, who is attending the League of Nations meetings at Geneva as one of the two Canadian representatives, was, according to a press cablegram, selected to present the transportation question to the assembly of the League. Following the admission of the Irish Free State to membership in the League on Sept. 10, Mr. Graham entertained President Cosgrave at dinner at Geneva.

Sir John S. Hendrie, K.C.M.G., C.V.O., of Hamilton, Ont., a former chairman of the Ontario Legislature's Railway Committee and a former Lieutenant-Governor of Ontario, who died at Baltimore, Md., July 17, left an estate valued at \$1,368,208.89. After providing an annuity of \$15,000 for the widow, and making several bequests, the residue is divided equally between a son and daughter.

C. R. Hosmer, one of the C.P.R. directors, returned to Montreal, Sept. 15, from his summer house at St. Andrews-by-the-Sea, N.B.

J. J. Howard, operator, Canadian National Rys., Superior Jct., Ont., was found dead in a well, near there, at the end of August, the circumstances pointing to suicide.

Miss Hungerford, daughter of S. J. Hungerford, Vice President, Operation and Construction Departments, Canadian National Rys., returned to Montreal, Sept. 9, on the C.P.R. s.s. Montclare, from Great Britain.

John R. Kent, who acted as agent, Michigan Central Ry., Niagara Falls, Ont., during the absence of J. Grant on his annual holiday, has been sentenced to two years in Kingston penitentiary, for stealing \$160 from the ticket office. He handed back \$87 and pleaded guilty.

J. W. Kneeshaw, Stationery Agent, Grand Trunk Western, Canadian National Rys., Detroit, Mich., retired on pension, Sept. 1, after 40½ years service with the G.T.R., latterly Canadian National Rys. He had been in the Stationery Department since 1885, and Stationery Agent since July 1, 1896.

L. F. Loree, President, Delaware and Hudson Co., arrived at Quebec, Que., Sept. 10, from Europe, on the s.s. City of Paris, which was chartered by the C.P.R., to relieve the s.s. Empress of Scotland, which met with an accident recently.

Sir Donald Mann, formerly Vice President, Canadian Northern Ry., returned to Toronto, early in September, after touring Russia, paying special attention to the condition and operation of the railways.

W. R. MacInnes, Vice President, Traffic, C.P.R., and **D. Forbes Angus**, Montreal, were the guests of **F. W. Peters**, General Superintendent, British Columbia District C.P.R., and **Mrs. Peters**, at Vancouver, B.C., at the end of August.

Mrs. W. R. MacInnes, wife of **W. R. MacInnes**, Vice President, Traffic, C.P.R., returned to Montreal, early in September, from England, where she had been visiting her daughter, **Mrs. Bruce Reford**.

Mrs. A. D. MacTier, wife of **A. D. MacTier**, Vice President, Eastern Lines, C.P.R., and **Miss Adeline MacTier**, returned to Montreal early in September, after spending the summer at Murray Bay, Que., and Smallcourt, Me.

T. W. McBeath, Assistant Master Mechanic, Moncton Division, Atlantic Region, Canadian National Rys., Moncton, N.B., was seriously injured in a rear end collision, Sept. 5, suffering severe cuts about the head, as well as a broken arm.

Donald McCormick, aged 15, son of **R. S. McCormick**, General Superintendent, Algoma Central & Hudson Bay Ry., was found dead in his bedroom, Sept. 28, having presumably been killed by the accidental discharge of a revolver, which he was apparently preparing for a shooting trip the next day.

H. H. Melanson, General Passenger Traffic Manager, Canadian National Rys., with **Mrs. Melanson** and family, returned to Montreal, Sept. 6, after spending the summer holidays at Cape Brule, N.B.

J. T. Monroe, General Passenger Agent, Louisiana Lines, Southern Pacific Ry., New Orleans, La., visited Victoria and Vancouver, B.C., recently.

Oscar Masse, who has been appointed Trainmaster, Cornwall Subdivision, St. Lawrence Division, Montreal District, Central Region, Canadian National Rys., Montreal, was born at Coteau, Que., Nov. 7, 1884, and entered G.T.R. service Nov. 1, 1901, since when he has been, to Feb. 25, 1903, freight clerk, Coteau, Que.; Feb. 25 to Dec. 1, 1903, operator, Coteau Jct., Que.; Dec. 1, 1903 to Aug. 10, 1905, operator, Montreal; Oct. 15, 1905 to Nov. 7, 1908, dispatcher, Montreal; Nov. 7, 1908 to April 25, 1910, dispatcher, Island Pond, Vt.; April 25, 1910 to Oct. 13, 1911, dispatcher, Montreal; Oct. 13, 1911 to Jan. 16, 1922, Night Chief Dispatcher, and Chief Dispatcher, Montreal; Jan. 16, 1922 to June 1, 1923, Terminal Inspector, Transportation Department, G.T.R., Montreal; June 1 to Aug. 1, 1923, Inspector of Terminals, Montreal District, Central Region, Canadian National Rys., Montreal.

L. E. Moore, Roadmaster, Division 3, Timiskaming & Northern Ontario Ry., Haileybury, Ont., died at the Wellesley Hospital, Toronto, Sept. 5, after a short illness, aged 40.

Sir Augustus Nanton, of Winnipeg, one of the C.P.R. directors, and President, Winnipeg Electric Ry., has accepted the honorary treasurership of the Crosby Hall fund in Canada, to provide \$5,000 to establish a Canadian room in the Crosby Hall International Club House for university women, to be built in London, Eng.

Hon. Frank Oliver, who has been appointed a member of the Board of Railway Commissioners, to succeed the late **J. G. Rutherford**, C.M.G., H.A.R.C.V.S., was born in Peel County, Ont., in 1853, a son of the late Allan Bowsfield, and he adopted his mother's maiden name when he went west, first to Winnipeg and later to Edmonton, Alta., where he founded the Edmonton Bulletin in 1880, of which he is still the principal owner. He represented Edmonton in the Northwest Council from 1883 to 1888, and in the Northwest Assembly from 1888 until his resignation in 1896. From 1886 to 1911, he represented the same constituency in the House of Commons, and from April 8, 1905 to the resignation of the Laurier Government in Oct. 1911, was Minister of the Interior and Superintendent-General of Indian affairs. He acted as a member of the Royal Conservation Commission in 1909, and travelled extensively in the Northwest Territories in 1910. He is a Methodist and a vice president of the Dominion Alliance.

Charles G. Orttenberger, who has been appointed General Western Passenger Agent, Canadian National Rys., Chicago, Ill., was born at Port Huron, Mich., Jan. 21, 1869, and entered G.T.R. service in Dec., 1884, since when he has been to May 1889 clerk, Port Huron, Mich.; May 1889 to Feb. 1896 in Audit Department, Detroit, Mich.; Feb. 1896 to April 1907, chief clerk, city ticket office, Chicago, Ill.; April 1909 to Oct. 1918, City Passenger and Ticket Agent, Chicago; Nov. 1919 to Mar. 1, 1920, General Agent, Passenger Department, Grand Trunk Western Lines Rd. (U.S.R.A.) Chicago; March 1, 1920 to June 16, 1923, General Agent, Passenger Department, Canadian National Rys., Chicago, Ill.

Alfred Price, formerly General Manager, Eastern Lines, accompanied by his daughters, sailed from Quebec, Sept. 12, by the s.s. Melita, for England, intending to spend the winter there, and in France. Since his retirement, on account of ill health, he has spent considerable time in the south of England and France, and he visited a number of friends in Canada during the past summer.

Stanley Jay Raymond, who has been appointed Commissioner of Industries, Napanee, Scotia Jct., North Bay, O'Brien, and west to and including Superior Jct., Current, Sarnia and Windsor, Central Region, Canadian National Rys., Toronto, was born at Trenton, Ont., March 10, 1895, and commenced railway work during school holidays in 1911 with an extra gang, and has been, from Feb. 1913 to March 1914, clerk, local freight office, Canadian Northern Ry., Trenton, Ont.; March 1914 to May 1915, same position, Port Hope, Ont.; May to August 1915, clerk in Superintendent's office, Canadian National Rys., Trenton, Ont.; from Aug. 1915 to Feb. 1917, was lieutenant in the Canadian Expeditionary Forces;

and from Feb. to Aug. 1917, was in charge of traffic in the construction of the Royal Air Forces camps, all in Canada; Sept. 4, 1917 to April 1, 1918, Travelling Freight Agent, Canadian Northern Ry., Toronto; April 1 to July 3, 1918, Travelling Freight Agent, Canadian National Rys., Hamilton, Ont.; July 5, 1918, to Jan., 1919, overseas as transport officer, Canadian Expeditionary Forces; Feb. 18, 1919 to July 22, 1920, chief clerk, Industrial and Resources Department, Canadian National Rys., Toronto; July 22, 1920 to March 1, 1923, chief clerk, Industrial Department, G.T.R., Montreal; March 1 to Sept. 1, 1923, chief clerk, Industrial and Resources Department, Canadian National Rys., Montreal.

Miss E. E. Reid, only daughter of Senator **J. D. Reid**, formerly Minister of Railways and Canals, was married to **Aemilius Jarvis**, Jr., of Toronto, at Prescott, Ont., Sept. 1.

H. D. Reid, Vice President, Reid Newfoundland Co., St. John's, Nfld., and **Mrs. Reid**, sailed from Quebec for Great Britain, on the C.P.R. s.s. Empress of France Sept. 18.

W. N. Rippey, Superintendent, Moncton Division, Atlantic Region, Canadian National Rys., Moncton, N.B., took his annual holiday during September, his place being taken by **C. S. Pushie**, Relieving Superintendent.

Hon. J. A. Robb, Minister of Immigration and Colonization, has been appointed acting Minister of Railways and Canals, during **Hon. G. P. Graham's** absence in Europe.

Mrs. W. D. Robb, wife of **W. D. Robb**, Vice President, Insurance, Lands, Express, etc., Canadian National Rys., returned to Montreal, at the end of August, after spending the summer at St. Andrews-by-the-Sea, N.B.

Donald Ross, locomotive man, Canadian National Rys., Brockville, Ont., has been presented with the Royal Canadian Humane Society's certificate for preventing loss of life on the railway bridge at Ste. Anne de Bellevue, Que., July 9, 1922.

Herbert J. Russell, who has been appointed General Manager, Newfoundland Government Ry., St. John's, Nfld., was born at Musgrave Harbor, Nfld., Dec. 4, 1891, and entered the Reid Newfoundland Co's service, Sept. 12, 1906, since when he has been, to June 25, 1907, stenographer and clerk, Newfoundland Express Co.; June 25, 1907, to Jan. 17, 1913, chief clerk to Superintendent, secretary to General Superintendent, and acting Chief Dispatcher, Reid Newfoundland Ry.; Jan. 17, 1913, to Nov. 27, 1917, Assistant to Superintendent; Nov. 27, 1917, to Aug., 1922, Superintendent, Eastern Division; Aug., 1922, to Sept. 1, 1923, Superintendent, Eastern Division, Assistant to General Manager, and latterly acting General Manager, all at St. John's, Nfld.

Frederick A. Rutherford, who has been appointed Superintendent of Transportation, Montreal District, Central Region, Canadian National Rys., Montreal, was born at Parkhill, Ont., Sept. 16, 1877, the son of the late **W. W. Rutherford**, for many years principal of the Collegiate Institute, Aylmer, Ont. He entered railway service, Jan. 18, 1894, since when he has been, to June 1903, assistant agent and telegraph operator, G.T.R., Aylmer, Ont., and other points; June 1903 to July 1910, dispatcher, G.T.R., London, Ont.; July 1910 to May 1911, Night Chief Dispatcher, G.T.R., London, Ont.; May 1911

to Jan. 1913, Chief Dispatcher, G.T.R., Stratford, Ont.; Jan. 1913 to March 1914, Chief Dispatcher, G.T.R., London, Ont.; March 1914 to June 1917, Trainmaster, G.T.R., Battle Creek, Mich.; June 1917 to Feb. 1918, Trainmaster, G.T.R., Durand, Mich.; Feb. 1918 to Jan. 1919, Inspector of Transportation, G.T.R., Montreal; Jan. 1919 to Nov. 1921, Trainmaster, G.T.R., London, Ont.; Nov. 1921 to July 31, 1923, Passenger Trainmaster, Southwestern Ontario District, Central Region, Canadian National Rys., Toronto. W. A. Rutherford, chief accountant, Bank of Toronto, is a brother.

Mrs. F. C. Salter, wife of F. C. Salter, Manager, Foreign Department, Canadian National Rys. Express Department, returned to Montreal at the end of August, accompanied by her son, after a two months visit to California and other Pacific coast places.

David Saulter, agent, C.P.R., Parkdale, Toronto, died there, Sept. 7, aged 60. He was born in Toronto, and started railway work when about 12 years old, as messenger, Toronto, Grey and Bruce Ry., and later became telegraph operator, train dispatcher and freight agent, remaining in the freight offices when that railway was absorbed by the C.P.R. in 1884.

Capt. F. J. G. Smith, Publicity Agent in Great Britain, for Canadian National Rys., arrived at Montreal, early in September for an educational tour over the system.

Lord and Lady Shaughnessy, accompanied by their daughter, Hon. Mrs. H. W. Beauchamp and family, returned to Montreal, Sept. 6, after spending several months at their summer home at St. Andrews-by-the-Sea, N.B.

J. R. Shaw is Agent, Ocean Traffic, C.P.R., Manila, Philippine Islands, not Passenger Agent, as stated under "Birthdays of Transportation Men in June," in our June issue.

W. H. Stewart, who represented the Bethlehem Steel Co., at Montreal, for several years, has been appointed Vice President, Bethlehem Steel Export Corporation, 25 Broadway, New York. He was, for many years in the Stores, Mechanical and Operating Departments, C.P.R. In the early part of 1912 he was chief clerk to H. H. Vaughan, at that time Assistant to the Vice President, and subsequently was acting Assistant Superintendent at Ottawa. In Aug. 1912 he was appointed Assistant Superintendent, District 4, Eastern Division, Ottawa, and in Sept. 1913, Assistant Superintendent, District 1, Eastern Division, Farnham, Que., resigning the latter position shortly after the commencement of the war, to enter the British Ministry of Munition's service. At the close of the war he entered the Bethlehem Steel Co's service.

Sir Thomas Tait, President, Fredericton and Grand Lake Coal and Ry. Co., and Lady Tait, returned to Montreal at the end of August, after spending the summer at St. Andrews-by-the-Sea, N.B. Miss Winnifred Tait, who has been spending the summer on the European continent, is expected home during October.

Sir Henry Thornton, President, Canadian National Rys., was a guest at Zetland Masonic Lodge annual Canadian night at Toronto, Sept. 28, and responded to the toast of Canada, which was proposed by Sir Edmund Walker, President, Canadian Bank of Commerce.

S. G. Tiffin, who has been appointed Commissioner of Industries, east of Nap-

anee, Scotia Jct., North Bay and O'Brien, Central Region, Canadian National Rys., Montreal, was born at Hamilton, Ont., and entered railway service April 1, 1886, since when he has been, to May 1888, clerk, Local Freight Office, G.T.R., Stratford, Ont.; May 1888 to July 1890, secretary to Superintendent, G.T.R., Stratford, Ont.; July 1890 to May 1891, secretary to General Manager, Chicago and Grand Trunk Rd., and Detroit, Grand Haven & Milwaukee Ry., Detroit, Mich.; May 1891 to Oct. 1892, chief clerk to General Agent, same roads, Saginaw, Mich.; Oct. 1892 to Nov. 1893, Travelling Freight Agent, Commercial Express Fast Freight Line, Rockford, Ill.; Nov. 1893 to Feb. 1898, Travelling Freight Agent, Wisconsin Central Ry., Milwaukee, Wis.; Feb. to Nov. 1898, Wisconsin Agent, North Shore Despatch Fast Freight Line, Milwaukee, Wis.; Jan. 1899 to Nov. 1900, Wisconsin Agent, Reading Despatch Fast Freight Line, Milwaukee, Wis.; Nov. 1900 to May 1910, Travelling Freight Agent, Intercolonial Ry., Toronto; May 1910 to Aug. 1913, General Agent, Intercolonial Ry., Toronto; Aug. 1913 to Feb. 1914, Division Freight Agent, Canadian Government Rys., St. John, N.B.; Feb. 1914 to June 1915, Division Freight Agent, C.G.R., Montreal; June 1915 to Jan. 1919, Assistant General Freight Agent, C.G.R., Montreal; Jan. 1919 to March 9, 1923, Assistant General Freight Agent, Eastern Lines, Canadian National Rys., Montreal; March 9 to Sept. 1, 1923, Assistant General Freight Agent, Central Region, Canadian National Rys., Toronto.

Guy Tombs, Transportation Agent, Mrs. Tombs, and their son, Lawrence, returned to Montreal, Sept. 2, on the s.s. Megantic, after a trip to Great Britain and the European continent.

William Walkden, who has been appointed Bridge Engineer, Western Region, Canadian National Rys., Winnipeg, was born at Alderley Edge, Cheshire, Eng., June 11, 1885, and was educated at the public school, Wilmslow, the Technical School, Stockport, and School of Technology, Manchester, Eng. From 1902 to 1906, he served an apprenticeship with P. Pierce and Sons, architects, surveyors and engineers, Stockport, and remained with them as assistant until 1907. He entered Canadian railway service in Nov. 1907, since when he has been, to July 1909, draftsman, Chief Engineer's office; July 1909 to May 1912, draftsman and designer, bridge department; May 1912 to Feb. 1917, chief draftsman and assistant to bridge engineer; Feb. 1917 to April 1919, acting bridge engineer; April 1919 to Aug. 1920, bridge engineer, all with Canadian Northern Ry., latterly Canadian National Rys.; Aug. 1920 to July 1923, Assistant Bridge Engineer, Canadian National Rys., including Grand Trunk Pacific Ry., all at Winnipeg. He has qualified by examination as professional associate of the Surveyors Institute of England, and is a member of the American Railway Engineering Association, and of the Association of Professional Engineers of Manitoba, and associate member of the Engineering Institute of Canada.

Charles Marshall Walton, who has been appointed Superintendent, Montreal Terminals, Montreal District, Central Region, Canadian National Rys., Montreal, was born there, Jan. 24, 1884, and entered G.T.R. service Jan. 1, 1900 as assistant clerk, Stationery Department; Jan. 1 to May 3, 1900, clerk to Superintendent; May 3, 1900 to March 11, 1901,

clerk; March 11, 1901 to Oct. 25, 1905, clerk to Superintendent of Transportation; Oct. 25, 1905 to Oct. 20, 1906, out of service; Oct. 20, 1906 to Aug. 6, 1907, timekeeper, Transportation Department; Aug. 6, 1907 to May 1, 1911, clerk, Transportation Department; May 1 to Jan. 21, 1913, car distributor; Jan. 21, 1913 to Nov. 1, 1915, chief clerk, Transportation Department, all at Montreal; Nov. 1, 1915 to Nov. 18, 1917, Assistant Trainmaster, Island Pond, Vt.; Nov. 18, 1917 to Dec. 1, 1918, chief clerk to General Superintendent of Transportation, Montreal; Dec. 1, 1918 to Feb. 1, 1920, chief clerk to General Superintendent of Car Service, Montreal; Feb. 1, 1920 to July 19, 1921, Terminal Inspector, Transportation Department, Montreal; July 19, 1921 to Jan. 16, 1922, acting Superintendent of Terminals, Transportation Department, Montreal; Jan. 16, 1922 to June 1, 1923, Superintendent of Transportation, Eastern Lines, G.T.R., Montreal; June 1 to Aug. 1, 1923, Superintendent of Transportation, Montreal District, Central Region, Canadian National Rys., Montreal.

D. A. Wanklyn, son of F. L. Wanklyn, General Executive Assistant, C.P.R., Montreal, was married at Murray Bay, Que., recently to Miss Hazel Kennedy.

Howard H. Ward, who has been appointed Deputy Minister of Labor, Ottawa, Ont., was born at Arkona, Ont., Dec. 17, 1884. He entered railway service with the Grand Trunk Ry. May 4, 1903, since when he has been, to July 31, 1903, junior clerk, and stenographer, Superintendent's office, Stratford, Ont.; Aug. 1 to Nov. 30, 1903, clerk and stenographer to agent, Brantford, Ont.; Dec. 1, 1903 to March 20, 1905, stenographer, March 21, 1905 to Feb. 21, 1907, secretary; Feb. 22, 1907 to Jan. 31, 1911, chief clerk, Superintendent's office, Stratford, Ont.; Feb. 1, 1911 to Dec. 31, 1912, chief clerk, and from Jan. 1, 1913 to Aug. 31, 1923, chief clerk and assistant, Operating Department, Board of Railway Commissioners, Ottawa, Ont.

Richard Wright, who has been appointed Passenger Trainmaster, Southwestern Ontario District, Central Region, Canadian National Rys., Toronto, was born at London, Ont., March 15, 1885, and entered railway service, Nov. 21, 1902, since when he has been, to Oct. 1, 1909, in various positions in the Freight Department, G.T.R., London, Ont.; Oct. 1, 1909, to Feb. 1, 1913, chief clerk and accountant, G.T.R., London, Ont.; Feb. 1, 1913, to Feb. 1, 1916, General Agent, G.T.R., Brantford, Ont.; Feb. 1, 1916, to Aug. 1, 1923, Division Agent, Transportation Department, G.T.R., latterly Canadian National Rys., Toronto.

The C.P.R. and Greater Winnipeg Water District.—The C.P.R. is reported to have paid the City of Winnipeg recently \$100,000, the balance of the \$200,000 promised towards the installation of a water supply from Shoal Lake. The offer was made by Lord Shaughnessy, then President, in 1906, following which the Greater Winnipeg Water District was formed, and the Shoal Lake project entered upon.

Manitoba Sunday Trains.—The Winnipeg Presbytery is reported to have passed a resolution approving of the Lord's Day Alliance's action in appealing to the Imperial Pricy Council against the recent decision of a Manitoba court declaring the Manitoba Legislature's act authorizing the operation of trains on Sundays to be valid.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Board of Railway Commissioners.—An Ottawa press dispatch of Sept. 13, said that Hon. Frank Oliver, President and principal owner of the Bulletin Publishing Co., Edmonton, Alta., and a former Minister of the Interior, had been appointed a member of the Board of Railway Commissioners, to succeed the late J. G. Rutherford, but that he would not assume his duties for some time, pending the adjustment of private business matters. On Sept. 15, the Prime Minister's secretary advised Canadian Railway and Marine World that the announcement in the dispatch was unauthorized, and that Mr. Oliver had not been appointed up to that date. Another Ottawa press dispatch of Sept. 24, stated that Mr. Oliver had been appointed, and would assume his duties almost immediately.

Canadian National Rys.—W. E. G. BISHOP, heretofore District Freight and Passenger Agent, Cochrane, Ont., has been appointed Division Freight Agent, North Bay, Ont., vice W. M. Hood appointed General Agent, Windsor, Ont. The position at Cochrane has been abolished.

J. CLOUGHESY, heretofore Yardmaster, Danforth, Toronto, has been appointed Assistant Superintendent of Terminals, Montreal District, Central Region, vice A. D. McCarthy, appointed Inspector of Terminals there. Office, Montreal.

W. FEATHERSTONHAUGH, heretofore District Engineer, Prince Rupert, B.C., has been appointed Division Engineer, Calgary, Alta., and the position of District Engineer at Prince Rupert has been abolished.

W. P. FITZSIMONS, heretofore Industrial Commissioner, Atlantic and Central Regions, Montreal, has been appointed Manager, Industrial Department, Atlantic and Central Regions. Office, Montreal.

F. G. GOULD, heretofore Commercial Agent, Toronto, has been appointed Division Freight Agent, Ottawa.

J. T. HALLISEY, Superintendent, Halifax Division, was announced, in a circular issued on Sept. 24, by W. U. Appleton, General Superintendent, Atlantic Region, and approved by L. S. Brown, General Manager, Atlantic Region, as being transferred from Truro to Halifax, on Sept. 30, when the Bridgewater Division was to become a part of the Halifax Division. The position of Superintendent at Bridgewater, held heretofore by J. Bain, being abolished. A Halifax press dispatch of Sept. 27 stated that Hon. E. M. Macdonald, Minister of National Defence, had telegraphed the members of the House of Commons for Colchester and Lunenburg, N.S., as follows: "Orders suspended until Sir Henry Thornton visits Nova Scotia about middle October, when he will receive representations." On Sept. 28, General Superintendent Appleton issued a circular cancelling his circular of Sept. 24.

W. M. HOOD, heretofore Division Freight Agent, North Bay, Ont., has been appointed General Agent, Windsor, Ont., vice G. M. Thomas, appointed Commercial Agent, Hamilton, Ont.

J. C. JACKSON, General Storekeeper, Battle Creek, Mich., has been given juris-

diction over the purchasing of stationery, Grand Trunk Western, and will also have charge of stationery stock, J. W. Kneeshaw, Stationery Agent, Detroit, Mich., having retired under the company's pension plan.

J. F. LEIGHTIZER, formerly locomotive man, Moncton, N.B., who has been acting Master Mechanic, Island Division, Atlantic Region, Charlottetown, P.E.I., since the retirement of Peter McQuaid on the Provident Fund, has been appointed Master Mechanic.

C. H. LUNDGREN has been appointed Night General Yardmaster, Lakehead Division, Manitoba District, Western Region. Office, Fort William, Ont.

J. S. McADAM, heretofore Trainmaster, Rouses Point and Massena and Cornwall Subdivisions, St. Lawrence Division, Montreal District, Central Region, Montreal, has been appointed Trainmaster, Rouses Point and Massena Subdivisions, St. Lawrence Division, Montreal District, Central Region. Office, Montreal.

A. D. MCCARTHY, heretofore Assistant Superintendent, Montreal Terminals, Montreal District, Central Region, Montreal, has been appointed Inspector of Terminals, Montreal District, Central Region, vice Oscar Masse, appointed Trainmaster, Cornwall Subdivision, Montreal. Office, Montreal.

S. McDONALD, heretofore locomotive man, has been appointed Night Locomotive House Foreman, Point Tupper, N.S., vice W. Philpot, appointed Locomotive House Foreman there.

E. W. MACKINNON, heretofore trick dispatcher, New Glasgow, N.S., has been appointed acting Chief Dispatcher, Island Division, Atlantic Region, Charlottetown, P.E.I., vice G. A. Hughes, retired on the pension fund.

W. J. McNABB, has been appointed General Yardmaster, Lakehead Division, Manitoba District, Western Region. Office, Fort William, Ont.

OSCAR MASSE, heretofore Inspector of Terminals, Montreal District, Montreal, has been appointed Trainmaster, Cornwall Subdivision, St. Lawrence Division, Montreal District, Central Region. Office, Montreal.

F. P. NELSON, heretofore Commercial Agent, Hamilton, Ont., has been appointed Commercial Agent, Toronto, vice F. G. Gould, appointed Division Freight Agent at Ottawa.

W. PHILPOT, heretofore Night Locomotive House Foreman, Point Tupper, N.S., has been appointed Locomotive House Foreman there, vice M. A. McLeod, who has retired on the Provident Fund.

E. G. POOLE, heretofore fire inspector, Ontario Government Forestry Department, Cochrane, has been appointed Fish and Game Representative, General Tourist Department, C.N.R. Office, Montreal.

S. J. RAYMOND, heretofore chief clerk, Commissioner of Industries' office, Montreal, has been appointed Commissioner of Industries, Napanee, Scotia Jct., North Bay, O'Brien and west, to and including, Superior Jct., Current, Sarnia and Windsor, Central Region. Office, Toronto.

A. L. SHANLEY, heretofore Industrial Agent, Detroit, Mich., has been appointed Commissioner of Industries, lines west of Detroit and St. Clair Rivers, and his former position has been abolished. Office, Detroit, Mich.

W. H. SWIFT, Jr., has been appointed by W. D. Robb, Vice President, as Radio Engineer. He will supervise all C.N.R. radio activities and development, such as broadcasting arrangements, installation of radio equipment on trains, in hotels, etc. Office, Montreal.

G. M. THOMAS, heretofore General Agent, Windsor, Ont., has been appointed Commercial Agent, Hamilton Ont., vice F. P. Nelson, appointed Commercial Agent, Toronto.

S. G. TIFFIN, heretofore Assistant General Freight Agent, Central Region, Toronto, has been appointed Commissioner of Industries, east of Napanee, Scotia Jct., North Bay, and O'Brien, Central Region. Office, Montreal.

Canadian Pacific Ry.—A. BROWN, heretofore Division Master Mechanic, Nelson Division, British Columbia District, Nelson, has been appointed Division Master Mechanic, Calgary Division, Alberta District. Office, Calgary.

A. J. IRONSIDE, heretofore Division Master Mechanic, Brandon Division, Manitoba District, Brandon, has been appointed Division Master Mechanic, Cranbrook Division, British Columbia District, vice J. McFadyen, appointed Division Master Mechanic, Nelson Division, British Columbia District, Nelson. Office, Cranbrook.

J. W. KEPPEL, heretofore Division Master Mechanic, Regina Division Saskatchewan District, Regina, has been appointed Division Master Mechanic, Edmonton Division, Alberta District, vice G. Moth, appointed Division Master Mechanic, Brandon Division, Manitoba District, Brandon. Office, Edmonton.

E. J. LEMIEUX, heretofore Trainmaster and Division Master Mechanic, Calgary Division, Alberta District, Calgary, has been appointed Division Master Mechanic, Regina Division, Saskatchewan District, vice J. W. Keppel, appointed Division Master Mechanic, Edmonton Division, Alberta District, Edmonton. Office, Regina, Sask.

J. McFADYEN, heretofore Division Master Mechanic, Cranbrook Division, British Columbia District, Cranbrook, has been appointed Division Master Mechanic, Nelson Division, British Columbia District, vice A. Brown, appointed Division Master Mechanic, Calgary Division, Alberta District, Calgary. Office, Nelson.

G. MOTH, heretofore Division Master Mechanic, Edmonton Division, Alberta District, Edmonton, has been appointed Division Master Mechanic, Brandon Division, Manitoba District, vice A. J. Ironside, appointed Division Master Mechanic, Cranbrook Division, British Columbia District, Cranbrook. Office, Brandon, Man.

H. SPARKS has been appointed Night Yardmaster, Medicine Hat, Alta., vice P. N. Stewart, appointed Day Yardmaster there.

P. N. STEWART, heretofore Night Yardmaster, has been appointed Day Yardmaster, Medicine Hat, Alta., vice J. D. Callahan.

Newfoundland Government Ry.—Hon. W. W. Halfyard, Colonial Secretary, issued the following circular on Aug. 29: "As under the provisions of an act passed during the present session of the Legislature, the Newfoundland Government has acquired the railway, steamers, dry dock and express business of the Reid Newfoundland Co., notice is hereby given that the same shall be operated until

further notice under the name of the Newfoundland Government Railway, and the management of H. J. Russell, General Manager." Mr. Russell had previously been acting as General Manager, since R. C. Morgan, Superintendent, Winnipeg Terminals Division, C.P.R., who occupied that position temporarily, relinquished it and returned to Winnipeg. While Mr. Morgan was General Manager, Mr. Russell was Assistant to General Manager, as well as Superintendent, Eastern Division.

Canadian Railway and Marine World for September mentioned a press report stating that a commission to manage the railway had been appointed, consisting of the Colonial Secretary, the Auditor General and the Government Engineer. We have since been advised that the commission consists of Hon. W. W. Halfyard, Colonial Secretary; Hon. Geo. Shea, member of the executive council; and Tasker Cook, Mayor of St. John's. The commission's work is said to be to keep in touch with the management of the railway, etc., but to leave the operating entirely to the General Manager.

The General Manager has announced the following appointments:—

JOHN BAXTER, heretofore Assistant to General Passenger and Ticket Agent, to be Claims Agent, vice M. A. White, heretofore Claims Agent and Trainmaster, appointed Superintendent, Eastern Division.

P. J. CLEARY appointed Assistant to Comptroller, vice C. U. Henderson.

P. M. DUFF appointed Treasurer, vice C. O'Neill Conroy, heretofore General Counsel and Treasurer.

W. F. JOYCE, heretofore Resident Engineer, appointed Chief Engineer, Maintenance of Way.

W. J. KENT, appointed Purchasing Agent, vice H. Crawford.

W. J. MORRISSEY appointed Paymaster.

J. V. RYAN appointed chief clerk to General Manager.

J. A. TITFORD, heretofore Travelling Auditor, appointed Assistant to General Passenger and Ticket Agent, vice John Baxter, appointed Claims Agent.

E. D. WATSON, heretofore Assistant Treasurer, appointed Comptroller, vice H. McNiel.

M. A. WHITE, heretofore Claims Agent and Trainmaster, Eastern Division, appointed Superintendent, Eastern Division, vice H. J. Russell, appointed General Manager.

Railway Accidents Throughout Canada.

—The number of railway accidents throughout Canada, reported to the Board of Railway Commissioners during August, was 335, in which, 4 passengers, 17 employees and 17 others were killed, and 123 passengers, 229 employees and 418 others were injured. Included in "others" are 7 persons killed and 38 injured in 33 highway crossing accidents, in which the crossings were protected in 7 cases by bells, gates or watchmen. Automobiles, motor trucks and motor cycles were concerned in 24 of these accidents, other vehicles in 4, pedestrians in 4, and a steam roller in one.

Railways and Forest Fires.—C. Levitt, Chief of Fire Inspection, Board of Railway Commissioners, is reported to have stated at Winnipeg, Sept. 12, that the amount of damage to forests by fires starting from railways is now very small, owing to the safeguards adopted. The railways, he added, are entitled to a great deal of credit for the way in which they have handled fire protection.

The Canadian Pacific Railway's Peace River and Western Plans.

Considerable speculation was aroused in Alberta and British Columbia by a Winnipeg press dispatch of Aug. 21 stating that the C.P.R. had renewed its agreement with the Alberta Government for the operation of the Edmonton, Dunvegan and British Columbia Ry., and the Central Canada Ry., for 10 years, and had virtually completed negotiations with the British Columbia Government for taking over the Pacific Great Eastern Ry., under an operating lease. The C.P.R. did enter into an agreement with the Alberta Government to operate extensions now under construction of the two lines mentioned, under the existing operating agreement, but the agreement was not extended for 10 years. Following details of the reports in regard to the Pacific Great Eastern Ry. by the Premier and Minister of Railways for British Columbia, and by E. W. Beatty, President, C.P.R., we were officially advised, Sept. 12, that the B. C. Railways Department had no knowledge of any negotiations, such as suggested, taking place.

In connection with the general investigation into the country between Peace River and the Pacific coast being undertaken by the C.P.R., one survey party is reported to have returned to Winnipeg, and another is reported to be still out. Two routes are said to be under investigation, from west of the Spirit River, to the Portland Canal, south of Prince Rupert. This would appear to indicate that in addition to the suggested linking up of the Edmonton, Dunvegan and British Columbia Ry. with the Pacific Great Eastern Ry., so as to give a through route from the Peace River district to Vancouver, the C.P.R. is investigating the possibility of extending the Central Canada Ry., which crosses the Peace River, at a station of that name, and runs to Berwin, from which point a 13 mile extension westerly is under construction, through to the Pacific coast near Prince Rupert. Such a line would be carried through the Rocky Mountains probably by the Pine River Pass, or one of the other passes surveyed by Canadian Northern Ry. engineers, while investigating possible routes prior to 1905, and in many respects would follow a route surveyed by Dominion Government engineers for the C.P.R., before the adoption of Burrard Inlet as the coast terminus. What the result of these investigations may be, is a matter for the future, and at present is only the merest speculation.

Canadian Contractors' Equipment for Gold Coast.—A large quantity of contractors' equipment, consisting of locomotives, steam shovels, etc., owned by Foley, Welch & Stewart, and used by them on construction work in British Columbia, is being shipped from Vancouver to the Gold Coast Colony, West Africa, where Major General J. W. Stewart, C.B., and Colonel Hon. Angus McDonnell, C.B., C.M.G., are consulting constructional engineers for large harbor development and railway construction work for the Crown Agents for the Colonies.

The Swedish State Rys. management is said to have announced, after a long series of tests, that a fuel saving of 10% can be effected by the use of roller bearings for railway cars.

Algoma Central and Hudson Bay Railway Operations, Etc.

The Lake Superior Corporation's report for the year ended June 30, contains the following references to two of its subsidiaries:—

Algoma Central & Hudson Bay Ry.—The year's operations of the railway company and Algoma Central Terminals resulted in net earnings, before bond interest, of \$37,998.04, against net loss for last fiscal year, before bond interest, of \$95,403.48.

Algoma Eastern Ry.—As predicted in the last report, the International Nickel Co. of Canada resumed mining and smelting operations in Sept., 1922, but the tonnage to begin with was not very great. The present output of about 100,000 tons a month was not reached until March, 1923. This traffic, together with the betterment in business conditions generally, enabled the railway company to reduce a net loss of \$213,716.74 in 1922 to a loss of \$43,523.12 in 1923. Now that the nickel companies are working to capacity, the company's prospects for the fiscal year 1924 are much improved. The line is being adequately maintained.

During the year an agreement was entered into for the sale of 543,738 acres of Algoma Eastern land grant lands for \$1,300,000, a price which your directors consider extremely satisfactory. Of the acreage mentioned 182,291 acres were owned by Lake Superior Corporation, being bought by the Corporation some years ago. The price is payable over a period of years, the last instalment being due on Sept. 24, 1926. When the price is fully paid the Corporation will realize a profit of about \$198,417.

Importance of Using Street Addresses.

In order to secure prompt and correct delivery of letters, etc., it is most important that all letters should bear the street address, and not the names of buildings or street intersections, and the U. S. National Advertising Commission's Postal Committee has urged that all advertisements should contain the street address of the advertiser, which should also appear on letterheads and other printed matter. It is claimed that 50% of advertisements in newspapers omit the street address, and that letters in response to such advertisements which do not give street addresses, must have directory service in the post office, thereby delaying delivery from 8 to 24 hours. The U. S. Postmaster General claims that the directory service in post offices, due to insufficient addresses, involves a loss of about \$1,800,800 annually, and no doubt there is a similarly proportionate loss in Canada. It is stated that unless the burden can be lightened by public co-operation, the U. S. Postmaster General will ask Congress to impose a penalty of 1c on each piece of mail matter requiring directory service. He estimates that over 200,000,000 pieces were given directory service at U. S. post offices during the past fiscal year.

The American Railway Freight Claims Agents' Association opened its annual meeting in Vancouver, B.C., Sept. 14. E. Arnold, General Freight Claims Agent, Canadian National Rys., Montreal, is a member of its general committee.

The C.P.R. Co. has subscribed for \$2,000 of the Dominion Government's refunding loan 1923 5% bonds.

Canadian National Railways Construction, Betterments, Etc.

St. Peters Subdivision Diversion.—This subdivision of the Atlantic Region, on Cape Breton Island, N.S., formerly the Cape Breton Ry., which extends from Point Tupper to St. Peters, 31 miles, is being improved by the construction of a diversion, 2,712 ft. long, starting from the Sydney Subdivision at mile 3.70 from Point Tupper, and connecting with the St. Peters Subdivision at mile 5.65 from Point Tupper. The diversion is nearly all tangent, being connected with the Sydney Subdivision by a 3 degree curve, and coming off tangent for a 6 degree curve on the St. Peters Subdivision. The gradient is $1\frac{1}{2}\%$ to within 600 ft. of the Sydney Subdivision. There are only 2 small pipe culverts on the diversion. The track will be laid with 80 lb. rails, released from the main line. The work is being done by the railways' own forces, under direction of G. W. H. Perley, Division Engineer, New Glasgow Division, Atlantic Region. At the date of our advice, Sept. 10, it was expected to have the grading completed by Sept. 30, and the ballasting early in October. As soon as the diversion is ready for operation, the 5.65 miles of track on the St. Peters Subdivision, to be abandoned, will be taken up.

Halifax & Southwestern Ry. Bridges.—Following are particulars of the 5 bridges which are being rebuilt: Puddle River, mile 27.4, Chester Subdivision, of frame trestle, 256 ft. long, and 33 ft. high, over a tidal inlet, built in 1906 and now at end of its life, being replaced by a second hand 106 ft. deck truss span on reinforced concrete abutments, the remainder of the opening being filled in. Mush-a-Mush River, mile 65.9, Chester Subdivision, a frame trestle 532 ft. long and 51 ft. high, built in 1906 and now at end of its life, being replaced by a 106 ft. deck truss span, one 65 ft. and one 81 ft. deck plate girder spans, all second hand, on reinforced concrete piers and abutments, the remainder of the opening being filled. Annapolis River, mile 52.5, Middleton Subdivision, a 135 ft. through truss span on masonry abutments, old span built in 1888, now too light for traffic and abutments disintegrating, being replaced by a 135 ft. through truss span on the old abutments rebuilt above ground with concrete. Riversdale River, mile 9.6, Middleton Subdivision, and Shannon River, mile 83.6, each $83\frac{1}{2}$ ft. through truss span on masonry abutments, built in 1888 and too light for present traffic, being replaced by through plate girder spans on existing masonry abutments. The authorization for the reconstruction of the last two of these bridges was given by the Board of Railway Commissioners about three years ago. A contract has been given the Dominion Bridge Co. for the superstructures of the Annapolis River, Riversdale River and Shannon River bridges. All the substructure work and filling will be done by the railways' forces. (Sept., pg. 433.)

Hardwood Ridge to Minto.—A. S. Gunn is Assistant Engineer in charge of the construction of the 4.88 mile spur line being built from Hardwood Ridge, mile 58.84, Chester Subdivision, Atlantic Region, to Minto coal mines. (Sept., pg. 433.)

Quebec Station, Etc.—A meeting of the C.N.R. directors was reported on Sept. 7 to have been fixed to be held in Quebec, Sept. 24, at which it was stated

matters connected with the erection of a station and the extension of terminal facilities in the city would be considered. The report further stated that the present facilities are inadequate for the increasing passenger and freight business, and that plans were under consideration for the replacement of the present temporary station in Parent Square, with a new, permanent structure, and for the enlargement of the general terminal facilities. We were advised early in September that the management had no definite plans under consideration for the construction of a new station. The C.N.R. have an agreement with the C.P.R. for joint station facilities at Quebec, and that it appeared to be most unlikely that new separate facilities would be considered.

Donnacona Cutoff.—Tenders were received to Sept. 15, for building a cutoff between Donnacona, Grand Mere Subdivision and mile 16, La Tuque Subdivision, Quebec District, Central Region. Donnacona is at mile 32 from Quebec on a line built by the Canadian Northern Ry. and connecting with the old Quebec & St. John Ry. at Grand Mere; and mile 16, La Tuque Subdivision, is near St. Augustine, on the National Transcontinental Ry. The two lines run comparatively close together from Quebec, and near Donnacona are only about 2 miles apart. The old Canadian Northern line is reported to be subject to landslides, and to cost a good deal to keep open in winter, owing to snow. The reason for building the cutoff is to do away with the necessity of maintaining two lines serving practically the same area, and by diverting the traffic to the National Transcontinental Ry., to make use of the better of the two lines. The diversion will start about half a mile east of Donnacona, mile 30.92, Grand Mere Subdivision, and run to about a mile east of Domburg, mile 15.88, La Tuque Subdivision, and will be 6.30 miles long. The gradients will be 1% uncompensated, with a short stretch of 1.3% momentum; with a minimum of 2 degrees, and a maximum of 4 degrees of curvature. The structures will consist of four concrete box culverts and one overhead crossing of the Montreal highway. The contractor will be required to complete all the work necessary for a single track railway, except tracklaying, ballasting, train fill and buildings, which will be done by the railways' own forces. The construction of the diversion will permit the abandonment and save the maintaining of about 19 miles of track.

Victoria Jubilee Bridge.—Repairs to the highway section of this bridge across the St. Lawrence River, at Montreal, were started Aug. 23, and were expected to be completed by the end of September. Some improvements have been made at the approaches on the Montreal side, to permit the speeding up of vehicular and automobile traffic; the roadway has been resurfaced, and the lighting arrangements have been improved.

Napanee Signals.—Order 34,032, passed by the Board of Railway Commissioners Aug. 14, was summarized in Canadian Railway and Marine World for September as "Approving plan showing proposed lay-out of Canadian National Rys. station at Napanee, Ont." It should have read "Approving Canadian National Rys. plan dated April 21, 1923, showing pro-

posed lay-out of automatic signals at Napanee, replacing proposed interlocking system shown on plan dated Oct. 6, 1921, and approved by order 32,315, March 31, 1922."

Hamilton Improvements.—Following representations by Hamilton, Ont., business man, the C.N.R. Legal Department advised the Board of Railway Commissioners, Sept. 6, that it was willing to let the application for approval of plans for a new station at King St. and Ferguson Ave., remain in abeyance. The Hamilton City Council's railway committee is opposed to the erection of the station at that point, and favors the doing away of the line on Ferguson Ave., and the erection of a station at another point as a part of a general improvement plan, which is being discussed. (Sept., pg. 434.)

Brant County Subway.—Some years ago the Brant, Ont., County Council applied to the Board of Railway Commissioners for an order to compel the G.T.R. to rebuild "on a proper location and of proper dimensions" the subway carrying the Harrisburg branch line over the St. Georges Road, 5 miles north of Brantford. Judgment now has been given, the railway to reconstruct the subway on a line with the highway, and not on a slant, as at present, the width to be 20 ft., and the height to be 14 ft. The county is directed to pay 25% of the extra cost incurred by the change.

London Track Elevation, Etc.—The question of track elevation, etc., in London, Ont., was discussed recently by C. G. Bowker, General Manager, and Major F. L. C. Bond, Chief Engineer, Central Region, with the city council's special committee. The railway representatives are reported to have submitted an estimate of \$8,501,000 as the cost of track elevation. The committee reported subsequently that it had decided to ask the C.P.R. to supply information as to its attitude toward a union station project. The opinion of members of the council appears to be that track elevation is a question for the future, but that an improvement in the situation could be effected by building subways at two or three points.

Huron and Bruce Line.—The relaying of the section of the old Huron and Bruce Ry., between Denfield and Centralia, Ont., with 100 lb. rails, is reported to be in progress, and to be expected to be completed at an early date. This branch leaves the main line at Hyde Park Jct., 4 miles from London, and runs to Wingham, 70 miles. The track has been relaid with 100 lb. rails to Denfield, and the work in progress will take the heavier rail to mile 22 from Hyde Park Jct.

Longlac-Nakina Cutoff.—A press report of Sept. 6, stated that 2 miles of track had been laid from Nakina, Ont., on the cutoff under construction, to Longlac. This line is being built to shorten the distance between eastern points and Winnipeg, by connecting the National Transcontinental Ry. and the Canadian Northern Ontario Ry. It is expected to be completed early in October.

Neebing Terminal Yard.—A press report states that the new terminal yard in Neebing Tp., just outside West Fort William, Ont., was opened for service, Sept. 16. A full description, with plan, was given in Canadian Railway and Marine World for July, pg. 322.

Beaudette Station.—We are officially advised that a contract has been given J. McDermott & Co., Winnipeg, to erect a station building at Beaudette, Minn.

Manitoba and Saskatchewan Fencing.—We are officially advised that a contract has been given A. L. Campbell, Brandon, Man., for the erection of approximately 70 miles of fencing on lines in Manitoba and Saskatchewan.

Saskatchewan District Pipe Lines.—We are officially advised that a contract has been given R. J. McCray, Saskatoon, Sask., for the construction of a pipe line at Clarkboro, mile 484.8, Langham Subdivision, and that the water supply at Flaxcombe, mile 143, Oyen Subdivision, will be built up by the railways' forces.

Avonlea-Gravelbourg Extension.—We are officially advised, in connection with the press report mentioned in our last issue, that a further 14 miles of track was to be laid on this extension towards Swift Current, Sask., that there is no authority to lay track on this or any other branch in the west this year, the construction bill having been rejected by the Senate. (Sept., pg. 434.)

Alberta District Culverts.—We are officially advised that a contract has been given Jamieson Construction Co., Edmonton, Alta., for building culverts on the Smithers Division, Alberta District.

Edmonton Station Restaurant.—A press report states that foundations have been excavated and that material is on the ground, for the erection of a restaurant at the union station, 101st St., Edmonton, Alta.

Brazee Subdivision Bridge.—We are officially advised, in reference to bridge 59.2, that the existing bridge is an 80 ft. deck Howe truss timber span on framed timber piers, with trestle approaches 161 ft. and 443 ft. long, the greatest height of the structure being 98 ft. It was first built in 1911 as a standard frame trestle 1,560 ft. long, and the truss span was inserted in 1916, since when filling operations have reduced the length of the approaches to the figures mentioned above. This new bridge will consist of two 162 deck truss steel spans from a dismantled bridge over the McLeod River, on an abandoned line west of Edmonton, to be erected on concrete piers 70 ft. high with rebuilt trestle approaches of 120 ft. and 105 ft., respectively, the balance of the trestle to be filled.

Brule-Grande Prairie Surveys.—The surveys for a route for a line to serve the Grande Prairie country in northern Alberta, are being made by three parties, viz.: a location party under A. J. Still, Locating Engineer, working from Grande Prairie, southerly towards Brule; another location party in charge of A. J. Gayfer, started at Rock Lake, on the Hay River, to work northerly towards Grande Prairie, following the Sulphur and Muskeg Rivers; and a reconnaissance party under E. M. M. Hill. The latter party made a reconnaissance from Brule to Grande Prairie, via Simoneth River, and at the time of our advice, Sept. 11, had started on its return from Grande Prairie, working by way of Smoky River. The approximate distance between Brule and Grande Prairie is 210 miles, and whether the route to be adopted will follow the Smoky River or the Simoneth River has not been determined. The tapping of the large bituminous coal areas on the Hay River, and anthracite on the Muskeg River and Sheep Creek, will be kept in view in finally deciding the location between Brule and Grande Prairie. (Sept., pg. 424.)

Vancouver Station Grounds.—We were advised at the end of August in connection with the improvements being made in front of the station at Vancouver, B. C., which were described in Canadian Railway and Marine World for Aug., pg. 578, that the earth fill had been levelled and made ready for seeding, and the walks had been completed. The putting in of a sewer across the railway property was 60% completed, and a commencement had been made on the roadway approach from Main St.

Southern New England Ry.—A Providence, R.I., press dispatch of Sept. 6, stated that several gangs of men were at work upon the right of way of this partially built line, between Palmer, Mass., and Providence, work on which had been suspended for several years. The roadbed in Massachusetts is stated to be 85% completed, and that in Rhode Island about 45% completed. The laying of some rails, and the building of bridges and stations is the main work to be done in Massachusetts, and the largest single piece of construction to be done in Rhode Island is the boring of a tunnel under Smith Hill. It is said that the work will be completed in two years.

Marine Department Items.

The Canada Steamship Lines s.s. Manoa caught fire in St. John's, Nfld. harbor on Sept. 24, just prior to sailing for Charlottetown and Montreal. A press report says that the flames first appeared in the quartermaster's department, and for a time threatened to destroy the whole of the upper works.

The Dominion Government s.s. Arctic was reported on Sept. 25, as nearing Belle Isle, and as being expected to reach Quebec about Oct. 1. As stated in Canadian Railway and Marine World for August, she left Quebec on July 9, in command of Capt. J. A. Bernier, for the Arctic regions.

British Columbia Marine Matters.—Hon. E. Lapointe, Minister; Alex. Johnstone, Deputy Minister; and B. H. Fraser, Chief Engineers, Marine and Fisheries Department, left Ottawa at the end of September, for British Columbia, to deal with a number of matters affecting marine and fishery interests. It is stated that the Deputy Minister and the Chief Engineer will make a thorough tour of inspection of the B.C. coast and look into life saving stations, lights, etc.

St. John Dry Dock and Sphibuilding Co., St. John, N.B., advised us, Sept. 27, in regard to its harbor contract at Courtenay Bay, that the breakwater was completed, also the basin dredging, and that the channel dredging was about 80% completed, leaving about 400,000 yards of material still to be dredged. The dry dock and pumping station was practically finished, and will be officially opened Oct. 29, after which the company will be prepared to handle all kinds of ship repair work.

Pacific Salvage Co., Victoria, B.C. had several important salvage operations during the summer. The s.s. Rainier, which had been in collision with the s.s. Mandasan Maru, in Juan de Fuca Strait, was towed into Esquimalt harbor by the salvage ship Algerine, on July 28, patched, pumped and conveyed to Seattle, Wash. The Furness Withy s.s. Siberian Prince, which went ashore on Bentinck Island, on July 29, and received great bottom damage, was floated on Aug. 13, after discharging several thousand tons of cargo.

United States Shipping Board Ships.—A United States Shipping Board statement, as of Sept. 8, shows that the Board owns 1334 ships, the total value of which is \$226,733,315. Of these, 416 are in operation or ready for spot delivery, with 882 laid up, exclusive of 36 tugs, laid up and in operation. The value of the ships in operation or ready for spot delivery is \$137,311,940; the value of the laid up ships is \$87,906,375; the value of the tugs is \$1,515,000. The total value of the fleet as of July 1, was \$227,732,615. Since July 1 the Board has sold 6 ships for \$999,300.

Lake Shippers' Clearance Association held its annual meeting at Winnipeg, Sept. 24, when it was reported to be in a very favorable financial position, with approximately \$350,000 at credit of reserve account. Last year it loaded 306,500,000 bush. of grain at Fort William, which was 70,000,000 in excess of that handled during 1921, and approximately one quarter more than handled by Chicago, Duluth and Superior combined. The directors, who were re-elected, are as follows:—Capel Tilt, President; H. T. Swart Vice President; F. J. Anderson, C. C. Field and R. M. Wolvin, A. K. Godfrey is Treasurer and S. T. Smith, Secretary.

The Robert Dollar Steamship Co., San Francisco, Cal., is reported to have bought the steamships President Garfield, President Monroe, President Adams, President VanBuren, President Polk, President Hayes and President Harrison, from the U. S. Shipping Board. The first 5 of these are in operation by the Board between New York and London, and will not be transferred to the new owner until the close of the tourist season. The two last named ships are running between the east and west coasts of South America. It is stated that all the ships will be operated on a round-the-world service, under a guarantee, for five years.

The Canadian National Rys. directors met at the Quebec Harbor Commission's Building in Quebec, Que., Sept. 24, Sir Henry Thornton presiding. Among the directors from a distance who attended were F. G. Dawson, Prince Rupert, B.C.; and J. H. Sinclair, New Glasgow, N.S. The directors were entertained at luncheon at the Garrison Club, by Premier Taschereau, and at dinner by the Quebec Board of Trade.

Michigan Central Rd. Agent Sentenced.—John Kent, relieving agent, Michigan Central Rd. station, Niagara Falls, Ont., was, on Sept. 12, sentenced to two years imprisonment, after pleading guilty to breaking into the company's station there, and stealing from the safe \$159 in cash and about \$8,000 in cheques. He had been in the company's employ for about 8 years.

Prince Edward Island's Wants.—The Associated Boards of Trade, meeting at Montague, P.E.I., Sept. 3, passed a resolution urging the Island Government to make an annual grant towards the expense of a permanent secretary for the Maritime Board of Trade, who would also act as traffic expert; and another one urging that P.E.I. be represented on the Canadian National Rys. directorate.

Beatty Baseball Cup.—E. W. Beatty, President, C.P.R., presented a cup, recently, for competition among teams forming the C.P.R. Recreation Club's baseball section in Montreal. It was won by the dining car operating team, and was presented at the club's first annual dinner, Sept. 15.

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The Inland Water Freight Rates Act's Injurious Effects.

The Marine Department of this issue contains, on pgs. 503 and 504, full particulars of the manner in which the Inland Water Freight Rates Act, 1923, continues—despite the Dominion Government's attempt to get the U.S. ship owners, who have refused to file tariffs, to violate the law by filing details of individual rate agreements made, after entering into contracts for carriage, instead of filing tariffs prior to entering into such contracts, as the law specifies—to threaten a grain blockade of unprecedented proportions, and great loss to not only the Canadian grain trade, from the farmers on, but to the country at large. The Government's attempt to get U.S. ship owners to conspire with it in evading the law was plainly shown in the communication sent by the Board of Grain Commissioners to U.S. ship owners at Cleveland, on Sept. 11, which said in part: "The Inland Water Freight Rates Act, 1923, sec. 3, provides that any shipping company or any ship owner or person . . . who . . . carries grain . . . between Fort William or Port Arthur and any other port or place in Canada or the U.S. by lake or river navigation shall, before entering into any contract for such carriage, file with the Board of Grain Commissioners for Canada a tariff of the rates which such company proposes to charge. . . . In connection with this provision you are hereby advised that after going thoroughly into the matter in the light of present trading conditions, the Board realizes it is not always possible for a shipping company to file a copy of the tariff before entering into a contract for the carriage of grain. All shipping companies will, however, be required to file tariff or copy of the charter covering the cargo of each individual vessel, unless a tariff has already been filed covering the vessels of any particular company for the season or portion thereof."

We do not suppose that the Board of Grain Commissioners would, on its own authority, authorize this proposed evasion of the law, and the only conclusion to be logically arrived at is that the Government, having finally awakened to the fact that it made a mistake in trying to apply rate regulations to the purely competitive business of carrying grain on the Great Lakes, rather than admit it and say frankly that penalties would not be imposed for disregard of the law, resorted to transparent camouflage and adopted this undesirable method of trying to nullify the act's consequences.

We are strongly of the opinion that in doing this the Government committed a serious error. It certainly bungled badly in the first place by attempting, by getting the act passed, to regulate lake grain rates, to radically change the basis on which the business of lake transportation has been conducted since its very commencement, viz.: free and open competition and opportunity for the exercise of unrestricted individual initiative and enterprise. But, having seen what were to be the effects of its first mistake, it should not have committed the second one of trying to ward them off in the underhand manner which it has adopted, which is a mistake from its own viewpoint, because it is not going to help its political fortunes any, and a mistake from the country's viewpoint, because it had not had the effect the removing the existing uncertainties and threat of a

grain blockade. The mistake is the more evident because, with Mr. Robb's transfer from the Ministry of Trade and Commerce and Mr. Low's appointment in his place, the Government had a good opportunity to gracefully admit that its legislation was a mistake, and to cease the interference which has placed both the Government and the country in a most humiliating position, by reason of the visits to Cleveland, hat in hand, of the Chairman of the Board of Grain Commissioners, which put him in a most undesirable and embarrassing position, and has caused untold uncertainty and trouble in the grain trade at large and in western Canada generally.

It was probably supposed that permission to evade the law by filing merely a historical record of past transactions, instead of tariffs, would smooth the way for participation in the handling of the Canadian crop by U.S. ship owners, and, when it was seen that this was likely to attract only a few of the smaller ones, it was apparently believed that some other brand of camouflage, exemplified by the suggestion that the shippers file the tariffs instead of the ship owners, would bring in the remainder. But those in touch with the situation—who realize that the ship owners, from time immemorial, have been doing business with only the law of supply and demand, and full and free competition, as the basis, and with freedom from interfering and unnecessary regulatory legislation—thought otherwise, and it therefore is no surprise to them that the owners of only a very few U.S. boats will be party to the underhand procedure proposed.

And in the meantime, while the Government has been persisting in its attempts to have the law obeyed by evasion, the grain has begun to move, and is pouring into Fort William and Port Arthur in vast volume. The situation daily grows more threatening—how threatening it is is best told by a Winnipeg press dispatch of Sept. 20, which said: "There will be a serious grain blockade at Fort William and Port Arthur by the end of October, if the present situation regarding carrying grain across the great lakes continues, it was stated today by Robert Magill, Secretary of the Winnipeg Grain Exchange, in addressing the members of the Canadian Credit Men's Association at a luncheon meeting. He said the action of U.S. ship owners in refusing to carry Canadian grain across the lake had developed a very serious situation, and the outlook is becoming increasingly bad. There does not appear to be any solution of the difficulty in sight, and it is having a very bad effect on the price of wheat."

It is heard on all sides that the whole undesirable and serious situation is due to the Government's desire to curry political favor with western farmers. Canadian Railway and Marine World is not concerned with political matters, but it is concerned with the desirability of free, uninterrupted and efficient transportation by land and water route, and with the economic welfare of the country, and it most unhesitatingly endorses the demand that the Government stop its camouflaging and methods of petty evasion, that it frankly admit its attempts to regulate the grain traffic on the Great Lakes are a mistake, and that, basing its action upon the precedent established by itself last autumn when it told U.S. ship owners to disobey Canadian coastal laws

without fear of penalty, it now tell all concerned to disobey the freight rate regulation law, so that the impending blow to Canada's commerce and prosperity be not translated from a potentiality into a reality. And as for the future, we suggest without hesitation that the Government take no longer than until the opening of the next parliamentary session to realize that while regulation applied to railway rates is desirable, and has been demonstrated as such, because a railway is a quasi-monopolistic institution, regulation applied to inland water carriage is impractical, because a ship owner's business is not a monopoly, nor does it partake of the nature of one, and because the natural competition among ship owners, which has existed, and will continue to exist, has produced, and will continue to produce, a system of transportation service for the public than which there can be none cheaper nor more efficient.

Railway Employees' Attitude Toward Their Employers.

The President of the Canadian Brotherhood of Railroad Employees, A. R. Mosher, was reported to have stated at Ottawa, prior to the recent general meeting of the brotherhood at Calgary, that the question of public ownership of railways would be fully discussed at the meeting, and that railway "employees have a far different attitude when working for the public, and getting treatment which they recognize as reasonably just, than when working for the profit of investors." So as not to do Mr. Mosher any injustice, by commenting on an unverified press report, Canadian Railway and Marine World wrote, asking him if he had been correctly quoted, and he replied that he had been.

Mr. Mosher evidently wished to convey the impression that men employed by a publicly owned enterprise are more satisfied, more loyal, more enthusiastic and more likely to be in a continuing frame of mind suitable for putting forth their every effort for the success of the enterprise, than they would be if they were employed by an individual, or an association of individuals—a company. In Canadian Railway and Marine World's opinion, employees have just as much reason to be loyal and diligent when working for a privately owned enterprise as when working for a publicly owned one, and we believe that they are so. Mr. Mosher does not say: "The employees should have a far different attitude," thus conveying the inference that he thinks public employees should be more loyal and diligent, and we certainly would be sorry to think that any Canadian labor official should entertain any such idea.

We consider the obligation of a privately owned utility's employee to his employers to be exactly the same as that of a publicly owned one's employee. In both cases the obligation is a contractual one to others; in the case of the privately owned utility, to the people whose savings, or capital, have made the existence of the business possible, and in the case of the publicly owned one to the public at large, whose combined savings, or capital, or borrowings, have made the enterprise possible. Of course, it may be thought that there would be some incentive to employees working for publicly owned enterprises to be more diligent and loyal on account of thinking that they are, in a measure, working for themselves, and that the harder they

work, the better off they will be, while a man working for a privately owned concern might reason that he was working for private investors, and that the less he could do for them, and get away with it, the better it would be for him. Men who base their lives on that kind of reasoning never get very far.

If our inference from Mr. Mosher's statement that he thinks employees of public owned enterprises are more loyal and diligent than those of privately owned ones, is correct, he is undoubtedly wrong. Our opinion is that the employees of the Canadian Pacific Ry. and numerous other privately owned concerns are in every way as loyal and diligent as can be found in the employ of public owned enterprises anywhere, and they have every reason to be so. Mr. Mosher's advice to Canadian National Railways employees, members of the C. B. R. E., to strive for the enterprise's success and to earn their wages, is good advice, but his statement that employees of publicly owned enterprises are more loyal, sincere, enthusiastic and faithful than those of privately owned ones, and have reason to be so, was entirely uncalled for.

His statement about employees working for the public "getting treatment which they recognize as reasonably just" rather than when working for investors, is apparently a veiled attack on the Canadian Pacific and other privately owned railways. We say without hesitation that, particularly as far as the C.P.R. is concerned, it was absolutely uncalled for. That company's forty-two years' record shows that its employees have always been treated justly, and we are confident that no railway in the world has a more satisfied and loyal body of men in its employ.

Sir Adam Beck on the Rampage.

In speaking at the Canadian National Exhibition directors' luncheon, on Hydro and Press Day, in Toronto recently, Sir Adam Beck, M.L.A., Chairman, Hydro-Electric Power Commission of Ontario, and a member, without portfolio, of the Ontario Government, made an unprovoked and rabid attack on companies operating public owned utilities.

The Toronto Globe reported him as saying:—"Corporations will not keep their obligations. They will not follow the laws and statutes under which they have been constituted. They create monopolies and in the end do not give what the people expect, service."

The Toronto Mail and Empire reported him as follows: "Sir Adam Beck stated that privately owned public utility companies never obeyed the laws which permitted them to come into existence. Communities would draw up conditions, and, in return for having them accepted, would alienate important franchises, expecting that service would be their lot. The corporations, however, would never keep to their side of the agreements executed, and the communities were in consequence forced to take over their plants and to operate them with a view of securing public service and more favorable rates."

The reports quoted above are, of course, not verbatim ones. The present writer was among Sir Adam's hearers, and has no hesitation in saying that Sir Adam went much further than the daily papers credited him with doing, and practically charged all companies operating private utilities with being dishonest in their dealings with the public. Outside altogether of the bad taste of in-

roducing a highly controversial subject at what was a social function, and knowing, as he did, that no speaker was to follow him, and that no matter how reckless his statements were they would not be contradicted on the spot, Sir Adam's charges were not based on facts, and are incapable of substantiation. That there have been isolated cases where companies have been in the wrong in their dealings with the public is undoubtedly true, just as there have been cases where municipal and other public bodies have not treated companies fairly and honestly, but to brand public utility companies as a whole with dishonesty was an outrage.

Were Sir Adam still merely Chairman of the Hydro-Electric Power Commission of Ontario, such ravings might pass unnoticed, but now that he is a non-portfolio member of the Ontario Government it is a serious matter, and Canadian Railway and Marine World cannot believe that the Prime Minister, Mr. Ferguson, and other portfolio holding members of the Government share Sir Adam's jaundiced views. Were it otherwise, public utility companies, no matter how honestly managed, could not expect any fair play from the Government.

Twaddle About Passenger Rates.

The Toronto Mail and Empire said in a recent issue, "Can it be that the man who swam across Lake Erie did it for the purpose of calling attention to outrageous passenger rates?" That sort of editorial comment is not only silly, but does harm, by creating a false impression. Passenger rates are not outrageous in any sense of the word. If they were, the Board of Railway Commissioners would have been appealed to for a reduction—at least in the railway ones—long ere this.

General Electrification of Railways.

The Orillia, Ont., Packet said in a recent issue: "The half million dollar fire at Penetanguishene last week is supposed to have been started by a locomotive. Why not electrify the railways?" The answer is that general electrification of steam railways is not practical economically, but only where there may be great density of traffic.

Alberta Domestic Coal Transportation.

Canadian Railway and Marine World has given in preceding issues and elsewhere in this issue particulars of the efforts made by Alberta coal producers, and Ontario coal consumers, to have the railways, particularly the Canadian National, carry Alberta domestic coal to Ontario at much less than cost.

D. Crombie, Chief of Transportation, and E. P. Mallory, Director, Bureau of Statistics, Canadian National Rys., stated to the Senate committee enquiring into the fuel situation last season, that it would cost the C.N.R. \$8.91 a ton to carry Alberta coal to Toronto in train-load lots. W. B. Lanigan, General Freight Traffic Manager, C.P.R., stated to the committee that it would cost the C.P.R. \$9.94 a ton to carry the coal in ordinary carload shipments.

We presume that the reason the two principal railways do not wish to meet the numerous demands for a \$6 or \$7 rate is that their managements, after having given due consideration to the possibilities of increased traffic in other

directions, due to increase in the western coal mining industry, consider that the transportation movement involved would be a money losing one for their roads, and an uneconomic one for the country.

The Canadian National Rys. should not be expected to carry goods at less than cost any more than should the C.P.R. While the Canadian National Rys. are government owned, they should be regarded as being in every way a strictly commercial undertaking. The only way they can be made successful financially is by regarding and treating them as a purely commercial undertaking; they will never be successful financially if they are used to furnish less-than-cost transportation to any interests that desire it.

Canadian National Railways' Deposit in Home Bank.

The Detroit, Mich., Free Press of Sept. 22, published the following Ottawa dispatch: "People are anxiously awaiting the Curator's report on the Home Bank. In the meantime there are alarming rumors that Canadian National Rys. money was deposited in that bank just previous to the monthly statement to the Government and withdrawn a few days after the first of the succeeding month. The amount mentioned is \$1,000,000, which would be quite an assistance to a small bank like the Home in producing a passable statement for the Finance Department. If this is true, and responsible men declare it to be, then there will have to be a definite explanation from the Canadian National management. R. P. Gough, Toronto, is Vice President of the Home Bank, and also a director of the Canadian National Rys. Why a deposit, and of such magnitude, should have been made by the Government railways in the Home Bank is a mystery, as that institution had no Canadian National Rys. account, nor was it supposed to be financially associated in any way. Each bank makes a statement to the Government about the 22nd of each month of its loans, deposits, etc., on the last day of the preceding month. It is by this statement that the Finance Department judges of its prosperity and solvency. If it is found (and apparently there is some foundation for the persistent rumor) that the Government railways made this remarkable deposit at the time mentioned, only to withdraw it after the statement had gone forth, then there is trouble ahead for some people in the bank and in the railway."

Official Explanation: Sir Henry Thornton, President, and D. E. Brown, First Assistant to the Financial Vice President, issued the following statement in Montreal, Sept. 25: "It is the custom of the Canadian National Rys. Financial Department to distribute its funds by depositing them in banks which best suit its purposes. The railway uses 14 banks at present. About the latter part of May, 1923, the Financial Department of the system deposited in the Home Bank at Montreal \$1,000,000 of surplus funds. Shortly after depositing these funds with the Home Bank, it came to our notice that R. P. Gough, one of the C.N.R. directors, was also Vice President of the Home Bank, and to avoid any possibility of criticism the funds were promptly withdrawn. This deposit had no unusual features, and it was effected in the

ordinary course of the affairs of this department."

[Editor's Note.—Two C.N.R. directors are also bank directors, viz.: E. R. Decary, of La Banque Nationale, and Jas. Stewart, of the Bank of Montreal.]

The Brotherhood of Locomotive Engineers not an Illegal Organization.

Canadian Railway and Marine World for April gave the decision of Mr. Justice Galt, of the Manitoba Court of King's Bench, which declared, in effect, that the Brotherhood of Locomotive Engineers was an illegal organization, operating in restraint of trade, the decision being based on the fact that the brotherhood had not registered as a trade union, as required by the Trades Union Act. The matter was brought up in the first place by the brotherhood suing to recover \$3,743.63 alleged to have been misappropriated by S. Starr, formerly Secretary-Treasurer of the organization. Justice Galt's decision granted the motion for a non-suit made by Starr's counsel, and prevented the brotherhood from proceeding with its action. The brotherhood took an appeal to the Manitoba Court of Appeals, which on Sept. 24, unanimously reversed Justice Galt's decision. The Appeal Court decided that it should not be held, in the present condition of the law, that the brotherhood is "an organization so tainted with illegality that the court will not lend its assistance to recover trust moneys unjustifiably withheld by its ex treasurer".

Canadian National Railways Divisional Changes.

A Halifax, N.S. press report of Sept. 19, stated that effective Sept. 30, Halifax would be made headquarters for the C.N.R. lines between Truro and Halifax, and Halifax and Yarmouth, under control of J. T. Hallisey, Superintendent, who would be moved from Truro to Halifax. At present Superintendent Hallisey has charge of the Halifax Division, including Bedford Subdivision, from Halifax to Truro, 64.07 miles; and the Dartmouth Subdivision, from Windsor Jet. to Stewart, 81.80 miles, a total of 145.87 miles. Superintendent J. Bain, with office at Bridgewater, N.S., has jurisdiction over the Bridgewater Division, from Southwestern Jet., 4.39 miles from Halifax, to Yarmouth, 246.1 miles, also the Middleton Subdivision, from Bridgewater Jet. to Port Wade, 92.3 miles; the Caledonia Subdivision, from Caledonia Jet. to Caledonia, 21.9 miles; and the Lunenburg Subdivision from Mahone Bay to Lunenburg, 7 miles, a total of 372.4 miles. Truro town council is reported to have sent a press dispatch on Sept. 21 to the C.N.R. management in Montreal, protesting against the transfer of the Superintendent and staff to Halifax. Canadian Railway and Marine World was officially advised Sept. 25 that the Halifax and Bridgewater Divisions would be consolidated on Sept. 30, under one Superintendent, with office at Halifax, and that the consolidated territory would be designated the Halifax Division.

The following circular was issued on Sept. 24 by W. U. Appleton, General Superintendent, Atlantic Region, and approved by L. S. Brown, General Man-

ager: "Effective Sunday, Sept. 30, 1923, the position of Superintendent at Bridgewater, N.S., will be abolished, and the Bridgewater Division will become a part of the Halifax Division, under the jurisdiction of J. T. Hallisey, Superintendent, with headquarters at Halifax, N.S." A Halifax press dispatch of Sept. 27, stated that H. Putnam, M.P. for Colchester, N.S., and W. Duff, M.P. for Lunenburg, N.S., had received telegrams from Hon. E. M. Macdonald, Minister of National Defence, identically as follows: "Orders suspended until Sir Henry Thornton visits Nova Scotia about middle October, when he will receive representations."

On Sept. 28, General Superintendent Appleton issued a circular cancelling his circular of Sept. 24, as given above.

[Editor's Note.—"Yes, we have no—" politics.]

Extravagant Wages.—The Dearborn Independent, owned by Henry Ford, said, in a recent issue, "Translated into food, at the prices the farmer gets, it takes, in New York City, 63½ dozen, or 762, eggs to pay a plasterer for one day of 8 hours work; it takes 17½ bush. of corn, or a year's receipts from half an acre, to pay a bricklayer one day; it takes 23 chickens, weighing 3 lb. each, to pay a painter for one day's work; it requires 42 lb. of butter, or the output from 14 cows, fed and milked for 24 hours, to pay a plumber \$14 a day; to pay a carpenter for one day's work, it takes a pig weighing 175 lb. representing 8 months feeding and care."

C.P.R. Scholarships.—The C.P.R. scholarships at McGill University, Montreal, covering 4 years tuition in certain branches of engineering, offered for competition to the company's apprentices and other employes under 21 years of age, and to minor sons of employes, have been awarded to Thos. S. Moffatt, Victoria, B.C., son of a foreman, and to A. J. Wise, son of an employe in the Angus shops, Montreal. A scholarship, under the same conditions, tenable for three years in L'Ecole des Hautes Etudes Commerciales de Montreal, has also been offered.

The Canadian Railway Club's opening meeting for discussion was held in Montreal, Sept. 11, when E. T. Spidy, Assistant Superintendent, Dominion Engineering Works, read a paper on "What is your material handling problem?" It was illustrated by moving pictures showing different methods of handling material from place in place in connection with industrial plants.

The Toronto Suburban Ry. management on Sept. 24 called for tenders to be sent in by Oct. 1 for grading the approach to the subway to enable the line which is to be diverted to cross under the C.P.R. double track line near Lambton, just west of Toronto. Full details of the diversions are given farther on in this issue.

Canadian Northern Town Properties Co., Ltd., and Canadian Northern Realities Ltd., have given notice that there has been deposited with the Secretary of State at Ottawa, certified copy of the by-law of each company changing the head offices from Toronto to Montreal.

Swiss Journalists in Canada.—At the invitation of E. W. Beatty, President, C.P.R., five editors of Swiss newspapers arrived in Canada, Sept. 10, to study the resources and conditions in the Dominion, and possibilities of Swiss immigration.

The Canadian Pacific Railway President's Western Inspection Trip.

E. W. Beatty, K.C., President, C.P.R., left Montreal, Sept. 6, at 8.55 a.m., by special train, on his annual inspection trip of the company's properties to the Pacific coast, accompanied by three other directors, Sir Herbert Holt, F. W. Molson, and J. K. L. Ross, also by A. D. MacTier, Vice President, Eastern Lines, who went as far as Fort William. The train, as it left Montreal, consisted of Mr. Beatty's business car, Thorold; compartment car Glen Bow, Mr. MacTier's business car, St. Andrews; and a baggage car. At Toronto, which was reached late in the afternoon, the party was joined by another director, W. N. Tilley, K.C., and dined with Sir Edmund Osler, one of the oldest members of the Board.

Toronto was left on the morning of Sept. 7, an overnight stop was made at Chapeau, and Port Arthur was reached on the evening of Sept. 8, a 10 minutes stop being made, during which Mr. Beatty received the mayor and a number of other citizens. D. C. Coleman, Vice President, Western Lines, and C. Murphy, General Manager, Western Lines, met the party at Port Arthur and accompanied them west. The special proceeded from Port Arthur to Fort William, where a stop was made for the night, Mr. Coleman's business car Assiniboine, being substituted for Mr. MacTier's car. During the evening the mayor and a number of other citizens were received. Winnipeg was reached on Sept. 29 at 6.50 p.m., the party remaining there Sept. 10 and 11, during which a meeting of the C.P.R. directors, the first in Winnipeg, was held, which Sir Augustus Nanton of Winnipeg, attended, afterwards accompanying the party for the rest of the western trip. Leaving Winnipeg, Sept. 12, at 8 a.m., an hour's stop was made at Brandon, a few minutes' one at Broadview, Regina being reached at 5.30 p.m., and after a two hours stay there, Moose Jaw was proceeded to for the night. Moose Jaw was left Sept. 13, at 6 a.m., a few minutes stop was made at Swift Current, an hour was spent at Medicine Hat, Brooks being reached at 3.40 p.m., where the train was left for a short motor trip to the irrigation development, Calgary being reached at 8.45 p.m., and the night being spent there. Calgary was left on Sept. 14, at 8 a.m., Banff being reached at 10.50 a.m., where the party left the train, and, after an hour stay, motored to Lake Louise, where they stayed another hour, and then motored to Lake Windermere, a total drive of about 140 miles. The train had been sent on to meet them at Lake Windermere. Golden was reached at 11.15 p.m., and a stop made for the night. On Sept. 15, Golden was left at 8.30 a.m., five minutes stops were made at Revelstoke, Kamloops and North Bend, and Vancouver was reached at 1.55 p.m. Vancouver was left on Sept. 16, at noon, by the C.P.R. s.s. Princess Louise, for Skagway, Alaska, and was returned to on Sept. 23. Two days were spent there, the party leaving Sept. 25 by night steamboat for Victoria, spending a day there, going to Seattle and returning to Vancouver on the morning of Sept. 28.

At the time of writing (Sept. 29) the schedule for the balance of the trip over the Western Lines is as follows: Leave Vancouver, Sept. 29 at 6 a.m., via Petain on the main transcontinental line, then via Hope and the Kettle Valley Ry., stopping an hour and a half at Princeton,

half an hour at Penticton, and arriving at Farron, Sept. 30, at 1.45 a.m., leaving there at 8.30 a.m., stopping two hours at Tadanac and half an hour at Nelson, arriving at Proctor at 3.15 p.m., thence by car ferry to Kootenay Landing, stopping there 40 minutes, at Cranbrook 10 minutes, arriving at Kimberley, Oct. 1, at 1.30 a.m., leaving there at noon and reaching Lethbridge at 8.15 p.m. Leaving Lethbridge, Oct. 2, at 7.30 a.m., arriving at High River at 11 a.m., visiting Lord Renfrew's E.P. ranch, leaving High River at 2 p.m., arriving at Calgary at 3.15 p.m. Leaving Calgary, Oct. 3, at 12.05 a.m., reaching Edmonton at 6.30 a.m., leaving there at 2.30 p.m., via Wetaskiwin, arriving at Saskatoon Oct. 4, at 1.30 a.m., leaving there at noon via Yorkton, reaching Winnipeg Oct. 5, at 6.30 a.m.

In addition to the Vice Presidents of the Eastern and Western Lines, and the General Manager of the Western Lines, who travelled with the party over their respective territories, the various General Superintendents, and some local officials, travelled over their respective jurisdictions.

Speech at Vancouver.

Speaking at a dinner tendered him by the Vancouver Board of Trade, Mr. Beatty announced that the company would add two large steamships immediately to its B.C. coast fleet, to accommodate its increasing tourist traffic, and would proceed at once to complete its additional pier in Vancouver harbor. He also said in part:—

Two questions which perhaps merit the gravest consideration are those which have to do with the realization of Canada's latent wealth and the reduction of the national liabilities. The methods to be adopted to accomplish both of these, which primarily concern us most, and on the sufficiency or otherwise of these methods, it will be determined whether Canada will reach within a reasonable period a fair measure of its own destiny or whether it will drag along with unlightened burdens and a discouraged people. I do not believe that uncured optimism ever, in the last analysis, brought prosperity. Neither do I believe that despondency and gloomy forebodings ever helped to lighten the burdens of the people of any country. Even if I were so constituted, I could not afford to be a pessimist, but I see nothing in our situation, heavy as our national burdens are, to warrant anyone having any doubt as to the future of this country, but when I say this, and, I think it is the judgment of most business men, it does not mean that vigorous and courageous steps to correct the evils of which we are conscious should not be taken by Canadian business communities.

We are confronted with a few important and unescapable facts. The first is that the area of the country is large and its population inadequate. The second is that its natural wealth has scarcely been touched, and its agricultural lands, its forests, its mines, its fisheries, and its industries have not contributed to the people of the country the wealth to which they are entitled, or have not eased the burdens of its small population, bearing as they do a heavy burden of taxation. That taxation is, of course, dependent upon the size of the national obligations in the extent of the national expendi-

tures. How can our expenditures and revenues be balanced most quickly in order that our future may be realized? These are the problems which confront every citizen of the country, and are the problems which confront and will always confront every enterprise whose success depends upon its ability to secure revenues greater than its expenses. Even a cursory examination must convince the sceptical that greater business caution and prudence in national and provincial expenditures are the first steps in the easing of the situation, which, when all is said and done, we have not improved since the closing of the war. How can the situation best be readjusted in the interests of the whole country? I do not pretend that my opinion on the subject is any more valuable than yours, but it does seem that we are reduced to face certain essential considerations of a very simple character and that the appreciation of them by governments will go a long way to improving our situation.

It has been said by men much better informed and wiser than I that Canada needs more people and more capital. It is a hopeful sign that the necessity for both is receiving widespread recognition in governmental and business circles, and that the continuous and insistent clamor of the last year or 18 months is bearing fruit in a more vigorous immigration policy for this country. I can appreciate the reasons which influenced the slowness of action in this respect. We were not in a condition of prosperity, agriculturally or otherwise. We had considerable surplus of labor. Some of us were depressed by the temporary conditions which existed and we framed or failed to frame our policies because of them, and not because of what we knew the future had for this country. It was thought, and improperly thought, that we should mark time and not over exert ourselves in inducing others to come to Canada. This policy was based upon the theory that the tide of immigration could be turned on or off like a tap, and that it would be sufficient for us to start the stream when the conditions in this country were substantially improved. We forgot, in our consideration of the subject, under the after-war conditions which then existed, two important factors. We forgot that it took considerable work, the expenditure of much money and a highly efficient campaign to direct emigration to Canada and that this organization and this work should be commenced long in advance of the expected flow of people. We also forgot that what we were not doing other countries were doing, with the result that the pick of the available material, especially in England and Scotland, and in northern Europe, from which excellent settlers to our knowledge could be secured, were being diverted to countries which, if they do not, in our opinion, offer the same advantages as Canada, offered distinct advantages over the conditions in which the emigrants were living in their own countries. Canada has not, in recent years, secured its proper proportion of this very desirable material. It is true that immigrants are coming forward in larger numbers than heretofore, but they are not coming forward in such large numbers as we can secure if our organization at home and abroad is perfected. In fact, I am safe in saying that where we have secured hundreds we can readily secure thous-

ands of the kind of men who will be productive in this country. But, of course, it cannot be done in any haphazard way. The men must be induced by proper representations to take advantage of the opportunity offered now beyond their reach in their own countries. They should not be misled by immigration agencies, steamship companies or others. They should be informed of the climatic conditions existing in Canada, in all parts of it, of the form of government under which they will be expected to live and of the absolute necessity of industry if they are to succeed. They should be instructed that they will be expected to take an active interest in Canadian affairs, to see that their children are educated as Canadians, and that they themselves become Canadianized in the truest sense of the word. They should not be allowed to simply land in Canada and shift for themselves. Through the establishment of bureaus and other government departments, they should be taken in hand and advised and guided until they are firmly established and their success is in sight. The people who are willing to risk their future in a country like Canada can be found in great profusion in Great Britain, the United States, Norway, Sweden, Belgium, Denmark, and other countries. If we say we do not want them we are expressing in the most damning way our lack of confidence in our own country. We either believe in the country and its future or we do not. If we do believe in it, we must know that the population is insufficient; either we carry the burden of the country or ensure the development of its undeveloped or almost undeveloped natural resources. It is estimated that there are 25,000,000 acres of fertile soil in the western provinces, within 15 miles of existing railways, still unproductive. It needs no elaboration on my part to indicate to you just how stultifying is the non-use of this main asset of this country. But you may say to me that agriculture has not been prosperous, because market conditions have not been right and you cannot expect to induce the immigration of capital unless the prospects for capital are good. All of that is true, and it leads me to mention what I think is probably the first consideration to the establishment of the country on a basis not only fair to those living in it, but one which will make it more inviting to those whose presence we desire to attract.

As you know, our taxes are heavy; they perhaps seem heavier than they are, due to the fact that directly imposed taxes such as income taxes are always the most irritating of any form of taxation. There is nothing about it which enables a man to forget it. It is not hidden or covered by indirect imposts which the ordinary citizen does not see and consequently does not feel. It is a direct taxation from him every year with the consequent psychological effect of making him feel poorer, poorer even than the difference between his wealth before he paid it and that which he purchases afterwards, due to his inability to mentally establish the realization of annual exactions from his exchequer. What is the cure for this? Obviously by the adoption of the strictest national, provincial and municipal economy. Economy is not an attractive word nor an exhilarating slogan. The people are never disposed to cheer the speaker who advocates retrenchment. Spending is always more attractive, and, therefore, more popular. We will never,

perhaps, escape the necessity, for large expenditures and such as are reasonable, must, I think, for the next few years be of a productive character. We should spend for the purpose of development or for the purpose of securing greater economy. We should not, however, embark on any capital expenditures of doubtful value or those which might be termed luxuries. If, in the course of two or three years of rigorous scrutiny of national, provincial and municipal budgets, our total expenditures are reduced even from 25 to 30%, we will have reduced our annual financial necessities to a point which would permit us to consider a reasonable reduction in the country's tax imposts. When that time arrives we will be able to say to ourselves that by our own effort and sanity we have not only lightened our own burdens, but made further inducements to those who appreciate living in a country which exacts a moderate amount from its citizens, who will, therefore, be in a position to assist in its further advancement.

But, you may say that taxation is not the cause in many cases of the failure to obtain proper results in many of the country's enterprises, and you would be quite correct. I agree with your Premier, though in some instances we seem willing to disagree, that in respect of agriculture, the failure to secure an adequate return must be explained by other causes than the taxes which exist in this country. In fact, the figures which he discloses give ample proof of the correctness of his statement. Agriculture is not enjoying the profitability it should by reason of high costs of production and unsatisfactory prices; prices, I may add, determined in foreign markets and quite beyond the control of the Canadian producers. The combination of high costs on the one hand and prices on the other hand resulted in an insufficient margin for some time past, indeed in some cases there was no margin at all. The cause of this condition obviously lies in the lack of purchasing power in the countries to which our exportable surplus of grain was, under normal conditions, sold. To say that England first and Canada in a lesser degree are not concerned with the stabilization, and, we hope, approaching solvency, of European countries, is to say that we are not concerned with the buying power of our customers. Many close students of international affairs, however, who are in a position to gauge with reasonable accuracy the trend of events there, see many signs of hope of an end of conflict and a real effort towards rehabilitation in sight. With improved conditions in Great Britain in consequence, and on the continent, the prospect of a normal demand for Canadian products at fair prices is materially increased.

I have spoken generally, but very frankly, on some of these general problems which seem to me to be occupying the attention of most Canadians, especially those in active business. I have felt for some time that we were neglectful of our duty towards our own country, that we were not sufficiently impressing our judgment as men of business upon those in control of our affairs, that we should first induce and then support an effort to improve the existing situation as we see it, and that we should do so in no spirit of hostility and with no feeling of despondency, that we should simply express our belief and confidence in this country by bringing to bear upon its problems the confidence, the courage and the caution that our experience

in our own affairs have proved most valuable. Because we counsel to ourselves wisdom and care we surely cannot be accused of discrediting or belittling our own country. Our sole purpose should be to make Canada a desirable place to live in, a credit to itself, to the great Empire of which it forms a part, and a blessing to all mankind.

Under the present car interchange rules, when a car is destroyed in interchange, and the settlement value has to be figured, depreciation is reckoned from the time the car was built. At one time the rules provided for depreciation on rebuilt cars being figured from the time they were rebuilt, and considerable agitation has sprung up for the restoration of such a rule, it being evident that roads which rebuild cars at large expense and then have one or more of them destroyed in interchange service must suffer an unmerited loss. The American Railway Association Mechanical Division's general committee has appointed a special committee, of which G. E. Smart, Chief of Car Equipment, Canadian National Rys., and L. K. Silcox, General Superintendent of Motive Power, Chicago, Milwaukee & St. Paul Ry., are members, to make a thorough enquiry into the matter and report to the general committee.

Canadian Trade Index, 1923-24.—The Canadian Manufacturers' Association has issued a new edition of the Canadian Trade Index, which contains a complete alphabetical list of Canadian manufacturers, with miscellaneous information, and French and Spanish translation sections with parallel English; a list of producers and exporters of a wide variety of agricultural products; a condensation of numerous similar headings into main headings, with descriptive sub-headings, making the book easier of access for general lists than formerly; the marking of all exporters with an asterisk throughout the classified section; and the inclusion of information regarding the Governmental Commercial Intelligence Service, as well as other material of interest to importers and exporters. Approximately 1,200 new headings have been added to this edition, many representing new developments in manufacturing firms, the total reaching 10,500.

Canadian National Rys. Employees' Excursion.—Some 4,000 C.N.R. employees went on a holiday excursion from Toronto to Buffalo on Sept. 20 on five special trains made up of 13 passenger cars and a baggage car each. The first train left Toronto at 5.30 a.m., and was followed at half hour intervals by the others. The first train to return reached Toronto at 11.30 p.m. and the last at 1.30 a.m. A pilgrimage to Buffalo was an annual affair during the Grand Trunk regime, but was suspended during the war, the excursion this year marking its revival. It is stated that the excursion was the largest single passenger movement handled out of Toronto this year.

Algoma Eastern Ry. net earnings for half year ended June 30, are \$194,397. After meeting bond interest and other charges, the deficit was \$43,523, increasing the debit balance brought forward, to \$579,167.

"A jay-walker," remarked Mr. Chuggins, "has in him the making of the flivverist who tries to beat a locomotive to a grade crossing."—Washington Star.

The C.P.R. British Columbia Employees' Medical Association held its annual meeting at Penticton, Sept. 3.

The Japanese Earthquake and the Transportation Interests.

When the first news of the earthquake in Japan, on Sept. 1, was received, great anxiety was felt at the C.P.R. head offices in Montreal in regard to the company's staff in Japan. The company's chief office for the Orient is at Hong Kong, China, where Allan Cameron, who was in Canada at the time, is Oriental Manager, and P. D. Sutherland is General Passenger Agent. The chief offices in Japan were at 14 Bund, Yokohama, an illustration of the entrance of which is given herewith, another office being at Kobe. The principal officials at the Yokohama office were J. Rankin, General Agent; G. E. Costello, General Agent, Passenger Department; M. Fitzgerald, Special Representative; and E. Hospes, Passenger Agent. Although the Yokohama offices were completely destroyed, all of these officials escaped. The principal officials at Kobe were H. E. Hayward, Agent, and A. M. Parker, Passenger Agent, who are also safe, Kobe having escaped the disaster. Mr. Costello was on the s.s. *Empress of Australia* when the earthquake occurred, and a press report says that he swam ashore, walking through burning debris, and found his wife surrounded by flames, but that she was rescued. John Spence, of the Passenger Department in Yokohama, who is a son of the late John Spence, principal of Kent School, Toronto, and who had been with the C.P.R. in Montreal until last spring, when he was transferred to Japan, was also on the *Empress of Australia*, and escaped. Messrs. Costello and Spence went subsequently on the *Empress of Canada* to Kobe. John Reed, of the Freight Department, at Yokohama, and F. J. Weville, the company's Auditor at Hong Kong, who were in Yokohama, were struck by a falling beam and killed instantly. Ray Lawrence, formerly of Ottawa, who was at one time in the C.P.R. service in Japan, but now employed by Sperry Gyroscope Co., has cabled from Kobe that he escaped. A cable dispatch stated that Capt. Swain, who was spoken of as an official in the C.P.R. service, despite two broken legs, directed rescue work at the Bluff Hotel. We are informed that he was not in the C.P.R. service, and the Montreal head office know nothing of him. We were advised Sept. 13, that the C.P.R. Yokohama offices having been destroyed, a temporary office had been established at Kobe, which is now the C.P.R. headquarters in Japan. Canadian National Ry. have no representatives stationed in Japan, their oriental officials being at Hong Kong and Shanghai, China. We were advised, Sept. 13, that the traffic executive in Montreal had no reason to believe that any of the officials were in Japan at the time of the catastrophe. The Canadian Robert Dollar Co., Vancouver, has an office at Kobe.

Canadian Pacific Steamships.—We are officially advised that the C.P.R.'s *Empress of Australia* was tied up at the wharf at Yokohama, ready to sail, when the earthquake occurred; that, due to the tidal wave, one of her propellers became entangled in the anchor chains of another ship, but that she was ultimately got clear, that no damage was done to her, and that when she was at the dock she was used as a headquarters for refugees, and subsequently took a number of them to Kobe, afterwards sailing for Canada, and reaching Victoria Sept. 23 and Vancouver Sept. 24. The C.P.R.'s s.s. *Em-*

press of Canada reached Yokohama two days after the earthquake, and was used to transport some 1,400 refugees, to Kobe, many of whom were severely injured. Messrs. Rankin, Costello, Fitzgerald, Hospes, and Spence, of the company's staff, went to Kobe on her. The *Empress of Canada* then proceeded to Shanghai, arriving there Sept. 10. A Kobe dispatch to the London, Eng., Daily Mail, says that refugees reaching there paid warm tribute to the C.P.R. officers' and men's splendid work at Yokohama, where they organized rescue parties immediately after the earthquake and saved women and children regardless of nationality. The C.P.R.'s s.s. *Empress of Asia* was at Hong Kong during the earthquake.

Rev. F. G. Gilbert, a Boston missionary, who was on the s.s. *Empress of Australia* during the earthquake, is reported to have said, on reaching Vancouver, on Sept. 16: "It threw the great ship 25 ft. out from the wharf, and the wire mooring ropes jerked out the heavy mooring pins, and piles of the wharf set in cement. Then about 15 barges, some of them oil ones, which had been torn



Entrance to Canadian Pacific Railway's Offices at Yokohama, Japan.

loose, jammed around the *Empress* and took fire, all burning at the same time. At one time the ship's bow was plunged right through a burning barge. Before she could work her way out of this some of the oil barges were burned down to the water's level. With burning oil 16 to 18 in. deep, the flames shot fully 300 ft. up in the air. The oil on the water burned for 6 or 7 hours."

Edgar Nobles, of Edmonton, Alta., who arrived at Victoria, B.C., on the s.s. *President Jefferson*, on Sept. 15, is reported to have said that the heroism and intelligence of the officers and men on the s.s. *Empress of Australia* saved not only the ship, which was in constant danger of fire, but also about 3,000 lives. Refugees who were driven into the water by the encroaching flames, or thrown overboard from the houseboats, were taken aboard, while the crew tried hour after hour to extinguish the flames in the immediate vicinity.

Captain S. Robinson, of the s.s. *Empress of Australia*, is reported to have given the following information in an interview, while between Victoria and Vancouver, on Sept. 23: The ship was just on the point of leaving pier 7 at Yokohama. Tugs abeam and astern were

ready to pull her off. The captain had turned to take a last look along the wharf line and was about to give the order, "Let go, forward," when the ship began to shake. The motion on board was exactly as if the ship were being shaken by giant hands. His first order was "Sound the bells." He then glanced along the line of the wharf and shore, and from his position high up on the bridge, distinctly saw the earth undulating in 8 ft. waves which traveled at tremendous speed from south to north like rollers in a smooth sea and in the direction of the ship. He saw people ride these earthy breakers as boats ride in a swell. Then great cracks opened in the earth and swallowed them up as they closed again like relentless jaws of a monster. By this time the sheds on the docks were swaying and the buildings of the city falling flat like a house of cards. Then a thick, black cloud rose up behind the city. Flame spouted out everywhere and the wind was blowing 70 miles an hour. The *Australia* heaved alongside, opened the gangways, and put down the rope ladders to struggling victims in the water. The ship by this time was in a serious situation. The towing tugs had disappeared. Sparks and flaming matter were blowing round her. It was impossible for her to go ahead or to go astern, having fouled two anchor chains of the s.s. *Steel Navigator*. Salt water from the 30 hoses played on the ship. Blinding smoke and cinders added to the difficulties of the situation. The gale was the deciding factor in the catastrophe, whipping the flames up everywhere. In three hours Yokohama was a mass of ruins from end to end. The intense heat from the burning sheds of the wharf was unbearable. Lumber lighters loading into ships at the time of the earthquake were floating all over the harbor, and a number of these jamming between the ship's stern and the wharf forced her almost clear of the *Steel Navigator*, along which the *Australia* slid, in spite of her one fouled propeller. At this point a Japanese steamship cut loose from her buoy, tried to turn round, and rammed into the Canadian liner, another intervening lighter preventing serious damage, as the former ship ranged alongside. At 4 o'clock the *Empress of Australia* hove back almost into her original berth, with the *Steel Navigator* nosing her stern. Hoses were now rushed on shore and the wharf fires extinguished.

Suddenly at dawn on Sept. 2, a most frightful sight appeared. Flames shot up 300 ft. into the air. Thick black swathes of fuel oil moved upon the face of the waters and the horrible truth was realized. The great blazing furnace moving up in three masses crept towards a corner of the Bund and began gradually to work out from the corner in the direction of the ship. Capt. Robinson realized that the time had come to work out from the wharf. He asked the officer commanding the *Steel Navigator* to lash his bow to the *Australia*'s stern and tow her out, and it was then that Capt. Kent, a Shanghai pilot, lent valuable aid in directing the manoeuvring from the bridge of the *Steel Navigator*, giving every assistance to the youthful commander of the U.S. freighter, who, taking the post of his dead captain, did wonderful work in towing the *Australia* from the wharf. The wind, passing obliquely across the desolate ruins of the docks,

fanned the onrushing flaming oil and the Empress of Australia, with 3,000 people aboard, refugees, crew and passengers, escaped its fiendish reach by a bare ship's length. Then, by a series of jigsaw manoeuvres, Capt. Robinson, who was able to steer his ship only in one direction on account of his crippled propeller, worked his way out into the outer harbor, which, by this time, was crowded with small steamers flying flags of all nations.

It was at this point that a Dutch tanker, the Iris, in command of a young Capt. Konnigs, performed a deed of heroism, which will go down in the annals of the sea. Fires over the entire surface of the harbor had been renewed by the ignited floating lighters which travelled hither and thither like torches among the dark, seething pools of fuel oil, of which thousands of tons floated upon the surface of the water. These came drifting out in the direction of the breakwater, and Staff Captain Holland was sent by Capt. Robinson to ask the Dutch skipper for a tow. Without a demur he agreed, and, handling his ship with conspicuous carefulness, he succeeded, after 6 hours of strenuous endeavor in the pitchy blackness of the night, to swing the Australia's bows into a position of comparative safety, about a mile from the breakwater and a mile and a half from pier 7. Later Capt. Robinson learned the reason of the brave Dutchman's extreme carefulness. His cargo consisted of 2,000 gals. of benzine and 2,000 of kerosene. She was a large single screw ship. So Sunday concluded. Meanwhile the great ship had been transformed into a floating hospital. To walk through her corridors was to witness scenes too horrible to describe. In the captain's own words, it was one sweltering mass of humanity, begrimed, bloody, covered with mortar and filthy ashes. Many of the victims were naked. Stewardesses and passengers working like trojans, bathed the wounds and bound them up with bandages torn from the ship's linen. Refugees who were unhurt turned their hands to any task, in spite of the fact that almost everyone of these had lost all or some of their immediate family in the awful disaster. The uncertainty of the fate of their loved ones was somewhat alleviated by the opportunity of service which demanded continuous action on the part of all. Monday, Sept. 3, brought the Empress of Canada, and the day was spent transferring the refugees to her. On Sept. 4 a Japanese battleship and a cruiser came in, the former responding to Capt. Robinson's request for a diver by sending one, who, after three hours heroic work, found a broken end in the 75 fathoms of 2½ in. chain cable which had become entangled in the Australia's propeller. After thanking the captain of the Japanese ship for his assistance, Capt. Robinson offered his ship to the acting British consul Bolter, who took upon himself the responsibility of commandeering the Canadian liner as a clearing station for refugees. He had arrived on the ship on the night of the disaster, and had played a gallant part in the work of subsequent days.

Capt. Robinson said the Empress of Australia continued to handle refugees until the following Saturday, when she sailed for Kobe, leaving that port for Vancouver on September 11, with 500 passengers. Before leaving Yokohama on Sept. 8, Capt. Robinson went ashore, and with James Rankin, General Agent for the C.P.R. at Yokohama, succeeded in locating the bodies of two of the com-

pany's officials there, Reed and Weville, whose charred and mutilated forms were removed from the ruins of the office and buried on the bluff overlooking the desolate city.

Capt. Robinson paid unqualified tribute to the unquestioning devotion of his staff and crew. The Chinese crew worked marvellously, a large number of them volunteering to go ashore to loosen the ship's lines when she was towed back from the flaming oil by the Steel Navigator. This heroic deed, which looked like certain death for the Chinese, was rewarded as this little handful of men, leaping into the water, were heaved aboard by their officers and mates.

Rev. E. J. D. Fraser, who was on the s.s. Empress of Canada, in writing a Toronto friend, says that when the ship was nearing Yokohama, Sept. 2, the following notice was posted up: "Wireless advices this morning state that Yokohama was destroyed at noon Saturday by earthquake and fire. There is no accommodation for passengers ashore, and the place is cut off from all the outside world. The ship will call there, but only to embark passengers and land mail. We are unable to get any further details, as the shore stations will not allow us to work, and the above message was one that was permitted from our Empress of Australia, at present alongside the wharf at Yokohama. From the like cause we are unable to get a message through."

Results on Railways.—Press dispatches state that the central railway station at Tokio was almost completely destroyed; that communications throughout Tokio and Japan were completely disorganized; that a train on the Tokio-Sendai Ry. was reported to have fallen into a river while crossing a damaged bridge; and that 500 lives had been lost. Another report stated that 600 persons perished when the Sacsago railway tunnel, the largest in Japan, collapsed. An Osaka dispatch of Sept. 7 stated that the greatest disorder prevailed at all exits from Tokio, that in the frenzied rush from the city the weaker were trampled under foot, that every train carried about 4,000 refugees, and that on the previous day nine trains left Akabane, some miles north of Tokio, with 40,000 persons. It was raining, and passengers on the car roofs turned their mouths skyward to catch the drops. Railway forces were reported to be working feverishly on the lines to restore shattered communications, so that the food and clothing piling up at Kobe and Osaka might be moved as soon as possible to the capital.

T. C. Maitland, Manager of the Manufacturers' Life Insurance Co's Japanese office, who arrived at Victoria, B.C., on the Empress of Asia, is reported to have said: "I was on the train between Tokio and Yokohama, and was within five miles of the latter place, when the shock came. The train was moving slowly, and the first crash was so severe that everyone thought another train had smashed into us at full speed, but it was instantly followed by violent bumping and swaying from side to side and up and down. The railway tracks at this point were very wide. In a flash I saw the rails twist and squirm like snakes, and saw houses fall sideways or collapse as if crushed by some irresistible weight. We saw a great temple crash in a few seconds. Jumping from the train, I ran a few yards to the middle of the tracks, but it was impossible to keep one's feet on the ground, as it was undulating like the waves of the sea. Great cracks appeared

in the earth, and the air was thick with dust from the plaster of the crashing roofs and walls of the native houses, and the cries of the terrified people rang in my ears."

E. W. Beatty, President, C.P.R., a few days after the disaster, before leaving for the Pacific coast, was reported to have said that Canadian shipping, Canadian railways, and Canadian manufacturers will be more or less seriously affected, as there may be an interruption in the flow of goods for a considerable time. There may be a recompense in the rehabilitation of the devastated cities. Japan will most likely look to Canada and the United States for building materials, but on the whole the Japanese catastrophe will have a retarding influence on Canadian trade with the Orient.

Marine Losses.—Suzuki & Co., Japanese merchants in London, Eng., have informed Lloyd's that, as far as they could ascertain, there was no great loss of shipping by the earthquake. An Osaka dispatch said that two capital ships had sunk at the Yokosuka naval base, owing to a tidal wave following the earthquake.

W. Evan Gray, Provincial Superintendent of Insurance, Toronto, is reported to have said: "The marine losses due to the catastrophe are likely to be very serious. This will be occasioned not only by the loss of ships in harbors, but more so by the destruction of merchandise in docks and warehouses covered by special marine policies. It was the practice of the companies to insure merchandise by marine policies under 'warehouse to warehouse' cover. Doubtless large quantities of merchandise shipped under this cover and not yet put in warehouse in Yokohama, have been destroyed, and also goods in warehouse still under 'shore and cover' provided by marine policies. These risks would be placed largely in London Lloyds and other marine underwriters. The extent of this loss is impossible to estimate at present, but the later particulars now arriving with regard to the disaster seem to be reducing the original estimates of property destroyed."

Navigation Difficulties.—Press dispatches state that the eastern breakwater at Yokohama has more than half disappeared; that the northern breakwater has sunk 7 ft.; that half of the Yokohama pier has sunk, and that all lighthouses have been destroyed. A Washington, D.C., press dispatch of Sept. 6, said that the U.S. Shipping Board's agent at Manila had reported that the earthquake had raised the floor of Yokohama harbor, trapping several ships inside the port, and that this might necessitate the use of Kobe as the principal receiving port for relief supplies. Another Washington press dispatch of Sept. 7, said it was expected that, as a result of the earthquake, all charts of the Pacific Ocean, between 130 and 140 degrees west longitude, and from the Equator to 150 degrees north latitude, would have to be revised.

Relief Work.—The C.P.R.'s s.s. Empress of Russia sailed from Vancouver, Sept. 6, after having had considerable cargo taken out to make room for relief supplies, carrying some 500 tons of flour, canned salmon, canned milk and other necessities for the stricken people, and was the first ship from this continent to reach Japan with relief supplies.

President Beatty, of the C.P.R., announced from Sicamous, B.C., Sept. 15, that the company would give \$25,000 to the relief fund, and would carry free, over the company's rails and steamship

lines, all Canadian clothing and food-stuffs given, or bought with money donated for relief work. The passengers on the s.s. Empress of Canada subscribed about \$8,500 for the sufferers. The Northern Pacific Ry. has given \$5,000, and has announced that food for human consumption, when given to and handled by responsible organizations, will be carried free of charge.

Toronto Viaduct and Union Station.

An Ottawa press report stated early in September that the acting Minister of Railways, Mr. Robb, had asked the Board of Railway Commissioners to enquire into the validity of a report that the railways were preparing to enter the new union station at Toronto, with rails on the present level, instead of on a viaduct, and also that he had requested Sir Henry Thornton, President, Canadian National Rys., to give him an explanation of the C.N.R.'s decision with respect to the viaduct. In answer to an enquiry, Mr. Robb informed Canadian Railway and Marine World, on Sept. 7, that having received telegrams intimating that the railways intended entering the station at the present rail level, he took the matter up with the Board of Railway Commissioners, and ascertained that no application had been made by the railways in that connection. He added that in so far as the decision of the C.N.R. President relative to the viaduct was concerned, he had no information.

When E. W. Beatty, President, C.P.R., was in Toronto, Sept. 6, en route to the Pacific coast, he was reported as having stated in an interview that on his return to Montreal, early in October, he would make a definite statement as to the company's attitude on the viaduct and union station question. Sir Henry Thornton, President, C.N.R., when in Toronto on Sept. 28, was reported to have said that he would be prepared to announce the C.N.R.'s attitude within a month thereafter, and added that he would consult with Mr. Beatty before doing so, and that he expected Mr. Beatty would consult him before making any announcement.

Air Mail Service for Prince Edward Island.—Major Shearer, Royal Canadian Air Force, is reported to have said, in addressing the Charlottetown Rotary Club, recently, that he was enquiring into the question of carrying mails by seaplane between Sackville, N.B., and Charlottetown; that he hoped that two machines could be put in commission, each to carry from 400 to 500 lb. of 1st and 2nd class mail; that one trip a day could be made, and that a landing could be made in the water in summer, and on the ice in winter. Post Office Department officials in Ottawa are reported to have stated that no such service is contemplated.

Railway Officials Speak at Sherbrooke.—The Sherbrooke, Que. Great Eastern Exhibition directors gave a luncheon recently, at which a number of railway officials were guests, including Grant Hall, Vice President, and W. B. Lanigan, General Freight Traffic Manager, C.P.R.; S. J. Hungerford, Vice President, Operation and Construction, and H. H. Melanson, General Passenger Traffic Manager, Canadian National Rys.; J. H. Walsh, General Manager, Quebec Central Ry.; J. W. Rimmer, Assistant to Vice President, Traffic Department, and F. E. Farrar, Assistant General Freight Agent, Boston and Maine Rd.

Lord Renfrew's Canadian Trip and Its Transportation Features.

The Canadian Pacific Ry's wide reaching water and land service have again been brought prominently before the people of Great Britain especially, and of the world generally, by the visit of the Prince of Wales, travelling incognito as Lord Renfrew, to his Alberta ranch, to reach which he crossed the Atlantic Ocean on a C.P.R. steamship, stayed at a C.P.R. hotel in Quebec, and travelled thence by a special C.P.R. train to High River, Alta., from which he made a week-end trip to the C.P.R. hotel at Banff.

On reaching Southampton, Eng., on Sept. 5, Lord Renfrew boarded the s.s. Empress of France, Capt. E. Griffiths, R.N.R., commanding, and before sailing, chatted on the bridge for some time with Capt. Kendall, C.P.R. Marine Superintendent. He was accompanied by several members of his staff and several servants, and he and his party occupied a suite of rooms on deck C, taking most of his meals in the dining saloon as a regular passenger. During the voyage he made a thorough inspection of the whole ship. The Empress of France docked at Quebec on Sept. 12, at 8.05 a.m., and was boarded almost immediately by Lord Shaughnessy, Chairman of the Board, C.P.R., who was accompanied by Capt. J. T. Walsh, Manager, Canadian Pacific Steamships, and R. G. Chamberlain, Chief of Investigation Department, C.P.R., who, as during the Prince's former visit to Canada, was specially detailed to look after his safety. Lord Shaughnessy went ashore again after a short time, and it was not until about 11 a.m. that Mr. Chamberlain appeared at the gangway opening, preceding Lord Renfrew, who went ashore and was driven to the Chateau Frontenac, where he stayed till the next day, during which Lord Shaughnessy had a long chat with him, and he played several games of golf, and attended an evening dance. He and his party left the Palais station, Quebec, Sept. 13, at 3.13 p.m., the special train consisting of Lord Shaughnessy's car, Killarney, compartment car Glen Atha, business car Champlain, and a baggage car. The party was accompanied throughout the journey by Mr. Chamberlain, and by W. B. Howard, Assistant General Passenger Agent, C.P.R., Montreal, the company's principal local officials travelling on the train over their respective territories. The train passed through Montreal's suburb, Outremont, where locomotives were changed, arriving at Ottawa at 10.50 p.m., where it stayed 10 minutes. Stops were made at the various division points, to change locomotives, and Fort William was reached on Sept. 15 at 2.45 a.m. At Ingolf, 94 miles east of Winnipeg, Lord Renfrew went forward and rode on the locomotive for some distance. The train reached Calgary on Sept. 16 at 12.35 p.m., where it stayed, at his request, until 4.45 p.m., during which he played a game of golf, and High River was reached at 5.58 p.m. The train was sharp on its schedule time at all stations and division points. On Sept. 22, he went to Banff for the week-end, staying at the C.P.R. hotel, and returned to his ranch on Sept. 25.

A Calgary press dispatch of Sept. 29 stated that Lord Renfrew would arrive there the following afternoon, would occupy a suite at the Palliser Hotel, and would leave on the evening of Oct. 2 for Winnipeg. A Montreal dispatch of Sept. 27 said that E. W. Beatty, President,

C.P.R., would entertain Lord Renfrew at dinner at the Mount Royal Club there on Oct. 11. He will sail from Quebec on the Empress of France on Oct. 13, occupying the same suite as before.

Oshawa Ry. and Toronto Eastern Ry.—Since the article under this heading on page 494 of this issue went to press, in which an Oshawa press report, stating that the Oshawa Ry. was to be merged with the Toronto Eastern Ry., was quoted, Canadian Railway and Marine World has been informed, both from C.N.R. headquarters in Montreal, and from Oshawa Ry. headquarters in Gananoque, that nothing is known of the matter, and that the report is not believed.

The C.P.R. and Hungarian Railways.—A London, Eng. press dispatch stated recently that the Schneider-Creusot interests were negotiating with Hungary for a concession covering Hungarian State Railways, and that the C.P.R. had rejected Hungary's preliminary offer in this connection.



FOR SALE

Car Ferry "Great Western"

The Canadian National Railways offer for sale Car Ferry "Great Western," now lying alongside slip at Windsor, Ont. Sealed tenders addressed to the undersigned will be received until noon of

October 15th, 1923

This boat can be used as a Car Ferry, Automobile Ferry, or can be dismantled and used as a lighter for wrecking purposes.

DESCRIPTION.

Length over all—237 ft.
Length B. P.—220 ft.
Beam—40 ft. 2 ins.
Beam over Guards—72 ft.
Depth—13 ft.
Gross tons—1080; Net tons—756.87.
Watertight Bulkheads—One.
Draught—Loaded—9 ft. mean.
Light—6 ft.
Boilers—4; Size: 9' 6" x 14'.
No. of Furnaces—8.
Heating Surface—1228.16 sq. ft. each.
Grate Area—96 sq. ft. each.
Pressure—65 lbs.
Engines—2.
Average Speed—10 miles light; 8 miles loaded.
Nominal H.P.—129.
Indicated H.P.—700.
Passenger Equipment for about 250 people.
Area of deck for automobile purposes—5500 sq. ft.

Arrangements may be made to inspect this boat on application to Captain C. H. Nicholson, Manager of Canada Atlantic Transit Company, Lake Michigan, Detroit River and Lake Ontario Car Ferries, Toronto.

The highest or any tender not necessarily accepted.

(Signed) **R. C. VAUGHAN,**

Director of Purchases and Stores,
Canadian National Railways,
Montreal.

Railway Wages and Working Conditions in Canada and the United States.

Maintenance Employees.—As stated in Canadian Railway and Marine World for September, consequent on the negotiations concerning wages between the Railway Association of Canada's operating committee's wage sub-committee and representatives of the maintenance of way employes having failed to produce an agreement, the employes applied to the Dominion Labor Department for a board of conciliation and investigation under the Industrial Disputes Investigation Act. The application, which was granted, indicated that it was made because of the railways' refusal to grant 5c an hour wage increase. The employes nominated David Campbell, Winnipeg, to represent them on the board, and the railways nominated R. T. Riley, Winnipeg, formerly a Canadian National Rys. director. The Minister appointed E. McG. Quirk, Montreal, as Chairman in the absence of a joint recommendation from other members of the board.

Shopmen.—At the time of writing (Sept. 21) no information additional to that contained in former issues of Canadian Railway and Marine World is available as to the progress of the wage negotiations between the Railway Association of Canada's operating committee's wage sub-committee and the shopmen. The railways refused to meet the employes' demands for wage increases. The names of the railways' and shopmen's representatives conducting the negotiations were given in our September issue.

C.P.R. Telegraphers.—A dispute concerning wages and working conditions having arisen between the C.P.R. and its telegraph department employes who are members of the Order of Railroad Telegraphers, a board of conciliation and investigation was applied for by the latter, and the application was granted. The employes nominated David Campbell, of Winnipeg, as their representative, and the railways nominated J. B. Coyne, Winnipeg. At the time of writing (Sept. 20) no chairman had been announced.

Algoma Steel Corporation Train Service Employees.—On Nov. 1, 1920, the Algoma Steel Corporation locomotive men, firemen, conductors and trainmen entered into an agreement with the management as to wages. In Jan., 1921, a reduction was made, followed by others in May and September of the same year. The employes, considering the cuts too drastic, obtained a board of conciliation and investigation under the Industrial Disputes Investigation Act, in Dec., 1922, but that board relegated the employes to the courts for relief. Since the reductions in pay were made, two increases were granted, the result being that while the total decreases amounted to 35%, the increases amounted to 25%. The employes asked recently for the standardization of their rates with those paid employes of steam railways, back pay claimed as due under the 1920 agreement, eight hours a day and time and a half for overtime after 8 hours. These being refused, the employes asked for another board, which was granted, the company being represented by F. H. McGuigan, Toronto, the employes by Senator G. D. Robertson, and J. G. O'Donoghue, Toronto, being appointed chairman by the Minister of Labor. The board met at Toronto on Aug. 21, 22

and 23, and at Montreal on Sept. 5 and 6, the company being represented by J. D. Jones, and the employes by H. H. Lynch, Vice President, Brotherhood of Locomotive Firemen and Enginemen; E. De Courcy, Chairman, Enginemen's and Firemen's Committee; W. J. Babe, Vice President, Brotherhood of Railroad Trainmen, and R. Kerr, Chairman, conductors' and brakemen's committee. The Board's majority report, issued Sept. 6 and signed by Messrs. O'Donoghue and Robertson, was as follows: "While considerable merit is behind the claim of the men re back pay, the board feels that it should not be pressed. The eight hour day now obtains and should not be changed. We are of opinion that time and one-half should be paid after 8 hours, where the overtime is caused by the company. It seems that an agreement was entered into between the company and its men in transportation service that they should receive the same pay as the Algoma Central Ry's yard employes at Sault Ste. Marie. This agreement was carried out for two months, when a new arrangement was arrived at. We consider that agreement reasonable and that it should be adhered to." Mr. McGuigan, in a minority report, held that the Steel Corporation should not be required to pay its men as much as the A.C.R. yardmen, as he considered it would be unwise and unjust to increase the Corporation's burdens under present financial, industrial and market conditions.

Canadian National Rys. Clerks, Freight Handlers, Etc.—A conference of Canadian Brotherhood of Railroad Employees' officers was held in Toronto late in August to formulate wage demands to be made to the C.N.R. management, on behalf of employes who are members of the brotherhood, and to consider applying for one schedule covering the whole system. The following attended the conference: A. R. Mosher, President; C. E. Cole, Moncton, Chairman; P. Larkin, Toronto, Vice Chairman, and R. H. Wilson, Moncton, Secretary, of the Eastern Lines employes' general committee; J. E. McGuire, Ottawa, Chairman; A. E. Chick, London, Vice Chairman, and A. E. Lawrence, Montreal, Secretary, of the Central Lines employes' general committee; R. Dykes, Winnipeg, Chairman, W. A. Hardacre, Edson, Alta., Vice Chairman, and C. H. Minchin, Calgary, Secretary, Western Lines employes' general committee. Although it was unofficially reported that restoration of the wage rates in effect prior to the reduction made in 1921, and one schedule covering all lines would be asked, the decisions arrived at were not made public officially.

C. B. R. E. Meeting.—The Canadian Brotherhood of Railroad Employees' biennial meeting began in Calgary on Sept. 17. A. R. Mosher, President, addressed the 185 delegates present, exhorting them to encourage all members of the organization to give good service to the railways and to educate themselves on economic matters. There has been some trouble in this organization lately on account of numerous members claiming that their President had exceeded his authority in bringing economic experts into Canada from the U.S. to prepare data on living costs, etc. These members are said to have threatened to try to displace Mr. Mosher from the Presi-

dency and to replace him with C. H. Minchin, a former member of the Calgary city council and now a member of the C.B.R.E. executive. In his address to the convention on Sept. 17 Mr. Mosher stated that a U.S. economic expert's services had been secured, but that this action had been taken only after the entire executive's approval was secured. A. R. Mosher was re-elected President by a majority of 8 votes only, polling 56, against 48 for C. H. Minchin of Calgary. M. McLeod, Charlottetown, P.E.I., was elected Vice President, and M. M. MacLean, Ottawa, was re-elected Secretary Treasurer. The executive board, consisting of the President as chairman, the Vice President, Secretary-Treasurer, C. H. Minchin, Calgary, and N. L. Preston, Winnipeg, were re-elected. W. Allen, Halifax; J. W. White, Toronto; and C. H. Minchin, Calgary, were elected vice presidents for the Atlantic, Central and Western Regions, respectively, and Messrs. McLeod, Preston, Minchin and J. O'Reilly, Hamilton, Ont., were elected trustees. The next Dominion meeting will be held in Toronto in 1925.

The One Big Union, the membership of which is now pretty well confined to radicals and Labor organization "outlaws" between the Great Lakes and the Pacific coast, was stated in a Winnipeg report of Aug. 25 to be advocating the causing of labor troubles on the railways during the crop moving period. The report said: "Urging general tie-up of Canadian railway lines during the height of the western grain rush as the only means of forcing the Railway Association of Canada to accede to the demands of the railway workers for increased wages and other conditions, a call to action will be sent out today by the One Big Union, to ascertain the prevailing sentiment of both organized and unorganized railway workers throughout the west." It added that a lot of dissatisfaction was felt with the slow progress being made by the shopmen's officers in their efforts to get higher wages.

Halifax Board of Trade Resolutions re Railway Wages.—Canadian Railway and Marine World for September stated that Halifax, N.S., Board of Trade's council had passed a resolution favoring a reduction in railway wages and salaries, and had sent a copy to the Winnipeg Board of Trade, evidently with the hope of getting that body to pass a similar resolution. The Winnipeg board, however, merely placed the copy of the resolution on file, and took no action on it. A Halifax paper states that the following resolution was passed by the Halifax Board of Trade's council on Aug. 28: "Whereas, it is stated that various railway labor organizations are about to demand increases of pay from Canadian railways; and whereas, in Canada in 1916, 140,158 railway employes handled 109,659,099 tons of freight and received \$100,362,391 in wages, while the public paid freight charges of \$184,236,331; and whereas, in Canada in 1922, 153,887 railway employes handled 102,192,026 tons of freight and received \$217,864,428 in wages, while the public paid freight charges of \$313,606,974; and whereas the wages of railway employes in Canada and the conditions of labor have followed the wages and conditions established in the U.S. by the McAdoo and Chicago awards; and whereas the U.S. has about the same area as Canada, with a population more

than twelve times as great, and the wealth of the producing classes is much greater per capita than the corresponding classes in Canada; and whereas in the last analysis the burden of sustaining the transportation systems of a country fall upon the producing classes, who are at the same time the largest consumers; and whereas the progress and development of our country is bound up with the efficiency and cheapness of our transportation system; and whereas the wages of Canadian railway employees following the wages of U.S. railway employees, have increased more than \$117,000,000 in 6 years, while the public were compelled to pay in 1922 nearly \$100,000,000 more for transporting over 7,000,000 tons less freight than in 1916; and whereas our transportation systems as a whole are now operating at a deficit, therefore be it resolved that the Halifax Board of Trade views with alarm the tremendous burdens imposed upon the public by high freight rates and the great deficits of the transportation systems; that all possible reductions be made in the staffs of Canadian railways of Canada compatible with their efficient operation; that steps be taken to reduce the wages of railway employees to a level with similar labor in other undertakings in Canada and to a point within the means of the public to pay; that working conditions on railways be revised, with a view of removing part at least of the loss and inconvenience to which the railways and the public are now subjected, and that copies of this resolution be sent to the Prime Minister, the Minister of Railways and Canals, the Minister of Labor, the Presidents of the Canadian National and Canadian Pacific Rys., federal members for Nova Scotia, and boards of trade and similar organizations."

United States—The decision arrived at by the conductors and trainmen to organize a movement for higher wages was mentioned in Canadian Railway and Marine World for September. The firemen and switchmen have now come to a similar decision. At a meeting in Chicago on Sept. 6 and 7, attended by general chairmen of the Brotherhood of Locomotive Firemen and Enginemen, and of the Switchmen's Union of North America, it was decided to apply for wage increases which would restore, and in the case of the switchmen more than restore, the peak wages in effect prior to July 1, 1921, on which date the U.S. Railroad Labor Board ordered decreases averaging about 12½%. T. C. Cashin, President, Switchmen's Union, is reported to have stated that increases would be asked for as follows: foremen, from \$6.32 to \$7.50 a day; helpers, from \$5.84 to \$7 a day, and switch tenders, from \$4.40 to \$7 a day—increases of 18, 19 and 59% respectively. It will thus be seen that all of the train service brotherhoods have declared their intention to inaugurate a campaign for higher wages to be effective on the termination of present contracts, with the exception of the Brotherhood of Locomotive Engineers.

The Pennsylvania Rd. has granted an increase of \$10 a month to track foremen and \$5 a month to bridge and building foremen, assistant foremen and inspectors of bridges and buildings. The increases are said to total \$550,000 annually, and affect 3,600 employees. Other U.S. roads have given slight wage increases to different classes of employees, notably clerical workers, shopmen, and maintenance of way and signal department employees.

The Pacific Export Route for Western Grain.

Canadian Railway and Marine World has published in recent issues several articles dealing with the Pacific export route for grain grown in the prairie provinces, and the subject has again been prominently brought to the fore by the British Columbia and Alberta rate appeal, the examination made into the feasibility of Vancouver as a grain export trade port by the commission appointed to investigate the grain trade, and the threat of a serious grain blockade on the eastern route because of bungling Dominion legislation in connection with the lake freight rates. British Columbia people are convinced that Vancouver should be the outlet for a large portion of western Canada's export grain, and are most enthusiastic regarding the port's future as such.

The commission enquiring into the grain trade, composed of Mr. Justice Turgeon, of the Saskatchewan Supreme Court; Dean Rutherford, of Saskatchewan University's Agriculture Faculty; Dr. McGibbon, Professor of Economics, at Alberta University, and J. G. Scott, of Quebec, sat at Vancouver on Sept. 10 and 11, and all witnesses examined expressed the opinion that that port should handle much more export wheat than it has been doing. Emphasis was placed on the fact that if a large proportion of wheat went through Vancouver, then via the Pacific to oriental markets, or via the Panama Canal and the Atlantic to British and European markets, not so much would go through U.S. eastern ports, with the result that the portion going to U.S. dealers and transportation agencies would remain in Canada. It was also claimed that rail transportation costs on wheat consigned to Vancouver should be lower, so as to secure a better return to the farmers, and that if the farmers could use the western route they would have the advantage of not being forced to dump their wheat on the market in the autumn, owing to the Pacific route being open all year round. As to the amount of shipping available on the Pacific coast, it was submitted that there are now more ships in the world than are necessary to carry the world's commerce, and that for that reason if traffic were offered at reasonable rates enough ships would soon appear to carry it. G. G. McGeer, K.C., who represented British Columbia in the recent rate appeal proceedings before the Dominion Cabinet (see Canadian Railway and Marine World for September, pg. 417) called many witnesses, who were unanimous in urging the necessity of reducing west-bound grain rates to a parity with those eastbound from prairie territory. The fewer handlings to which export grain would be subjected when going via Vancouver as compared to the eastern route, was also pointed out.

On Sept. 11 the members of the commission were taken by the Vancouver Board of Harbor Commissioners on a tour of the harbor. Col. J. F. Fitzpatrick, President of the Harbor Commissioners, presented a statement dealing with grain handling facility developments at Vancouver, and pointed out that plans are being carried out to augment the facilities at the existing Dominion Government elevator, which came under the harbor commissioners' control on Aug. 31, and that work on the second

government elevator is being proceeded with, with the expectation of having it ready for operation by April, 1924.

During the first 8 months of 1923, there were 10,261,598 bush. of wheat exported through the government elevator at Vancouver. Shipments were heavy during January, February, March and April, and then dropped off during the succeeding 4 months, but it is expected that export handling during the last 4 months of this year will be heavy, and that the amount of 11,512,698 bush. handled through the government elevator in 1922 will be greatly exceeded in 1923.

Self-Propelled Cars on Steam Railways.

The large gasoline motor car ordered by the G.T.R. management from the National Steel Car Corporation, before the co-ordination of the G.T.R. with the Canadian National Rys., was described fully in Canadian Railway and Marine World for February, when it was pointed out that this was the largest self propelled car ordered for operation on Canadian steam railways. The car was practically completed recently with the exception of the interior finishing, and a trial run was made between Hamilton and Niagara Falls, under the supervision of R. J. Needham, Mechanical and Electrical Engineer, Central Region, Toronto. It is reported that the trial was successful. Afterwards the car returned to the builder's plant at Hamilton, Ont., for completion of the interior fitting.

Particulars of the conversion of a gasoline-electric car which was operated formerly between Winnipeg and Transcona, Man., into a storage battery car, at the Niagara, St. Catharines and Toronto Ry. shops at St. Catharines, Ont., were given in a preceding issue of Canadian Railway and Marine World. As a gasoline-electric car, the power plant consisted of a G.E. gasoline engine, coupled with generator, the engine having 8 cylinders, and developing up to 175 h.p., the dynamo being rated at 80 k.w. There were only 2 motors, G.E. type 205B, the drive being to the leading truck axles. The car is now equipped with 250 Edison A-12-H storage batteries, and 4 G.E. type G-261 ball bearing motors of 25 h.p. each. At the time of writing (Sept. 15) the conversion is practically completed, and it is expected that the car will be restored to its former run very soon.

The Canadian National Rys. are having an additional storage battery car built at St. Catharines, and have plans for building 4 more. A standard frame for all battery cars to be acquired in future is being developed, and the frame of the car being built conforms more or less closely to the specifications that will be adopted as standard. The standard frame will be designed to be adaptable to three types of body construction, viz.: 1. A car body divided into a space with seating accommodation for 44 passengers, a 16-passenger smoking compartment and a small baggage compartment. 2. A body without baggage space, to provide total seating capacity for 70 passengers in a main compartment, and in a smoking compartment with accommodation for 20 or 24 passengers. 3. A body with accommodation approximately equally divided as between milk and passengers, with seating capacity for 34.

Railway Exhibits at Canadian National Exhibition.

The two largest Canadian railways had exhibits at the Canadian National Exhibition in Toronto, from Aug. 25 to Sept. 8, which brought home to the general public realistically the excellence of the railway equipment in use, the comforts and conveniences offered the travelling public, the desirable features of the various pleasure resorts conducted by the railways, and the extent to which Canadian railways have extended their transportation service to practically all parts of the world, and which doubtless it may be supposed, served to give the public an inkling of the vast amount of planning and effort that is required to make possible the high standards of transportation service which are accepted by it as a matter of course.

Near the western entrance to the exhibition grounds the C.P.R. had an all-steel passenger train, headed by Pacific type passenger locomotive 2324, of the type described and illustrated elsewhere in this issue; the cars being as follows: baggage 4384; tourist 6209; dining Wardou, standard sleeping Netley, and compartment sleeping Glenatha. The tables in the dining car were spread, and some of the berths in the sleeping cars were made up, showing in detail the excellence of the service provided.

On an adjacent track, the Canadian National had mountain type passenger locomotive 6015, of the same type as no. 6000, described fully in Canadian Railway and Marine World for July, and which are the largest locomotives employed in railway passenger service in Canada. In addition, the C.N.R. had, on an adjoining track, a mail and express car of the latest type, no. 9721. This equipment was in charge of D. Campbell, of the mechanical department at Mimico, Ont.

The exhibits in the railways building were arranged in an ideal manner, not only from the artistic point of view, but also from their advertising value to the railway, and were certainly of great educational value to the public. The Canadian National Rys. had a teletype installation, in charge of W. G. Barber, General Superintendent, Commercial Telegraphs, Toronto, and R. J. Foster, Supervisor, Commercial Telegraphs, Toronto, on which messages were transmitted. As a background for the installation was a large map, showing the principal points served by the railway telegraph system. In an adjoining room a large wall map was arranged electrically in such a way that the names of important towns and cities reached were illuminated to correspond with the run of a transcontinental train, and in the case of any city in which there is a C.N.R. hotel there was a special compartment containing the name of the hotel, which was also illuminated, including Chateau Laurier, Ottawa; Highland Inn, Algonquin Park; Nipigon Lodge, in the Nipigon River country; Prince Arthur Hotel, Port Arthur; Minaki Inn, Minaki, Ont.; Fort Garry, Winnipeg; Prince Edward, Brandon; the Macdonald, Edmonton; and Jasper Park Lodge, Jasper National Park. Depicting the lake and rail route from eastern points to the head of Lake Superior was a fine painting of the Northern Navigation Co's s.s. Noronic, and representative of the Niagara, St. Catharines & Toronto Navigation Co. were large pictures of the ships Dalhousie City and Northumberland, and also one of Niagara Falls. A map was arranged to show the route tak-

en by travellers making the "Triangle Tour" trip in British Columbia. The exhibit was completed by pictures showing Canadian Government Merchant Marine operations, and by illuminated colored transparencies showing scenes to be met with in a trans-Canada trip, including the Maritime Provinces, the St. Lawrence River area, the Ontario summer resorts, Minaki Inn, Jasper National Park, Mt. Robson, and the north Pacific coast. A. S. Davis, Travelling Passenger Agent, Toronto, was in charge of this portion of the exhibit.

The C.P.R.'s exhibit, in charge of E. R. Bruce, Director of Exhibits, showed the manner in which C.P.R. service encircles the globe, and contained scenes in all parts of the world. In the middle of the large room was a great globe, on which the company's steamship routes were shown, and in the large recesses in the walls were panoramas, in which ships were moved by electric power, showing scenes to be met with in different parts of the world visited on C.P.R. cruises. Another panoramic arrangement showed Dufferin Terrace, in front of the Chateau Frontenac, Quebec, and the winter sports held there. Paintings and colored transparent views included the following subjects: bungalow camps at different points, some of these being mounted on three pyramids, revolving simultaneously; Banff Springs Hotel; Lake Louise, and scenes in Madeira, Gibraltar, Algiers, Monte Carlo, Egypt, India, Rangoon, Ceylon, Java, China, Japan and Honolulu. The paintings were done by J. B. Crockett and A. S. Scott, Montreal artists. Always characterized by ingenious novelty, artistic skill and educational value, the C.P.R. 1923 exhibit was one in which all previous efforts were surpassed.

The Canadian National Rys. had, in another building, an exhibit from Stratford shops, which was of intense interest, not only to railway mechanical men, but to the public generally, and which not only emphasized the mechanical skill, accuracy and thoroughness for which they have long been noted, but revealed in a convincing way the excellence of the apprentice training system there. The exhibit, in charge of L. Bexon, Instructor of Apprentices, Stratford, contained numerous drawing by apprentices, many of which had taken prizes in various competitions, and a great many samples of work done at the shops by both apprentices and mechanics. Prominent among the drawings was one, by an apprentice, of a 5-feed hydrostatic lubricator, which took first prize in 1922, and another, also by an apprentice, of a 4-arc welding set, which took first prize in 1921, in the apprentice drawing competition. Among the samples of work from the shops were section of locomotive back tube sheet, showing tubes and flues beaded and welded; section of firebox sheets, showing method of installation of Tate flexible staybolts; taps, dies and reamers; model of front end of 5300 class Pacific type locomotive, with saddle "castings" made of wood, steam pipes, smoke box, etc., of 1/4 in. steel plate, and all fittings standard; inspection gauges, gears, screws, sockets, pins, valves and numerous other fittings. Completing the exhibit were photographs of some of the shops, and of winning teams of employees and apprentices in various athletic events; a wooden model of a class S 1 d

mikado locomotive, made at the shops; a Young valve gear model; a complete Ragonnet power reverse gear installation; a chime whistle; pop valves; steam and air gauges; Okadee blow off cock; Hancock sprinkler fittings; inspirator and boiler feed check valves; various Westinghouse air brake fittings; and a photograph of the large driving wheel lathe in the locomotive shop.

Sir Henry Thornton's Winnipeg Office.

Canadian Railway and Marine World for September stated briefly that it had been announced at Winnipeg that Sir Henry Thornton, President, Canadian National Rys., had established a personal office in Fort Garry station, and that he would be there at regular intervals of five weeks. The official announcement which he issued at Winnipeg, Aug. 22, was as follows: "It has been decided that the President of the Canadian National Rys. shall establish a personal office in the C.N.R. station at Winnipeg for the following reasons: The growing importance of western Canada and its future development require that the executive should establish and retain that personal contact and accessibility which is essential for the efficient and economical direction of the company's business in the west. The present executive offices are located in Montreal in the east, and are reasonably easy of access to those in that part of the Dominion who desire to discuss matters of mutual importance to themselves and the company. This is not the case with respect to the west, and long journeys to persons having business to transact with the company are thereby necessitated at the expense of much loss of time and delay. On the other hand, Winnipeg represents about the most westerly point at which the proposed office can be located without the consumption of excessive time spent by the President in travelling, with consequent absence from headquarters. The office proposed can be established without additional expense, as suitable space already exists, and the work can be absorbed by the present clerical staff. In general it is hoped that what is proposed will secure a more speedy and satisfactory decision on important matters, permit a better understanding of problems affecting the company and the public, and materially improve the usefulness of the national system as an instrument for the promotion of public welfare. In pursuance of the above it is the intention that the President of the company will spend a certain time in each five weeks in Winnipeg, of which due notice will be given in advance through the press. As far as possible the time selected will be at regular intervals, in order to ensure to the public a reasonable degree of dependence."

Damages for Grade Crossing Accident. A Kingston, Ont. press dispatch says that L. J. Jewell, a commercial traveller there, who was severely injured on Nov. 20, 1922, when a Canadian National Rys. train struck his automobile on the railway crossing at Cataragui, has been given a verdict of \$1,500 against the C.N.R. The jury found that proper signals had not been given as the train approached the crossing. The case will probably be appealed.

Alberta Coal Rates and Shipments to Ontario.

Particulars of a \$7 rate made by the Canadian National Rys. on an experimental shipment of Alberta domestic coal to Ontario were given in Canadian Railway and Marine World for August. The temporary concession was the cause of rate reductions being sought elsewhere, and on Aug. 27 Winnipeg City Council decided to ask for lower rates on coal from Alberta to Winnipeg, adopting the following motion: "That in view of the importance of developing western Canada's fuel resources to a greater extent, and the desirability of supplying the consumer with domestic coal at a reasonable cost, the council petition the Canadian National and Canadian Pacific Rys. for a reduction in the rate for transportation of coal from the fields of western Canada to Winnipeg." Copies of the resolution were forwarded to the Canadian National and Canadian Pacific's presidents.

A conference was held at Ottawa early in September between Sir Henry Thornton, President Canadian National Rys., and Premier Ferguson of Ontario, concerning coal rates, and another conference was held in Toronto on Sept. 14, between Attorney General Nickle of Ontario, and Canadian National Rys. traffic officers. A Montreal press report of Sept. 16 stated that J. E. Dalrymple, Vice President, Traffic Department, Canadian National Rys., had said "The tariff on coal from Alberta to Ontario points has been advanced to \$12.70 a ton. There has really been no other rate in existence, except that we agreed to handle a limited tonnage for experimental purposes. That contract has been carried out, with the rate it provided, \$7 a ton. The period of the experiment having passed, we have decided to put our rates on coal from the west back on a commercial basis."

On Sept. 13 Sir Henry Thornton, President, Canadian National Rys., telegraphed Premier Ferguson of Ontario as follows: "Referring to our discussion at Ottawa this week re Alberta coal. We are willing to extend application of \$7 rate on additional 10,000 tons, to be forwarded from mines before midnight, Oct. 31, such coal to be consigned to Ontario Government and distributed to dealers as your Government may consider advisable. This was condition attached to movements for Alberta Government. Regret our obligations in public interest to move heavy grain crop will not permit us to extend application of \$9 rate on coal moving after Oct. 31. Our Freight Traffic Manager, Mr. Watson, will be in Toronto tomorrow and will get in touch with you as to any further details." It would appear from the foregoing that Mr. Dalrymple's statement was based on the fact of the \$9 rate being discontinued, and was made to cover the rate situation as it exists, apart from the special concession made at the Ontario Government's request. The reduction in the rate to \$9 a ton was the first concession made, and, as stated in Canadian Railway and Marine World for June, pg. 271, Sir Henry Thornton, in announcing this rate, stated that it was to apply only during May, June and July to coal moving in trainload lots. As stated in our August issue, a \$7 rate was put in subsequently by agreement between Sir Henry and the Alberta Government, but only for a trial ship-

ment, so that this rate, like the \$7 rate granted to the Ontario Government, covering only a specified movement, could not be considered to have indicated any intention on the railways' part to permanently reduce coal rates.

Attorney General Nickle, of Ontario, issued the following statement on Sept. 21: "The Government is not purchasing or selling Alberta coal. Neither has it undertaken, nor does it propose to undertake, to enter into any arrangement with any firm or person for the shipment to Ontario of their particular coal. Those who desire to obtain Alberta coal under the \$7 freight rate must make their own purchases. When this has been arranged for, the following will be the procedure to be followed to secure the \$7 freight rate: The purchasers will notify the Fuel Controller for Ontario, Toronto, stating the quantity required, and from whom it is to be purchased. Purchaser will send a bank guarantee for the payment of the freight to the Fuel Controller. The Fuel Controller will forward a list of the purchasers, quantities and names of the companies from which the coal is to be purchased to H. Stutchbury, Trade Commissioner for Alberta. If the Alberta Government is satisfied that the persons offering the coal for sale can supply same, and that it is of a quality suitable for shipment to Ontario, he will then inform the persons selling the coal that they can ship same under the \$7 freight rate. The sellers of the coal must then forward to the Fuel Controller the bills of lading made out to the Ontario Government, and consigned to whatever place the purchaser desires. The Fuel Controller will then forward the bills of lading to each purchaser, and upon receipt of a certified cheque payable to the Provincial Treasurer for the exact amount of the freight shown by such bill of lading the bank guarantee will be returned to him. It must be understood by the sellers that the Government undertakes no responsibility for the payment for the coal itself, and it must also be understood by the purchasers that the Government undertakes no responsibility whatever for shortages or quality of the coal, these being matters which must be adjusted between the purchasers and the sellers. The \$7 freight rate is available only for coal consigned to places on the Canadian National Rys. An absolute condition upon which this rate is being given is that the coal must be forwarded from the mines before midnight Oct. 31 next. The Government has endeavored to have more than 10,000 tons of Alberta coal brought in at the \$7 freight rate, but the Canadian National Rys. decline to increase the amount which is to be shipped by Oct. 31 next. Requests have already been received by the Government for more than 10,000 tons."

A Calgary press dispatch of Sept. 18 quoted Jesse Gouge, Drumheller, Alta., Vice President, Western Canada Coal Operators' Association, as stating that efforts were being made by the association to have low rates established on the Canadian National Rys. after Jan. 1, 1924, and that operators had no intention of abandoning the fight to obtain the rates they want.

Mr. Dalrymple's statement as to the rates being put back on a commercial basis, however, confirms the opinion ex-

pressed by Canadian Railway and Marine World at the time the subject of Alberta coal from Ontario was first brought to public attention, viz., that at the present stage in the development of Canadian railway transportation, Alberta domestic coal could not be transported, on a strictly commercial basis, at a rate that would allow it to compete successfully in the Ontario market. That opinion was in line with the evidence given by D. Crombie, Chief of Transportation, Canadian National Rys. after Jan. 1, House of Commons Committee enquiring into the coal situation, that it would cost \$8.91 a ton to transport Alberta domestic coal to Toronto in trainload lots.

Canadian Pacific Railway Construction, Betterments, Etc.

McAdam Jct.—A steel water tank with 100,000 gall. capacity, is being built at McAdam Jct., N.B.

Milton Signals—The C.P.R. is reported to have ordered a two "searchlight" color light signals with relays, floor pushes, switch instruments, commutators, relay boxes and cable posts for installation at the interlocking plant at Milton, Ont.

Wilkie-Cutknife Branch—A branch line of 40 miles from Cutknife to Battle River is being graded by W. A. Dutton, of Winnipeg.

The Lanigan Northerly line is now in operation to Naicam, Sask., 60 miles, is being extended to Melfort, 32 miles farther. Stewart and Cameron, Winnipeg, have the grading contract.

Wymark-Archive Line—The Board of Railway Commissioners has approved revised location plan for the Wymark-Archive line between mile 50.69, Sec. 8, Tp. 14, Range 5, and mile 52.62, Sec. 13, Tp. 14, Range 6, west of 3rd Meridian. A press report states that D. Grant has a grading outfit at work. The contract for the second 25 miles of this line from Wymark was let to W. A. Dutton, Winnipeg, in May.

Leader Southerly Branch—The Board of Railway Commissioners has approved revised location plan for this extension from Leader, Sask., on the Swift Current-Bassano line, between mile 44.6, Sec. 3, Tp. 17, and mile 49.5, Sec. 9, Tp. 16, Range 1, west of 4th Meridian.

Pashler Northeastly Branch—The Board of Railway Commissioners has approved location plan for a portion of the projected branch from Pashler, Alta., 132 miles west of Swift Current, Sask., and 15 miles east of Medicine Hat, Alta., between mile 28.77, Sec. 36, Tp. 15, Range 2, to mile 33.34, Sec. 9, Tp. 16, Range 1, west of 4th Meridian, and has authorized the crossing of a number of highways between those points. The Sec. 9, Tp. 16, Range 1, referred to is the terminal point of the revised western plans of the Leader southwesterly branch.

Victoria Terminal Building—A press report states that a contract has been let to Luncy Bros., Victoria, B.C., for the erection of the terminal building on Belleville St., at an estimated cost of \$167,000. It was reported Aug. 30 that the ticket office, and waiting room in the old wooden structure on Belleville St. had been removed to their new location on the wharf, and that work was started immediately on tearing down the structure for the new terminal building.

Birthdays of Transportation Men in October.

Many happy returns of the day to:

A. Aitken, Assistant Superintendent, Toronto Terminals, C.P.R., Toronto, born at Decewsville, Ont., Oct. 12, 1872.

E. R. Battley, Superintendent of Motive Power, Montreal District, Central Region, Canadian National Rys., Montreal, born at Stratford, Ont., Oct. 21, 1886.

E. W. Beatty, K.C., President, C.P.R., Montreal, born at Thorold, Ont., Oct. 16, 1877.

L. S. Brown, General Manager, Atlantic Region, Canadian National Rys., Moncton, N.B., born at Nelson, N.B., Oct. 19, 1864.

J. W. Corbett, Assistant Purchasing Agent, Canadian National Rys., Toronto, born at Montreal, Oct. 4, 1887.

H. H. Couzens, General Manager, Toronto Transportation Commission, and President, Canadian Electric Railway Association, born at Totnes, Devonshire, Eng., Oct. 16, 1877.

John Deed, City Agent, Freight and Passenger Department, Canadian National Rys., London, Eng., born there, Oct. 12, 1887.

A. F. Dion, Traffic Manager, Quebec Harbor Commission, Quebec, born at L'Islet, Que., Oct. 1, 1871.

H. A. Dixon, Chief Engineer, Western Region, Canadian National Rys., Winnipeg, born at Sand Hill, Ont., Oct. 7, 1878.

D. Drummond, Agent, C.P.R. and Canadian Pacific Steamships Ltd., Southampton, Eng., born at Sheddens, Renfrewshire, Scotland, Oct. 12, 1884.

Frank W. Dubrule, Vice President, Prescott and Ogdensburg Ferry Co., and Secretary, Canadian Pacific Car and Passenger Transfer Co., Prescott, Ont., born there, Oct. 22, 1887.

J. H. Edwards, Freight Claims Agent, Canada Steamship Lines, Montreal, born at Birmingham, Eng., Oct. 4, 1890.

A. C. Egan, Comptroller, Western Region, Canadian National Rys., Winnipeg, born there, Oct. 6, 1883.

C. E. Friend, Assistant General Comptroller, Canadian National Rys., Montreal, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimons, Manager, Industrial Department, Traffic Department, Atlantic and Central Regions, Canadian National Rys., Montreal, born at Detroit, Mich., Oct. 27, 1868.

G. Gordon Gale, Vice President and General Manager, Hull Electric Co., Hull, Que., born at Quebec, Que., Oct. 9, 1882.

C. N. Ham, Secretary, Express Traffic Association of Canada, Montreal, born at Winnipeg, Oct. 21, 1884.

G. Hodge, Assistant General Manager, Eastern Lines, C.P.R., Montreal, born there, Oct. 2, 1874.

J. H. Hughes, Assistant Superintendent, Ottawa Division, Quebec District, C.P.R., Ottawa, Ont., born at Charlottetown, P.E.I., Oct. 7, 1865.

H. Irwin, Consulting Right of Way Agent, C.P.R., Montreal, born at Newgrove, County Down, Ireland, Oct. 27, 1847.

W. B. Johnson, Master Mechanic, Halifax Division, Maritime District, Canadian National Rys., Truro, N.S., born there, Oct. 8, 1872.

Major W. M. Kirkpatrick, M.C., Foreign Freight Traffic Manager, C.P.R., Montreal, born at Kingston, Ont., Oct. 8, 1874.

W. B. Lanigan, General Freight Traffic Manager, C.P.R., Montreal, born at

Three Rivers, Que., Oct. 12, 1861.

O. M. Lavoie, Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, born at St. Cyril de Wendover, Que., Oct. 16, 1884.

A. E. McMaster, formerly Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., now Resident Manager, Powell River Co., Powell River, B.C., born at Perth, Ont., Oct. 22, 1885.

C. Malcolm, chief clerk, Auditor of Stores and Mechanical Accounts, Alberta District, C.P.R., Calgary, Alta., born at Tatamagouche, N.S., Oct. 18, 1881.

W. B. Mallon, Canadian Traffic Agent, Buffalo, Rochester and Pittsburgh Ry., Toronto, born at Rochester, N.Y., Oct. 9, 1894.

W. T. Marlow, Foreign Freight Agent, C.P.R., Montreal, born at Limerick, Ireland, Oct. 25, 1872.

C. R. Moore, General Superintendent of Transportation, Central Region, Canadian National Rys., Toronto, born at Hamilton, Ont., Oct. 12, 1867.

Hugh Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrewshire, Scotland, Oct. 5, 1852.

J. W. Porter, Special Engineer, Western Region, Canadian National Rys., Winnipeg, Man., born at Aberdeen, Scotland, Oct. 15, 1877.

H. G. Reid, Assistant General Superintendent of Motive Power, Western Region, Canadian National Rys., Winnipeg, born at Pembroke, Ont., Oct. 27, 1863.

O. J. Rowe, Assistant Superintendent, Drumheller, Mantario, Oyen, Rowley and Sheerness Subdivisions, Calgary Division, Alberta Division, Canadian National Rys., Hanna, Alta., born at Binghampton, N.Y., Oct. 11, 1879.

J. K. Savage, General Superintendent, Quebec District, C.P.R., Montreal, born at Forreton, Ill., Oct. 5, 1876.

The Lord Shaughnessy, K. C. V. O., Chairman, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Lake Forwarding Agent, Canadian National Rys., Cleveland, Ohio, born at Barking, Essex, Eng., Oct. 2, 1868.

Lieut.-Col. C. C. Stibbard, D. S. O., Trainmaster, Kettle Valley Ry., Penticton, B.C., born in Sussex, Eng., Oct. 19, 1885.

C. E. Stockdill, Assistant to Vice President, Western Lines, C.P.R., Winnipeg, born at London, Ont., Oct. 25, 1881.

D. A. Storey, ex-Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., now of Montreal, born at Halifax, N.S., Oct. 26, 1853.

Walter S. Thompson, Director of Publicity, Canadian National Rys., Montreal, born at Newcastle-upon-Tyne, Eng., Oct. 22, 1886.

E. N. Todd, Freight Traffic Manager, Rail Lines, C.P.R., Montreal, born at Huntingdon, Que., Oct. 17, 1879.

J. H. Valteau, Secretary - Treasurer, Thousand Islands Ry. and Oshawa Ry., Gananoque, Ont., born at Selby, Ont., Oct. 14, 1889.

J. A. Vallerand, Superintendent and General Freight and Passenger Agent, Roberval-Saguenay Ry., Chicoutimi, Que., born at Quebec, Que., Oct. 21, 1878.

Algoma Steel Corporation, Sault Ste. Marie, Ont., rolled 146,238 tons of steel rails in the year ended June 30, against 155,764 tons in the previous year.

Transportation Events of Twenty-Five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for Oct., 1898.

C.P.R. strung telegraph wire between Truro and Halifax, N. S.

A. E. Rosevear appointed Freight Claim Agent, G.T.R., Montreal.

Montreal St. Ry. sheds at Hochelaga burned. Estimated loss \$150,000.

White Pass & Yukon Ry. Co. invited subscription for \$750,000 debenture stock.

Navigation matters on Yukon River were active and several steamboats were added.

First telegraph message sent over C.P.R. new copper wire between Montreal and Vancouver.

W. H. Smith appointed General Auditor, Canada Atlantic and Ottawa, Arnprior & Parry Sound Rys.

Quebec Bridge Co. invited tenders for construction of combined railway and highway bridge across St. Lawrence River, near Quebec.

The C.P.R., on Sept. 5, restored transportation passenger rates to about ante bellum figures, but the war with the G.T.R. in local rates in Ontario was continued.

Minister of Marine gave contract to Glasgow shipbuilders for a steamship to replace the s.s. Stanley, on the winter run between Prince Edward Island and Pictou, N.S.

Intercolonial Ry. appointments made as follows: J. E. Price, General Superintendent at Moncton, at \$2,500 a year; L. S. Brown, Chief Dispatcher at New Glasgow; D. A. Storey, District Freight Agent at Halifax; J. B. Lambkin, District Passenger Agent at Halifax; H. A. Price, District Passenger Agent at Montreal.

Two out of three arbitrators at Chicago decided C.P.R. not entitled to differential under the rates made by U.S. lines on freight traffic interchanged with San Francisco by other points in the United States and Canada. Vice President Shaughnessy objected to the decision and said the question must be resubmitted.

Sir Wm. C. Van Horne, President, C. P.R., wrote Sir C. Rivers Wilson, President, G.T.R., expressing willingness, as between the C.P.R. and the G.T.R., to restore passenger rates to the ante bellum basis, if transcontinental passenger rates were restored similarly, and the question of differentials to the C.P.R. be submitted to arbitration, the C.P.R., pending such arbitration, to be allowed half the differential it enjoyed formerly. He refused to submit to arbitration whether the C.P.R. would use the G.T.R. North Bay line for its Ontario traffic, instead of its own longer line via Smiths Falls, or instead of building a shorter line.

Timiskaming & Northern Ontario Ry. Tickets Stolen.—A press report says that it was discovered on the morning of Sept. 9, that the Cobalt, Ont., station had been broken into, and about 4,800 tickets stolen. Two boys, each under 12 years of age, were arrested on the north-bound Continental Limited, having in their possession about 1,000 tickets, and were taken back to Cobalt. It appears that the robbery was committed by four boys, two of whom were still at large on Sept. 15.

Traffic Orders by Board of Railway Commissioners.

Express Rates on Freight Motor Truck Bodies.

33,901. July 16.—Re the Express Traffic Association of Canada application for approval of Supplement 6 to Express Classification for Canada 5. Upon the report and recommendation of its Assistant Chief Traffic Officer, the Board orders that the said Supplement, making a reduction on bodies of freight motor trucks, be approved.

Passenger Accommodation Between Transcona and Winnipeg.

33,953. July 30.—Re complaint of Ratepayers' Association of Transcona, Man., against passenger accommodation, train service and fare charged by Canadian National Rys. between Transcona and Winnipeg. Upon hearing the application at Winnipeg, July 16, in the presence of counsel for the complainants and the Canadian National Rys., the evidence offered and what was alleged, and upon the report and recommendation of an inspector of the Board, it is ordered that the application be dismissed.

Operation Over C.P.R. Spur at Fort William.

34,053. July 26.—Re application of Gillespie Terminal Grain Elevator Co., Fort William, Ont., under Sec. 193 of the Railway Act, 1919, for an order authorizing the Canadian National Rys. to operate over the C.P.R.'s existing spur to the applicant's elevator on Island 2 at Fort William. Upon hearing the application at Ottawa on June 20, in the presence of counsel for the applicant, the Canadian National Ry. Co. and the C.P.R. Co., the evidence offered and what was alleged, the Board orders that the application be dismissed.

Inspectors of Railway Appliances Wanted.

The Civil Service Commission, on Sept. 4, invited applications to be sent in by Sept. 27, for the positions of inspectors of railway safety appliances, Board of Railway Commissioners, at Ottawa and Winnipeg, both being new positions, at an initial salary of \$2,280 a year, which will be increased upon recommendations for efficient service at the rate of \$120 a year, until a maximum of \$3,000 has been reached. This salary will be supplemented by whatever bonus is provided by law. Duties—Under supervision, to inspect locomotives, cars, and other railway equipment for compliance with legal requirements for safety of operation; to inspect fire prevention appliances; to inspect protective conditions at highway and other public crossings; to investigate and report on accidents and complaints of violation of operating rules; and to perform other related work as assigned. Qualifications required—Education equivalent to high school graduation; at least three years of experience in the mechanical or motive power department of a railway; thorough knowledge of operating safety appliances; good judgment, tact and ability to meet the public. While a definite age limit has not been fixed for this competition age may be a determining factor when making a selection.

There are two vacancies to be filled, one at Ottawa and one at Winnipeg. For the position at Ottawa, the appointee must have a thorough knowledge of mo-

tive power, maintenance and operation. For the position at Winnipeg, the appointee must have a thorough knowledge of car specifications, construction and operations. Nature of examination—Subjects and weights as follows: Education and experience, weight 5; oral examination, weight 5. An eligible list may be established which will be valid for a period of one year.

Freight Car Conditions and Supply.

That Canadian railways have their freight equipment in good condition and ready for the heavy grain movement of the autumn is evidenced by the fact that at Sept. 1 only 5.6% of the total number of freight cars on lines were in bad order. A report issued by the Railway Association of Canada stated that at Sept. 1 the total number of cars on lines was 204,840, of which 11,475 were in bad order. On Aug. 1, 6.9% of all freight cars on Canadian lines were in bad order, as compared with 7.6% on July 1 and 7.7% on June 1, it thus being evident that the situation improved greatly as the autumn approached. A shortage of 553 cars was reported on Sept. 1, compared with 543 on Aug. 1, 750 on July 1 and 350 on June 1.

The American Railway Association's Car Service Division reports that in the U.S. on Aug. 15 there were 83,253 box cars out of 1,042,812 in bad order or 8%; 5,799 refrigerator cars out of 52,870, or 11%; 82,371 gondolas out of 966,729 or 8.5%; 7,540 stock cars out of 81,327, or 9.3% and 7,198 out of 92,893 flat cars, or 7.7%. Out of 2,280,440 freight cars of all classes, 188,635 or 8.2% were in bad order, compared with 8.3% on Aug. 1.

According to the transportation efficiency programme adopted by the U.S. railways, as represented by the American Railway Association and the Association of Railway Executives, on April 15, the number of bad order cars is to be reduced to 5% of the total by Oct. 1. From the figures given above it is evident that between Aug. 15 and Oct. 1, U.S. roads will have to repair 3.2% of all cars on lines, in addition to doing current maintenance, if the programme is to be carried out.

British Railway Visitors.—A party of Great Western Ry. of England officials, including J. H. Vickery, Chief Docks Manager; E. Lowther, Chief Goods Manager; G. Buckeley, Assistant Chief Freight Manager; J. Auld, Docks, Assistant to Chief Mechanical Engineer, and J. H. Mathews, Chief of the company's police, arrived in Canada, Sept. 10, on the s.s. City of Paris, which had been chartered by the C.P.R., as a relief steamship, following the accident to the s.s. Empress of Scotland. The object was to inspect the various Canadian ports on the Atlantic and the Great Lakes, as well as U.S. ones, with special attention to the mechanical and other appliances for handling general cargo, and the design of general railway rolling stock, and general railway police organization. During their visit, they are the guests of various railways in Canada and the U.S. Their itinerary, after leaving Quebec, included Montreal, Ottawa, Toronto, Niagara Falls, Sarnia, Port Arthur, Fort William, Duluth, Chicago, Cleveland, Philadelphia, Baltimore, Washington, Norfolk, New York, Albany, Schenectady, Boston and a second visit to Montreal. They will sail from Quebec by the s.s. Empress of France, Oct. 13.

Board of Grain Commissioners Refuses Increase in Elevator Charges.

The Board of Grain Commissioners sitting at Winnipeg on Aug. 22, received an application from Fort William and Port Arthur terminal elevator operators for an increase in the rate for handling mixed grain of from 2c per 100 lb. to 2½c, the change to be effective with the coming into effect of the new tariff, on Sept. 1. The Board also received an application on Aug. 30 from country elevator operators, for an amendment to the regulations to permit them to charge ½c a bushel extra for cleaning grain. The regulations provide that 1¼c a bushel may be charged by those elevators for storage and that grain specially cleaned will be subject to a charge of ½c a bushel for each cleaning. The Grain Act, however, provides a maximum charge of 1¼c for storing, whether the elevator has a cleaner or not, and the country elevator operators asked that the word "specially" be removed from the regulations so that they could charge for cleaning.

We are officially advised that the Board refused the terminal elevator operators' request for a higher charge for handling mixed grain. A Winnipeg press report states that the country elevator operators' request for a cleaning charge was also refused, but adds that the Board suggested that the elevator companies try to secure an amendment to the Canada Grain Act to accomplish their object. Examination of the regulations covering elevator operations between Sept. 1, 1923, and Sept. 1, 1924, shows only one change from those in force during the preceding year, that relating to the handling of screenings at terminal elevators.

Tie Creosoting Plants, Contracts, Etc.

Calders, Canada, Limited, has been incorporated under the Dominion Joint Stock Companies Act, with office at Ottawa, and an authorized capital of \$1,000,000, to manufacture creosote bricks, railway ties, telegraph poles, etc. The provisional directors named are, as usual, nominal, the principal persons interested being John J. Calder and Sir James Calder, of London, Eng., and Major General Alex. McDougall, C.B., who has returned to Ottawa after having been in Europe since early in the late war. He is a civil engineer, and was associated formerly with M. J. O'Brien, and his brother, Samuel McDougall, in railway contracting on the National Transcontinental Ry. For some little time past he has been negotiating with the Canadian National Rys. and the Timiskaming and Northern Ontario Ry., for contracts for creosoting ties at plants which it is proposed to erect at Quebec, Que., and Cochrane, Ont. In reference to the matter published in Canadian Railway and Marine World for September, on pg. 425, we were advised, Sept. 13, that no contracts had been given by either the Canadian National Rys. or the Timiskaming & Northern Ontario Ry. to Calders, Canada, Limited, but that negotiations were being continued. The Canada Creosoting Co. is negotiating with the Canadian National Rys. for contracts for tie treating at New Glasgow, N.S., Newcastle, N.B., and Edmonton, Alta.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

34,032. Aug. 14.—This order was summarized in Canadian Railway and Marine World for September as "Approving plan showing proposed lay-out of Canadian National Rys. station at Napanee, Ont." It should have read "Approving Canadian National Rys. plan, dated April 21, 1923, showing proposed layout of automatic signals at Napanee, replacing proposed interlocking system shown on plan dated Oct. 6, 1921, and approved by order 32,315, March 31, 1922.

34,041. Aug. 10.—Approving revised location of C.P.R. Cutknife-Whitford Branch, from mile 5.5 to 16.38, Sask.

34,042. Aug. 13.—Approving plan of Canadian National Rys. spur for Ideal Coal Co., Wayne, Alta.

34,043. Aug. 9.—Authorizing Hydro Electric Power Commission of Ontario to erect high tension transmission line across Canadian National Telegraphs wires on Centre St., Elizabethtown Tp., Ont.

34,044. Aug. 10.—Authorizing Canadian National Rys. to open for traffic its second track from connection with main line at Burlington, Ont., to north end of swing bridge, Burlington Canal, 2.75 miles.

34,045. Aug. 10.—Amending order 25,440, Oct. 17, 1916, re protection at Riverdale Park crossing, Toronto, by C.P.R., Canadian Northern Ry. and G.T.R., by revising the apportionment of cost.

34,046 to 34,048. Aug. 16.—Approving Bell Telephone Co. agreements with Tipping Telephone System, Theodore Telephone Co., and Maberly Telephone Co.

34,048. Aug. 8.—Ordering Canadian National Rys. to rebuild bridge over Dumfries, or St. George, Road, in South Dumfries Tp., Ont.

34,050. Aug. 9.—Approving clearances at C.P.R. siding serving Goderich Elevator & Transit Co. chutes A and B, Goderich, Ont.

34,051. Aug. 9.—Ordering Canadian National Rys. to lay drainage system at subway carrying its tracks over Kingston Road, Hamilton Tp., Ont.

34,052. Aug. 10.—Approving clearances at Canadian National Rys. spur for Ford Motor Co. of Canada, at Danforth, Ont.

34,053. July 26.—Dismissing application of Gillespie Terminal Grain Elevator Co., Fort William, Ont., for order authorizing Canadian National Rys. to operate over C.P.R. spur to applicant's elevator on Island 2, Fort William.

34,054. Aug. 9.—Approving plan showing location of Canadian National Rys. station at Crabtree, Que.

34,055. Aug. 9.—Approving clearances at Canadian National Rys. siding of Goderich Elevator & Transit Co. loading tower, Goderich, Ont.

34,056. Aug. 20.—Approving plan showing location of Canadian National Rys. station at Barrows Jct., Man.

34,057. Aug. 20.—Authorizing Interprovincial & James Bay Ry. (C.P.R.) to build ballast pit spur at grade across road between Lots 4a and 5a, Range 6 south, Fabre Tp., Que.

34,058. Aug. 17.—Authorizing Brantford Municipal Ry. to lay industrial tracks on Murray St., Brantford, Ont.

34,059. Aug. 20.—Approving location of C.P.R. standard A-3 station at Whittemouth, Man.

34,060. Aug. 20.—Authorizing C.P.R. to build spur for Dominion Silk Dyeing and Finishing Co., in Grantham Tp., Que.

34,061. Aug. 17.—Dismissing application of J. A. Coolidge and others for order directing Canadian National Rys. to provide siding between mile-post 339 and 340, near Birch Hills and Fenton, Sask.

34,062. Aug. 20.—Approving location of Canadian National Rys. 4th class station at Vita, Man.

34,063. Aug. 20.—Authorizing Canadian National Rys. to build spur for Cameron Lumber Co. at mile 63.3 Cowichan Subdivision, B.C.

34,064. Aug. 20.—Authorizing C.P.R. to build spur for Albert Kerr Co., Toronto.

34,065. Aug. 18.—Authorizing C.P.R. to divert road allowance in n.e. ¼ sec. 31, Tp. 18, Range 29, West 3rd Meridian, Sask.

34,066. Aug. 21.—Approving Canadian National Rys. plan showing change in position of south home signal on Timiskaming & Northern Ontario Ry.

34,067. Aug. 23.—Approving location of Canadian National Rys. 4th class station at Ardill, Sask.

34,068. Aug. 23.—Authorizing Toronto Suburban Ry. to divert its line, as already built from the Humber River, York Tp., easterly to Keele St. and St. Clair Ave., Toronto, and to build across Scarlet Road, Jane St., Castle Crescent Road and Symes Road at grade, Gunns Road overhead, and Weston Road by undercrossing.

34,069. Aug. 21.—Authorizing C.P.R. to build

spur and extension to siding at Christie St. Hospital, Toronto.

34,070. Aug. 21.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to build spur for Canadian Coal Co., in Sec. 24, Tp. 55, Range 25, West 4th Meridian, Alta.

34,071. Aug. 22.—Authorizing Canadian National Rys. to connect siding on west side of Dargenson St., Montreal, with Montreal Tramways Co.'s siding crossing Dargenson St., Montreal.

34,072 to 34,074. Aug. 22.—Approving Bell Telephone Co.'s agreements with Yarker Telephone Co.; Waterloo Municipal Telephone System, and Beeton Telephone Co., Limited.

34,075. Aug. 22.—Amending order 34,036, Aug. 13, authorizing C.P.R. to build spur in Alberta for Northwest Lumber Co., by substituting Edmonton, Dunvegan & British Columbia Ry. for C.P.R..

34,076. Aug. 23.—Declaring that for the present, Michigan Central Rd. crossing 2½ miles east of Welland, Ont., is protected to Board's satisfaction.

34,077 to 34,079. Aug. 20.—Declaring that for the present Canadian National Rys. crossings near Beachville station, near Cornwall station, and at Wanstead, Ont., are protected to Board's satisfaction.

34,080. Aug. 21.—Ordering Dominion Atlantic Ry. to extend platform at Deep Brook station, N.S., by 150 ft.

34,081. Aug. 23.—Authorizing Canadian National Rys. to build storage siding on and across King St., Peterborough, Ont.

34,082. Aug. 23.—Authorizing C.P.R. to build spur for McLennan, McFeely & Co., Vancouver, B.C.

34,083. Aug. 23.—Authorizing Canadian National Rys. to install automatic bell and wigwag signals at crossing of Frederica and Edward Sts., Fort William, Ont., in lieu of gates and watchmen.

34,084. Aug. 24.—Authorizing Canadian National Rys. and Essex Terminal Ry. to connect with Ford Motor Co.'s tracks at Ford, Ont.

34,085. Aug. 24.—Approving supplements 1 and 2 to connecting agreement between Bell Telephone Co. and Magnetawan Municipal Telephone System.

34,086. Aug. 24.—Declaring that for the present, Canadian National Rys. crossing near Beeton, Ont., is protected to Board's satisfaction.

34,087. Aug. 23.—Declaring that for the present, crossing of Missisquoi Road, Irberville, Que., is protected to Board's satisfaction.

34,088. Aug. 23.—Relieving for the present, Canadian National Rys. from providing further protection at first crossing west of Vineland station, Ont.

34,089. Aug. 23.—Authorizing City of Winnipeg to build highway across C.P.R. at Erin St.

34,090. Aug. 23.—Authorizing Canadian National Rys. to install double automatic bells and wigwag signals in lieu of watchman at crossing of Gore St., Fort William, Ont.

34,091. Aug. 23.—Relieving Canadian National Rys. from providing fencing between certain points on its Winnipeg Terminals Division.

34,092. Aug. 23.—Approving location of Nipissing Central Ry. through Lebel and Gauthier Tps. mile 9.0 to 19.57 from Swastika, Ont.

34,093. Aug. 23.—Authorizing C.P.R. to build spur for Canyon City Lumber Co., Creston, B.C.

34,094. Declaring that for the present, C.P.R. crossing near mile 15, St. Andrews Parish, Man., is protected to Board's satisfaction.

34,095. Aug. 23.—Approving supplement to connecting agreement between Bell Telephone Co. and Ernestown Rural Telephone Co.

34,096. Aug. 24.—Ordering C.P.R. within 60 days, to install wigwag signal in addition to electric bell at crossing of Wilson St., Perth, Ont.

34,097, 34,098. Aug. 24.—Approving Bell Telephone Co. agreements with Tuckersmith Tp., Ont., and Malahide & Bayham Telephone Association.

34,099. Aug. 18.—Dismissing application of Assiniboia rural municipality, for order directing C.P.R. to provide highway crossing over its tracks at Saskatchewan and Buchanan Sts.

34,100. Aug. 25.—Ordering Michigan Central Rd. to install improved type of automatic bell and wigwag signal at crossing, near Perry station, Ont.

34,101. Aug. 25.—Declaring that for the present, Canadian National Rys. crossing south of Elmvale station, Ont., is protected to Board's satisfaction.

34,102. Aug. 27.—Authorizing National Parks Branch, Interior Department, to make highway across Canadian National Rys. at Snaring Jct., Alta.

34,103. Aug. 25.—Approving connecting agreement between Bell Telephone Co. and Monck Municipal Telephone System.

34,104. Aug. 25.—Authorizing C.P.R. to build spur for William Davies Co., Toronto.

34,105, 34,106. Aug. 25.—Ordering Michigan Central Rd. to install wigwag signals on each side of its tracks at Elgin St., and on south side of its tracks at Moore St., St. Thomas, Ont.

34,107. Aug. 27.—Authorizing Canadian National Rys. to install automatic half-interlocking plant at crossing of Fort William Municipal Ry. on Frederica St., Fort William, Ont.

34,108. Aug. 24.—Ordering Esquimalt & Nanaimo Ry. to install semaphore at crossing on Lockner Road, Cassidy, Vancouver Island, B.C.

34,109. Aug. 22.—Approving revised location of portion of C.P.R. Leader Southeasterly Branch, from mile 44.6, Sec. 3, Tp. 17, to mile 49.5, Sec. 9, Tp. 16, Range 1, West 4th Meridian.

34,110. Aug. 28.—Authorizing C.P.R. to build passing track across road allowance at mile 75.4, Minnedosa Subdivision, Man.

34,111. Aug. 28.—Approving location of portion of C.P.R. Pashley-Northeasterly Branch, from mile 28.77, Sec. 36, Tp. 15, Range 2, to mile 33.34, Sec. 9, Tp. 16, Range 1, West 4th Meridian, and authorizing crossing of a number of highways.

34,112. Aug. 28.—Authorizing Canadian National Rys. to close and divert road allowance between Sec. 18, Tp. 20, Range 14 and Sec. 13, Tp. 20, Range 15, West 1st Meridian, Man.

34,113, 34,114. Aug. 27.—Approving supplements to connecting agreements between Bell Telephone Co., McKellar Municipal Telephone System, and Maidstone Municipal Telephone System.

34,115. Aug. 28.—Approving revised location of C.P.R. Archive-Wymark Branch, from mile 50.69, Sec. 8, Tp. 14, Range 5, to mile 52.62, Sec. 13, Tp. 14, Range 6, West 3rd Meridian.

34,116. Aug. 23.—Approving clearances at Canadian National Rys. spur for Ford Motor Co., Ford, Ont.

34,117. Aug. 27.—Authorizing City of Saskatoon, Sask., to close portion of Spadina Crescent, between First Ave. and Avenue A, and provide access from Avenue A, through subway and along First Ave. to footbridge by cinder path.

34,118. Aug. 30.—Declaring that for the present, Canadian National Rys. crossing, near Greenfield, Ont., is protected to Board's satisfaction.

34,119. Aug. 30.—Authorizing Hydro Electric Power Commission of Ontario to build permanent power development canal and construction railway under Canadian National Rys., in Lots 57, 59 and 60, Stamford Tp., Ont.

34,120. Aug. 30.—Authorizing C.P.R. to build spur for City of Swift Current, Sask.

34,121 to 34,123. Aug. 29.—Approving supplements to connecting agreements between Bell Telephone Co., Balmoral Telephone System, Glengarry Telephone Co., and Dunsford Telephone, Light & Power Co-operative Association.

34,124. Sept. 4.—Authorizing C.P.R. to build spur for Nelson Co-operative Fruit Growers' Association, Nelson, B.C.

34,125. Sept. 4.—Approving clearances at C.P.R. proposed wheel crane at its passenger car yards at Winnipeg.

34,126. Sept. 6.—Extending to Oct. 1, time within which Canadian National Rys. may complete station at Fort Fraser, B.C.

34,127. Sept. 4.—Authorizing C.P.R. to build two spurs for Howe Lumber Co., Three Rivers, Que.

34,128. Sept. 4.—Approving C.P.R. plan showing bell installed at crossing of Mechanic Street, Bath, N.B.

34,129. Sept. 4.—Authorizing C.P.R. to divert road allowance in n.e. ¼ Sec. 34, Tp. 30, Range 10, West 2nd Meridian, Sask.

34,130. Sept. 6.—Ordering Canadian National Rys. to trim and cut trees and lower ground elevation to improve view at crossing of Water St., Hope, B.C.

34,131 to 34,135. Sept. 5.—Approving Bell Telephone Co.'s agreements and contracts with Humphrey Tp. Telephone Commissioners, South Crosby Rural Telephone Co., Oakwood Telephone Co., Muskoka, Victoria & Haliburton Telephone Co., and Elgin-Chaffey's Locks Telephone Co.

34,136. Sept. 4.—Authorizing British Columbia Public Works Department to make highway across Canadian National Rys. near Shere.

34,137. Sept. 4.—Authorizing Michigan Central Rd. to remove detector bars on derails 15 and 19, at interlocking plant, Fargo, Ont.

34,138. Sept. 5.—Authorizing Nipissing Central Ry. to connect with Timiskaming & Northern Ontario Ry., south of Swastika station, Ont.

34,139. Sept. 7.—Authorizing Canadian National Rys. to remove station agent at St. Norbert, Man.

34,140. Sept. 6.—Authorizing Saskatchewan Highways Department to make crossing over Canadian National Rys. at Tadmore.

34,141. Sept. 6.—Authorizing Vancouver, Victoria & Eastern Ry. (G.N.R.) to change location of terminal facilities at Guichen, B.C.

34,142. Sept. 6.—Approving location of Canadian National Rys. no. 4 standard station at Tioneza, Ont.

34,143. Sept. 6.—Authorizing Canadian National Rys. to build spur for Candiac ballast pit in Tp. 14, Range 10, West 2nd Meridian, Sask.

34,144. Sept. 6.—Authorizing City of Port Arthur, Ont., to lay temporary roadway over C.P.R. to serve grain elevators at northerly end of city.

34,145. Sept. 7.—Approving service station agreement between Bell Telephone Co. and St. Norbert Telephone Co.

34,146. Sept. 6.—Authorizing Canadian National Rys. to build spur to ballast pit at Bield, Man., across certain road allowances.

Freight and Passenger Traffic Notes.

The C.P.R. is reported to have opened its Transcona, Man., freight yards on Sept. 16, for the grain shipping season.

The Canadian National Rys. resumed the cafe parlor car service on the evening express train 17, from Moncton to St. John, N.B., on Sept. 10.

The Canadian Pacific Ry., on Sept. 30, again put on a daily, except Sunday, train from Calgary via Aldersyde to Lethbridge, Alta.; and a service three times a week between Calgary and MacLeod, Alta.

The C.P.R. train 61, which has been leaving Winnipeg at 6 p.m. for Brandon, Man., during the summer, will leave an hour later, and its run will be extended to Moose Jaw, Sask., on the winter schedule.

The Canadian National Rys. divisional freight offices at Port Arthur, Ont., have, a press report says, been moved to offices in the Prince Arthur Hotel building, vacated by the Port Arthur Vessel Insurance Agency.

The Transcona, Man., Ratepayers' Association's complaint against the Canadian National Rys. passenger accommodation, train service, and fares between Transcona and Winnipeg, has been dismissed by the Board of Railway Commissioners.

The Board of Railway Commissioners passed an order, Sept. 15, authorizing the Canadian National Rys. to give free transportation, from Ottawa to Vancouver, to Lady Fuller, her son and daughter, the New South Wales Prime Minister's wife and children.

The C.P.R. is reported to have handled between Sept. 1 and Sept. 15, 4,991 cars of grain into Winnipeg, against 7,551 for the same period in 1922; and the Canadian National Rys. to have handled within the same period 3,897 cars, against 7,777 for the same period in 1922.

The C.P.R. is reported, during the first five days of the grain shipping season, commencing Sept. 1, to have loaded 1,201 cars, against 2,472 for the same period in 1922. The decrease in this season's figures is owing to harvesting having been about two weeks later than in 1922.

The Canadian National Rys. are reported to have moved 2,072 cars of grain, containing 1,426,425 bush., between Sept. 1 and Sept. 10, a decrease of 1,927,800 bush., compared with the movement between the same dates in 1922, which is accounted for by the late maturing of the crop.

The Canadian Passenger Association, Western Lines, is reported to have decided, at a meeting in Winnipeg on Sept. 4, to again place in effect winter round trip excursion rates to Vancouver, Victoria, B.C., etc., and excursion fares to certain destinations in the U.S. The fares will, it is said, correspond to those in effect in 1922-23.

The Canadian National Rys. management is reported to have advised the St. John, N.B., Board of Trade, Sept. 20, that traffic did not warrant the continuance of the daily, except Sunday, night train between St. John and Halifax, N.S., and that the best that could be done would be a train three times a week each way, the same as last winter.

A Montreal press dispatch says that, during twelve months, manifest fast freight trains operated over the Canadian National-Grand Trunk-Central Vermont route between Chicago and Boston through Canada, were operated every day

in one or more sections, and on 337 days during the 12 months they were on time or less than 5 minutes late.

Canadian National Railways Passenger Department has issued a pictorial poster outlining the route of the Continental Limited across Canada. Eight pictures, in attractive coloring, depict the various sections from the maritime provinces through the lower St. Lawrence and the highlands of Ontario on the east, to Jasper National Park, Mount Robson and the north Pacific coast.

Through standard sleeping cars are being continued in operation between Chicago and Vancouver over the Minneapolis, St. Paul & Sault Ste. Marie Ry. and the C.P.R., following the withdrawal for the season, on Sept. 15, of the Mountaineer, the through train between Chicago and the Pacific coast, which was in operation during the summer. The through sleeper is being handled in connection with M. St. P. & S. S. M. Ry train 3 from Chicago.

St. Thomas, Ont., advertises that it is one of the most active transportation centers in the Dominion, that 6 railways running through it furnish unsurpassed shipping facilities; that these lines include the Canadian National, Canadian Pacific, Michigan Central, Wabash, Pere Marquette, and London & Port Stanley (electric); that a car ferry runs from Port Stanley to Conneaut Harbor, Ohio; and that 45 passenger trains and about 87 freight trains stop at St. Thomas daily.

The Board of Railway Commissioners was reported, Sept. 15, to have assented to an agreement made between the Canadian Freight Association and the Milton Pressed Brick Co., respecting the latter's application to the Board for a minimum carload for its product. Under an order made previously, the carload was fixed at 40,000 lb., and the Canadian Freight Association desired to have a rehearing as it wanted a 50,000 lb. minimum. The agreement is said to provide for the varying of the order by inserting 50,000 lb. in place of 40,000 lb.

The number of passengers taken into Winnipeg by harvester excursion trains this year is reported to have been 45,842, of which the C.P.R. carried 25,000 and the Canadian National, 20,842. The Canadian National Rys. carried 7,155 men from the British Isles, and the C.P.R. 4,728. Up to Aug. 24 at Winnipeg 23,300 men took tickets by C.P.R., and 13,000 by the Canadian National Rys., to points west. In addition to the men from eastern points, there were taken into Alberta and Saskatchewan, 2,700 from British Columbia by the C.P.R.

The Timiskaming & Northern Ontario Ry's cafe parlor car service, which we are officially advised was started on Aug. 27, northbound, and on Aug. 28, southbound, is being operated daily, except Sunday, on trains 46 and 47 between North Bay and Timmins. The railway has 3 cafe parlor cars, Seseinkina, Wasaksima and Tetapaga, which have been out of service since 1917. The two first named were thoroughly overhauled in the railway's shops at North Bay, before being put into service. The Tetapaga is being overhauled, and will be held as a guard car for service as required. The service is being operated under A. J. Parr, General Freight and Passenger Agent, R. Wicks being acting Supervisor.

Dominion Government Asks Board of Railway Commissioners to Enquire into Export Grain Rates to Vancouver.

The following was approved by the Governor-General on Sept. 12 and passed as order in council 1848: The committee of the Privy Council having had under consideration a certain petition to the Governor in council by the Attorney General of British Columbia acting on behalf of that province and by the Attorney General of Alberta acting on behalf of that province by way of appeal from a general order of the Board of Railway Commissioners dated June 30, 1922, made as the result of a general investigation and enquiry as to railway rates in Canada, directed by Order 2434 of the Governor in council, dated Oct. 6, 1920, upon hearing counsel for the petitioners and for the railway companies interested; and it appearing that the question as to the rates on grain from points in Alberta, Saskatchewan and Manitoba to Vancouver and other British Columbia coast points for export was not specifically dealt with in the Board's said judgment; and it appearing further that on the hearing of the said appeal the petitioners asked for further reductions in the said rates on grain; the committee of the Privy Council considers that inasmuch as the movement of grain is of the utmost and pressing importance, an enquiry as to the said rates on grain should be made by the Board. The committee, therefore, recommends that the subject of the export grain rates from points in the said provinces to Vancouver and other British Columbia coast points be referred to the Board, for immediate consideration and such effective action as it may deem necessary.

G.T.R. Officials' Gratuities Enquiry.—As stated in Canadian Railway and Marine World for June, F. T. Congdon, K.C., who was appointed by the Dominion Government on April 20, as a commissioner to enquire into the bonuses or gratuities given certain G.T.R. officials, full particulars of which were published in Canadian Railway and Marine World for May, had resigned, the reason given being ill health, and F. H. Honeywell, barrister, Ottawa, had been appointed to make the inquiry instead. Mr. Honeywell advised us on Sept. 17 that he had held several sittings, and that the indications were that the enquiry would be pretty well completed by the end of September, unless further or unexpected developments arose.

New Zealand Tunnel.—A recent Wellington, N.Z., press dispatch announced the opening of the Otira tunnel, 5 1-3 miles long, through the Southern Alps, which connects both coastal railways, and has replaced a picturesque but dangerous coach route through Arthur's Pass. It has a gradient of 1 ft. in 33, is electrically operated, and is said to be the largest tunnel in the British Empire and the seventh longest in the world.

Railway Lands Patented.—Letters patent were issued during August, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Canadian Northern Western Ry.....	11.00
Canadian Pacific Ry., grants.....	.74
Canadian Pacific Ry., roadbed and station grounds.....	22.38
Total.....	34.12

Regulation of Grain Shipments to Vancouver.

A Vancouver press dispatch of Aug. 30 said: "Grain exporters in this port are making preparations to oppose the recently announced embargo placed by railways on all wheat coming to Vancouver, domestic or export, after Sept. 1, unless permits for cars have been obtained and space on ships arranged. Exporters here claim that as there is space for 1,250,000 bush., it is too early to place an embargo on grain moving this way. R. E. Beattie, of the Vancouver Harbor Commission, says that he sees in the new regulation an effort on the part of Winnipeg Grain Exchange to discredit this port in the eyes of the shippers, by having the report circulated that there is an embargo on wheat moving this way. Fort William frequently has congestion, it is pointed out by the Commissioner, but no embargo is placed that way. The Vancouver Harbor Commissioners would be satisfied if the railways would fill up the local elevator before placing an embargo."

We are officially advised that any opposition which may have arisen to the Canadian Pacific and Canadian National Rys. action in undertaking to regulate grain shipments to Vancouver so as to prevent congestion, was based on a misapprehension, and it is entirely probable that by the time of writing (Sept. 15) the railways' motives are known, and the value of their regulation of the west-bound grain traffic, to shipper, port and exporter alike, recognized. All that the railways have done is to renew, for the handling of this year's crop, the regulations placed in effect last year, and no embargo, in the real sense of the term, has been declared against Vancouver. Last year, owing to the comparatively small amount of elevator space at Vancouver (approximately enough for 1,000 carloads of bulk grain) the railways found it necessary, in order to prevent accumulation of cars and congestion in the yards there, to restrict the movement of export grain to that port to that of shippers, who had obtained permits by declaring that their grain was to fill bona fide contracts and that ships' space at Vancouver was available. The railways have adopted the same procedure this year. There is no difference between the application of this permit system to grain exported via Vancouver and to that exported through Atlantic and St. Lawrence ports.

That the regulations governing the movement of grain to Vancouver meet with approval, is evidenced by the following resolution, adopted at a meeting of the Vancouver Merchants' Exchange, grain section, July 31: "That it is the sense of this meeting that the movement of grain through the port of Vancouver, with the present available facilities, should be regulated and controlled at the outset by the railways concerned, and that the railways' policy with respect to such regulation for the current season should be formulated and made known immediately. That a copy of the resolution be forwarded to the C.P.R., the C.N.R., and the Vancouver Harbor Commission with the recommendation that a plan of operation and permit system similar to that in vogue last year be adopted."

So far as known, there have been no complaints to the railways by grain exporters concerning the permit system

adopted. Until storage space at Vancouver is substantially increased the acceptance of grain consigned to that port other than under the permit system would speedily result in a condition of affairs which would be injurious to Vancouver as a grain handling port, and the system will, undoubtedly continue during the 1923-24 grain season. For obvious reasons domestic grain shipped to Vancouver is being handled by the railways only under the same regulations as apply to export grain. Under the arrangement in effect, shippers of grain to Vancouver secure from railway officials at Vancouver a permit covering grain which they desire to forward to that point. The permit number is furnished by the shipper to the agent at the shipping point, and endorsed on the shipping bill covering the shipment. In this way, the amount of grain forwarded from interior points is efficiently regulated to conform to the storage and shipping available at Vancouver.

Freight Car Location Statistics.

The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on Sept. 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, as follows: Number of cars owned, 210,861; home cars on Canadian foreign lines, 10,556; home cars on U.S. lines, 33,041; home cars on home roads, 167,264; Canadian owned foreign cars on home lines, 7,787; U.S. owned foreign cars on home lines, 29,789; total cars on lines, 204,840; per cent. on lines to total owned, 97.1; deficiency on lines to total owned, 6,021; home cars in bad order, 10,997; foreign cars in bad order, 478; total cars in bad order 11,475; per cent. in bad order, 5.6; privately owned U.S. cars on lines, 2,360; privately owned Canadian cars on lines, 1,590.

Collision on Timiskaming & Northern Ontario Ry.

We are officially advised that a serious accident occurred on the T.&N.O.Ry. on Aug. 28, at 10.20 a.m., at mileage 157.5 north of North Bay, when passenger car extra 146 south, consisting of 20 empty cars and a van, collided with no. 97, a northbound way freight; that brakeman Foulkes of train 97, and brakeman Kirkwood of extra 146 south, who were riding on the locomotives of their respective trains, were killed, and that locomotive man Woolings of extra 146 south succumbed to his injuries on the same day; that damage to equipment consisted of 3 passenger cars destroyed and 2 badly damaged, both locomotives badly damaged and 9 freight cars damaged; and that the accident was caused by operator Joseph Gilliece, of Englehart, failing to deliver 31 order no. 13 to the conductor of no. 97.

An Englehart press dispatch of Sept. 4 stated that a coroner's jury had found that the accident was due to Gilliece's negligence, as mentioned above, but had added a rider saying that if operators were properly checked from the head office, such errors as that made by Gil-

lice would be detected in time to prevent accidents.

A North Bay press dispatch of Sept. 18 stated that on a warrant issued on instructions from the Ontario Attorney General, provincial officers had arrested J. H. Dwyer, former T. & N. O. Ry. dispatcher, at his home there, that he was blamed jointly with Joseph Gilliece, former operator at Englehart, for the accident and that he was released immediately on \$1,000 bail.

From our official advice as to the accident's cause, as given above, it would appear that Gilliece was solely to blame, through neglecting to record the 31 order on the clearance and to deliver it to no. 97. The jury's suggestion that if he had been checked properly the accident would not have happened, and Dwyer's arrest, however, make it appear that the latter is also considered negligent.

Telegraph and Cable Matters.

Wm. Reading, a C.P.R. telegraph operator, who died in Toronto, April 4, left an estate valued at \$32,682, to his widow and two daughters.

Canadian National Telegraphs have opened offices at Nakina Camp, Ont., and Ridpath, Sask., and have closed offices at Sandy Beach, Que., and Rainy Lake, Ont.

Geo. C. Jones, General Manager, Telegraph and Telephone Department, Canadian National Rys., was referred to in Canadian Railway and Marine World for September as having been born Sept. 24, 1869, and as having entered railway service in June, 1874. He was born in 1860.

The Western Union Telegraph Co. is reported to be laying a cable of a new type, 100 miles long, for experimental purposes, in Devonshire Bay, Bermuda. It is expected that by this cable, transmission of from 1,500 to 2,000 letters a minute without an accompanying run-in of letters will be made possible. Present normal transmission provides for about 1,000 letters a minute.

Geo. D. Perry, who resigned recently as Vice President and General Manager, Canadian National Telegraphs, Ltd., was entertained at dinner by a number of the company's Toronto officials Aug. 31, and presented with a black walrus club bag, with tortoise shell fittings; a golf bag with complete equipment; and a purse containing \$500, with a bouquet of roses for Mrs. Perry, the gift of the employees of the whole system.

Canadian National Telegraphs had a complete demonstration of the teletype printer at the Canadian National Exhibition at Toronto, Aug. 25 to Sept. 8. The machine is the latest development in automatic printing telegraph apparatus. Two of them were exhibited connected for intercommunication. A panoramic sketch of the Dominion was also shown, with the telegraph lines connecting all important centers from coast to coast.

The Dominion Government finally selected Pachena on the west coast of Vancouver Island, as the site for the installation of its new radiotelegraph station for the Pacific coast. The Government had some buildings there, so that the work to be done comprised chiefly the erection of masts, and the installation of special direction finding apparatus. The station was expected to be in full operation by the end of September or early in October.

The Dominion Government has, an Ottawa press dispatch, states, decided to erect a wireless telegraph station for communication between Dawson City and Mayo, Yukon, and it is said that the service will be in operation by the end of the year. It is also stated that a chain of radiotelegraph stations will be erected during 1924 in the Mackenzie River Valley, connecting with the Dawson station, and giving communication from Yukon to Alberta, through McMurray, Alta. The northernmost station of this system will, it is said, be at Aklavik.

A special committee of the Dominion

Cabinet, consisting of the Ministers of Public Works, National Defence, Trade and Commerce and Marine and Fisheries, was stated in an Ottawa press despatch to be considering the feasibility of consolidating under one department, the administration of the Dominion Government wireless telegraphs, cables, land telegraphs, and other means of communication, this service being at present under different jurisdictions, resulting in some overlapping and unnecessary administration expense. It is believed that by a centralization of the staffs and service, a considerable economy can be secured.

it to establish a tariff which will permit the companies to earn what the Board has held the companies should receive, viz.: "sufficient to pay the cost of operation, maintenance, and depreciation and have sufficient to pay interest upon the actual investment and a small amount of money for reserve." (Judgment Feb. 2, 1921, pg. 659.) This I suggest can best be accomplished by a percentage increase in existing rates.

In the Chief Commissioner's judgment of Feb. 2, 1921, on the occasion of the last general express rate hearing, he said: "I am convinced that the whole express rate, including carriage by the railway and the express end of the traffic, such as pick-up, delivery, billing, messenger service, and general overhead should be based upon a multiple of the standard first class freight rate, and, once a fair multiple is arrived at, it then becomes purely a matter between the railway companies and their subsidiaries, the express companies, to agree among themselves as to what proportion of the whole rate should be credited to the railways for transporting the goods and what to the express companies for carrying on the express portion thereof. If the straight multiple principle were adopted, then, with the exception of goods moving under commodity rates, as freight rates advanced or decreased, express rates would automatically follow suit, and this Board would then only be called upon to adjust from time to time the proper rates to be charged on commodities as fish, fruit and cream. I find, however, that this principle was discussed in Sir Henry Drayton's judgment in the 1919 rate case, and, as it was not adopted, I do not feel like incorporating it as a part of this judgment, but have simply expressed my views in the hope that, when express rates are next under consideration by this Board, conditions may have been changed to such an extent that this principle may be adopted, without in any way attempting to reverse the well considered opinion hereinbefore referred to."

In view of the Chief Commissioner's suggestion, the companies have prepared figures showing the probable result of the adoption of a multiple of the standard first class freight rate, which they will submit to the Board for its information. As the present financial position of the companies is a most difficult one, I ask the Board to appoint an early date for the hearing of the application.

The application will be heard by the Board at Ottawa on October 4. A Montreal press dispatch says the wholesale fish and fruit dealers there will oppose it. Sault Ste. Marie, Ont. Board of Trade and several business firms there, will, it is said, endeavor to complain to the Board of Railway Commissioners that express rates there are made unduly high by the present express rate structure. They have maintained for some time that they are unfairly treated as compared with the district east of Sudbury. As stated in a previous issue of Canadian Railway and Marine World, the Board of Railway Commissioners, in the equalization of rates cases, placed Sault Ste. Marie in schedule A territory, as concerns freight rates, and consequent on that, the Board of Trade applied to the Express Traffic Association for similar treatment in respect of express rates, but failed to get it. The Toronto Board of Control has instructed the city's legal department to oppose the Express Traffic Association's application.

Among the Express Companies.

The Canadian National Railways Express Department has opened an office at Ridpath, Sask.

J. B. Barrett, heretofore agent, Dominion Ex. Co. at Oshawa, Ont., has been appointed agent at Guelph, Ont., vice J. N. Hennessey.

The Canadian National Rys. Express Department closed its summer offices at Grand Beach and Victoria Beach, Man., Sept 6 and 9, respectively.

N. R. Weir, heretofore route agent, Dominion Ex. Co., has been appointed agent at Oshawa, Ont., vice J. B. Barrett, transferred to Guelph, Ont.

The Dominion Ex. Co. has closed its offices at Severn Falls, French River and Christie Lake, Ont., these points being now treated as flag stations.

The Canadian National Rys. Express Department has closed its offices at Bear River, P.E.I., Norway Bay, Que., Bala Park, Lake Joseph and Sparrow Lake, Ont.

W. M. Johnstone, route agent, Dominion Ex. Co., North Bay, Ont., is now in charge of the territory heretofore under N. R. Weir, route agent, appointed agent at Oshawa, Ont.

C. E. Henderson, heretofore agent, has been appointed station agent, Canadian National Rys. Express Department, Charlottetown, P.E.I., reporting to the General Agent, M. Calder.

J. A. Humphrey, Chief Clerk, Canadian National Rys. Express Department, Moncton, N.B., was presented with an engraved fountain pen and pencil, by his associates, Sept. 5, on leaving the service to study osteopathy at Kirkville, Mo.

The Board of Railway Commissioners passed order 33,956 July 25, refusing the Express Traffic Association of Canada's application for an order approving form of release for empty cream cans left on station platforms. The order is given fully, under "Traffic orders by Board of Railway Commissioners," on another page of this issue.

West Coast Express Co., Ltd. has been incorporated under the British Columbia Companies Act, with \$10,000 authorized capital, and office at Vancouver, to carry on the business of general carrier, by land or sea, railway and forwarding agent, shipping agent, warehouse man, bonded and common car, and any other allied business, and to operate ships and vehicles.

A Jersey yearling bull which obtained third prize at the Canadian National Exhibition at Toronto, and which was sold to a cattle breeder in New Zealand, was shipped from Toronto by express to New Zealand early in September. This is stated to be the first time that

a prize animal bought at the Exhibition has been shipped overseas by express from Toronto.

The Board of Railway Commissioners passed order 34,178, Sept. 15, approving a bylaw passed by Canadian National Ry. Co.'s directors, Aug. 20, authorizing C. A. Hayes, General Manager, Express Department, and W. C. Muir, Assistant General Manager, Express Department, to prepare and issue tariffs of every description of the express tolls to be charged by the company, and to specify to whom, where, and the manner in which they shall be paid.

Application for Revision of Express Rates.

F. H. Phippen, K.C., Counsel, Express Traffic Association of Canada, sent the following application to the Board of Railway Commissioners recently:—

Dear Sirs: On behalf of the Express Traffic Association of Canada representing the express companies doing business in Canada and also the Canadian National Rys. Express Department, I beg to apply for such an adjustment of rates as will permit the companies to earn a fair return for their services. A detailed analysis shows that notwithstanding the most rigid economy the business of the express companies actually cost more than the total express receipts, without providing anything for remuneration or for the use of the necessary property and capital. This situation has been accentuated by the recent order of council reducing express rates on cream.

The Dominion Express Co., since first commencing business, has paid the C.P. R. Co. for its portion of the service on the basis of one and one-half times first class freight rates. This basis of payment has on several occasions received the Board's approval. On this division the company's revenues have at no time since the last revision of express rates been sufficient to meet the company's actual out of pocket expenses. Both the C.P.R. Co. and the Dominion Express Co. are performing their respective portions of the service at an actual loss.

The Canadian National Express Co. nominally has shown surplus earnings, due to the fact that the Canadian National Rys. has been paid much less than the actual cost to the railway of performing its share of the express service. If the cost to the railway of its portion of the service be taken into consideration, it will be found that the Canadian National Express Co.'s business is carried on at an actual loss to both companies.

As it is impossible for the companies to continue performing the services under present rates, I would ask the Board to make such investigation as will enable

Electric Railway Department

Hamilton and Dundas Street Railway Ceases Operation.

The Dominion Power and Transmission Co., which owns the Hamilton and Dundas St. Ry., notified the Hamilton City Council, and the Dundas Town Council, on Aug. 30, that it would cease operating its cars between Hamilton and Dundas, at midnight, Sept. 5. W. C. Hawkins, Managing Director is reported to have stated in an interview on Sept. 1 that the H. and D. Ry. had not made expenses for some time past, and even under the new arrangement for higher fares made at the beginning of the year the line could not support itself. While the operation of buses had some effect on the diminution of traffic, they did not affect the company's receipts as much as privately owned automobiles. Mr. Hawkins attended a meeting of the Hamilton Board of Control on Sept. 4, and is reported to have stated that the company was prepared to surrender its franchise and pay the penalties. The Board was anxious to arrange to have the company operate a service on the line within the city, but pointed out that the loss was at about \$2,500 a month, and the company could not find the money. A conference was held Sept. 5, between E. P. Coleman, General Manager, and the board of control with regard to a service on the H. and D. R. line within the city, following which Mr. Coleman issued the following statement:—"The legal situation in regard to the H. and D. R. tracks under the present conditions is very uncertain, and I am inclined to believe that officially I have no authority to interfere in any way, shape or fashion. We realize, however, that the people in the southwest section of the city need some form of service, and for the present the Hamilton St. Ry. will operate a 20-minute service as far as the Westinghouse works. This service will be given with the understanding that this arrangement is subject to the legal complications which may arise to stop it. The city authorities have agreed to put all legal claims aside temporarily and to co-operate with the Hamilton St. Ry. in providing temporary service for the district."

The operation of the cars over the line was stopped at midnight, Sept. 5, according to notice, and on the morning of Sept. 6, bus proprietors in Dundas put on a sufficient number of vehicles to carry all traffic offering. A bus service was also put on in the southwest Hamilton district, and another bus service was also operated by a private concern. The H. and D. St. Ry. employees are being taken care of by the other electric railways owned by the D. P. and T. Co. The H. and D. St. Ry. Co.'s affairs are reported to have been placed in charge of Gibson, Levy and Co., the company's solicitors with a view to their being wound up. The principal creditor is the Dominion Power and Transmission Co. which has been paying operating losses.

The Hamilton and Dundas St. Ry. Co. was incorporated by the Ontario Legislature in 1876 to build and operate a street railway between Hamilton and Dundas. A franchise agreement was entered into between the company and the Dundas Town Council on Nov. 5, 1877, which was confirmed and declared binding by the Ontario Legislature in 1879, in an amending act, which also authorized

the company to increase its capital stock to \$50,000, and to issue \$25,000 of bonds in addition to \$25,000 issued in Sept. 1878, the interest on them not to exceed 8%. A further act was passed in 1881 under which the capital was to consist of \$26,000 of shares then outstanding, and a further \$20,000 of preferred or deferred stock the interest on which was not to exceed 8%; the original \$25,000 of bonds, and the \$5,000 of the second issue, were to be called in, and the company was authorized to issue \$50,000 of 6% bonds. In 1884, the company was authorized to

same time at \$65,000. In 1890 the company was authorized to increase its bond issue to \$150,000, and in 1895, it was authorized to issue \$100,000 of 2nd mortgage bonds; to operate its line by electricity only in Hamilton, east of Queen St., and by electricity or steam, or both west of Queen St., Hamilton, to Dundas. The Dundas Town Council, with the rate-payers' approval passed a bylaw in May, 1897, for the electrification of the line, and for its extension, and on June 17, 1897, an agreement was entered into between the company and the Toronto, Hamilton and Buffalo Ry. Co. for the operation of that company's freight trains into Dundas, the bylaw and the agreement being ratified by the Ontario Legislature in 1898. The bylaw provided for the extension of track from the then terminus in Dundas to Fisher's Mills, for the construction of sidings, and for the connection of the line with the T. H. and B.R. in Ancaster Gore; for the electrification of the line, the work to be completed by Sept. 1897; local fares in Dundas to be 5c, or 6 tickets for 25c; children's 3c or 10 tickets for 25c; persons living in Dundas but employed in Hamilton to be sold 6 return tickets for 75c, available between certain hours, and to be used within 2 weeks; a motorman and conductor to be employed on each car; the agreement to run for 50 years, with the option of reviewing conditions at the end of 30 years. The agreement with the T. H. and B. Ry. provided for the payment of \$2,750 a year on the completion of the extension and the provision of the necessary terminal facilities in Dundas, and of \$1,750 additional a year subject to adjustment from time to time; the agreement to run for 21 years, and for a further term of 21 years if it were found to be legal, either party having power to apply to the Dominion Parliament for confirmation, which was subsequently done. There is also an agreement between the company and the City of Hamilton under which 6 tickets were to be sold for 25c. The other fares are subject to the Railway Act. The H. and D. St. Ry. passed from its original owners to the Hamilton Cataract Power, Light and Traction Co., which in turn was taken over by the Dominion Power and Transmission Co., which was incorporated Jan. 2, 1907, with authorized capital of \$25,000,000.

The H. and D. St. Ry. has a total length of 6.98 miles, of which 0.20 mile is double track, and 1.60 miles of turn outs and sidings. Of the main line 1.24 miles are east of Queen St., Hamilton, and the junction with the T. H. and B. Ry. is at mile 3.78, the terminus in Dundas being at King St. The schedule shows 36 cars were operated each way, of which four in the morning and two at night in either direction were run on week days only. In January it was reported that the D. P. & T. Co., which owns the line, is reported to have lost \$91,078 in its operation since 1916. The net loss from operation for 1921 was \$17,934.34, and the total corporate loss was \$24,707.59. During 1922, the revenue failed to meet the operating expenses by approximately \$25,000. The H. & D. St. Ry. Co.'s total capital is \$200,000, of which \$100,000 is common stock and the balance bonds.

Canadian Electric Railway Association.

Honorary President: Major General Sir John M. Gibson, K.C.M.G., M.A., LL.B., LL.D., K.C., director, Dominion Power & Transmission Co.

Honorary Vice President: Acton Burrows, Proprietor, Canadian Railway and Marine World.

Honorary Advisory Council: Thos. Ahearn, President, Ottawa Electric Ry.; F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario; Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.; Geo. Kidd, President, British Columbia Electric Ry.

President: H. H. Couzens, General Manager, Toronto Transportation Commission.

Vice President: D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.

Treasurer: E. P. Coleman, General Manager, Dominion Power & Transmission Co.

Executive Committee: The President, the Vice President, the immediate Past President (Major F. D. Burpee, Manager and director, Ottawa Electric Ry.), the Treasurer, and G. Gordon Gale, Vice President and General Manager, Hull Electric Co.; W. S. Hart, Treasurer, Quebec Railway, Light, Heat & Power Co., and Vice President, Three Rivers Traction Co.; D. W. Houston, Superintendent, Regina Municipal Ry.; C. B. King, Manager, London Street Ry.; M. W. Kirkwood, General Manager, Grand River Ry. and Lake Erie & Northern Ry.; H. K. McLean, Superintendent of Transportation, New Brunswick Power Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; W. R. Robertson, General Superintendent of Railways, Hydro Electric Power Commission of Ontario; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Superintendent, Hydro Electric Rys., Toronto & York District.

Auditor: Lt. Col. G. C. Royce.

Secretary: Eustace Smith, Jr., Executive Assistant, Toronto Transportation Commission, 35 Yonge St., Toronto.

Official Organ: Canadian Railway and Marine World, Toronto.

build extensions of track to Van Wagner Beach, and to Grimsby, with terminals etc., in Hamilton subject to the Hamilton St. Ry.'s rights and with a restriction as to the streets upon which tracks might be laid; the bonding powers were further amended, and the company was authorized to lease or sell its undertaking. No construction was apparently done under this act, and it was not until after the incorporation of the Hamilton, Grimsby and Beamsville Electric Ry. Co. in 1892, that construction in the direction of Grimsby was undertaken; and not until after the incorporation of the Hamilton Radial Ry. Co. in 1893 and 1894, that the line to Van Wagner Beach was built. The H. and D. St. Ry. Co. leased its undertaking to John Weatherstone on Nov. 21, 1885, the lease being confirmed by the Ontario Legislature in 1886; the bond issue of the company being fixed at the

Publicly Owned Utilities and the Industrial Disputes Investigation Act.

Canadian Railway and Marine World for September gave on p. 431 particulars of the dispute between the Toronto Hydro-Electric Commission and its employees, concerning wages, of the employees' refusal to submit it to voluntary arbitration, as proposed by the Commission; the employees' application for a board of conciliation and investigation under the Industrial Disputes Investigation Act; the granting of such a board; and the Commission's application for an injunction to declare the board to be unauthorized to deal with the dispute and to prevent it from doing so. The board appointed consisted of Judge Snyder, Hamilton, Ont., Chairman, F. H. McGuigan, appointed by the Dominion Minister of Labor to represent the Commission, and J. G. O'Donoghue, Toronto, representing the employees. As pointed out in our last issue, municipally owned electric railway managements are vitally interested in this matter, as, if the Minister of Labor could appoint a board in connection with a municipally owned hydro system, he would also be able to appoint one in connection with an electric railway owned by a municipality.

Mr. Justice Orde, sitting at Osgoode Hall, Toronto, on Aug. 29, granted the injunction applied for. While his judgment permitted the board to go ahead and accept voluntary statements at any hearing it might see fit to conduct, it was made clear that the board possessed no compulsory powers whatever. The Judge said in part: "The injunction, I think, ought not to go beyond this, that the defendants should be restrained from in any way interfering with the plaintiff's business, that they are not at liberty and are to have no power to enter upon the plaintiff's premises or to examine their works or to exercise any of the powers which the Industrial Disputes Investigation Act, Sec. 38, gives them, nor have they power to enforce attendance of witnesses or the production of books, papers, or other documents by the order of the board from anyone who chooses to withhold them."

As stated in our September issue, the Commission's contention, as submitted by G. H. Kilmer, K.C., was based upon its interpretation of the British North America Act, sec. 91, which defines the matters upon which the Dominion may legislate, and sec. 92, defining the matters concerning which provincial legislatures may legislate. The Dominion Labor Department's contention as to the board's legality was based on another interpretation of sec. 91. Not only did the decision granting the injunction declare the board to be without compulsory power, but Mr. Justice Orde stated that there was grave doubt in his mind as to whether the whole Industrial Disputes Investigation Act is *intra vires*, for he said in part: "The main question here . . . is whether or not the Act . . . was within the competence of Parliament to enact, having regard to the provisions of the British North America Act, which divides the power to legislate between the Dominion Parliament and the legislatures of the respective provinces. Counsel for the defendants had rested the constitutionality of the act upon sec. 91, which dealt generally with powers to make laws for the peace, order and good government of Canada, a power very often termed a residuary power, and counsel for defend-

ants had argued that the settlement of industrial disputes, and the appointment of a board, not being mentioned expressly in either of the enumerated heads under secs. 91 or 92, necessarily fell within the residuary power, and were consequently matters for the Dominion Parliament." He was inclined to think that the Industrial Disputes Investigation Act did not create a "law" in the proper sense of the term, and that therefore the Dominion Parliament was probably *ultra vires* in prescribing a course of action to be taken in settling a dispute, as a "law." He stated that he found it very difficult to believe that a piece of legislation appointing a committee or a board for the sole purpose of adjusting a dispute between people was a "law" at all in the sense in which that word was used in the British North America Act, and said further, "I do not attempt to give a comprehensive or exact definition of the word 'law', but I cannot help feeling that when this enactment was passed, what the British Parliament meant was some law which had some binding effect upon someone, a law in its proper sense that creates rights and imposes duties, perhaps defining wrongs and subjecting those who infringe to penalties."

A remarkable feature about this case is that in 1921 the Dominion Labor Department recognized that the Industrial Disputes Investigation Act is not applicable to municipally owned enterprises, for the Labor Gazette of April, 1921, in giving a list of applications received by the Department for the formation of boards of conciliation and investigation, included the following: "(7) From the employees of the City of Saskatoon, Sask., being street railway workers, members of Amalgamated Association of Street and Electric Railway Employees of America, Division 615. The employer in this case being a municipality, a board could be established only upon the joint consent of the disputants. This consent had not been received from the corporation at the close of the month." Again, the Labor Gazette for May 1921 giving other applications for boards, included the following: "From certain employees of the Greater Winnipeg Water District, being enginemen, conductors, trainmen, etc. This dispute was investigated by an officer of the Department, and it was explained to the parties concerned that as the railway was under municipal control a board could be established only upon the joint consent of the disputants. The consent of the employing body was declined and no further action could, therefore, be taken by the Department."

T. L. Church, M.P. for North Toronto, in a statement given to the press in connection with a message he sent to the Minister of Labor recently, said: "It protested against the appointment of the board because the Minister told the House of Commons plainly that the Industrial Disputes Investigation Act does not apply to a publicly owned municipal utility. In this case he was backed up by a legal opinion given by E. L. Newcombe, Deputy Minister of Justice, that the act is *ultra vires* of Parliament."

From these facts it would appear that there was not a great deal of doubt concerning the board's lack of power to act, and that a board appointed under the act to pass upon a dispute between a municipally owned electric railway and

its employees would be equally powerless to compel attendance, the giving of testimony and the production of records.

The Board met on Aug. 30, when the members expressed themselves as prepared to conduct an enquiry and hear voluntary statements, and listened to a long statement from J. T. Gunn, representing the employees, but the Commission declined to participate in the proceedings. The employees, at a meeting on Sept. 2, decided that they would not strike to enforce their demand for higher wages, but that they would accept the Commission's offer of voluntary arbitration, which they had declined to accept previous to applying for the board. A press report of Sept. 8 stated that the Commission was undecided as to whether it would allow the employees to take up its offer at such a late date, and stated that it had been advised by counsel that it should await whatever action the conciliation board might take before taking up the question of voluntary arbitration.

On Sept. 14 the Board of Conciliation and Investigation adjourned indefinitely, subject to call of the chairman. An Ottawa press dispatch of Sept. 16 stated that a notice of appeal had been filed at Osgoode Hall, Toronto, against Mr. Justice Orde's decision, that the Labor Department would defend the constitutionality of the Industrial Disputes Investigation Act as a matter affecting the peace, order and good government of the country, and that it would attempt to uphold the act's validity as affecting public utilities, regardless of ownership.

St. John's, Newfoundland, Street Railway and Power Development. — The Newfoundland Legislature passed an act in 1919 authorizing the Reid Newfoundland Co. to use the waters of Tor's Cove Brook, flowing into Tor's Cove, and of Pierre's Brook, flowing into Witless Bay, for power development purposes, the development to be made within five years from March 15, 1919. The Legislature last session confirmed an agreement, made June 9, 1923, between the Governor-in-Council and the Reid Newfoundland Co., authorizing the transfer of the grant to the St. John Light and Power Co. for a reserve supply, free of all royalty, until developed, and then to be subject to an annual royalty of 50c a horse-power, and to authorize the company to assign and mortgage its franchises under the St. John St. Ry. charter of 1896. The object is to secure the necessary capital for improvements.

Canadian Electric Railway Association. — The following have been appointed a committee on motor buses and trucks: Major F. D. Burpee, Manager, Ottawa Electric Ry., chairman; C. H. Dahl, Assistant to Vice President, Winnipeg Electric Ry.; G. Gordon Gale, Vice President and General Manager, Hull Electric Co.; W. G. Murrin, Vice President, British Columbia Electric Ry.; and W. R. Robertson, General Superintendent, Ontario Hydro Electric Rys. F. S. Livingstone, Traffic Manager, Hydro-Electric Rys., Toronto and York District, having asked to be excused from serving on the valuation, maintenance and depreciation of street railways' assets committee, W. S. Hart, Treasurer, Quebec Ry., Light, Heat and Power Co., and Vice President, Three Rivers Traction Co., has been appointed to succeed him.

Double Truck Safety Cars Ontario Hydro Electric Railways.

The 4 double truck 1-man, 2-man, safety cars ordered by the Hydro Electric Power Commission of Ontario for the Hydro Electric Railways, Essex District, were described in Canadian Railway and Marine World for May, pg. 235, and an elevation of one of them was given. The accompanying illustration shows one of the completed cars, 4 of which were delivered in Windsor on July 23, and are being operated in cross town service, using 2 men in rush hours and 1 man at other times. In 2-man operation both conductor and motorman collect fares, which provides 2 entrances and 2 exits. This arrangement, we are officially advised, results in speeding up the service to an appreciable extent. The car's principal dimensions are as follows:

Length over all	43 ft. 7½ in.
Length over end vestibules	42 ft. 6 in.
Length over end of car body	28 ft. 9 in.
Width over all	8 ft. 5 in.
Width over sheathing	8 ft. 3 in.
Height, top of rail to top of roof	10 ft. ¾ in.
Seat spacing	2 ft. 6 in.
Post spacing	2 ft. 6 in.
Truck centers	20 ft.

The multiple unit electrical control equipment and the air brake equipment, together with the National Pneumatic Co. door engines and the balance of the safety equipment, will be supplied by Canadian Westinghouse Co. The trucks will be equipped with 26-in. rolled steel wheels with standard A.E.R.E.A. inter-urban service flange. These cars will be much the same design as the 4 ordered last spring from the St. Louis Car Co., which were described fully in Canadian Railway and Marine World for May, and of which additional particulars are given above with accompany illustration. The chief differences are that the motors of the new cars will be 35 h.p. instead of 25, that the new cars will be equipped with multiple unit apparatus, to provide for train operation, instead of being suitable for only one-man operation, as are the original 4 cars, and that the new cars will have with automatic drawbars, which the others have not. Minor changes in frame and body design will be introduced. Eight of the

London Street Railway Situation.

Although the London, Ont., City Council appointed Sir Adam Beck recently to negotiate with the London Street Ry. Co. for terms upon which its property might be acquired by the city, in order that a bylaw may be submitted to the voters at the municipal elections in January, the Mayor announced Sept. 11, that he was approaching the company's President with a proposition for an extension of the present franchise on the basis of a reduction in fares. His suggestion is that the fare be 5c. cash, with 6 regular, or 8 limited, tickets for 25c. The President is reported to have suggested in an interview that two questions be submitted to the voters in January, the first as to whether the citizens desire to take over the line, and the second, as to whether by arbitration or by agreement. A number of the aldermen opposed any extension.

A London press dispatch of Sept. 22, stated that Sir Adam Beck feels that unless co-operation from Mayor Wenige and certain aldermen is forthcoming, it is useless for him to continue negot-



Double Truck Safety Car, Ontario Hydro Electric Railways.

Approximate weight—

Car body	20,000 lb.
Control equipment	1,200 lb.
Air brake equipment	1,060 lb.
Motors, gears and cases	4,000 lb.
Trucks	10,000 lb.
Total	36,260 lb.

The electrical equipment includes General Electric type K control apparatus, and four G. E. no. 264 motors of 25 h.p. each. The cars were built by the St. Louis Car Co., St. Louis, Mo.

The Hydro-Electric Power Commission of Ontario has ordered 12 double truck, double end, safety cars, designed to be operated by a one or two man crew, either singly or in trains of 2 or 3 cars. They will be equipped with complete safety appliances. There will be 4 pairs of double doors on each car; in one man operation, only one pair of doors will be used, but a feature of the safety equipment will be that in cases of emergency, when the car is in one-man operation, one of the rear pair of double doors may be opened by hand for the exit of passengers, after an emergency application of the brakes or if the motorman's hand is removed from the controller. The electrical equipment will include 4 G.E. 265-A motors of 35 h.p., per car.

cars are to be operated on the Essex District, and the remaining 4 on the Toronto and York District. The car bodies have been ordered from Ottawa Mfg. Co., Ottawa; the trucks from Taylor Electric Truck Co., and the motors, electrical apparatus and air brake equipment as stated above. Delivery is expected to be made beginning Dec. 1.

Toronto-Guelph Service—A Toronto press report of Sept. 6, stated that a much more frequent service would be provided by the T.S.R. between Toronto and Guelph in the near future. We are advised that this is incorrect, and that the situation is that studies are being made with a view to re-arranging the service and possibly adding more cars at a later date. To increase the frequency of service, additional equipment would have to be bought, at least to the extent of providing car bodies for the spare motors and trucks on hand.

The Kitchener, Ont., Light Commissioners, having taken over the Waterloo-Wellington Ry., propose to buy several new street cars, also material for a complete new system of overhead trolley and feeder wire.

iations with the company for the purchase of the system. He is reported to have said: "I cannot see any object in continuing, and in spending money on appraisal with the present rate of co-operation. I cannot make progress under such conditions, nor can I justify continuing negotiations. Encouragement of the railway in spending money on second hand equipment and inferior construction work is adding enormously to the cost of the railway to the city without compensating value. I have conducted friendly negotiations for the purchase of over 90 properties, and in every case have been able to come to a satisfactory settlement, but in these cases I have always had the best of co-operation."

Fort William and Port Arthur Street Railways.—A Fort William press dispatch of Sept. 19 stated that the city's utilities committee had passed a resolution asking for a meeting with Port Arthur Public Utilities Commission, to see if the street railway disagreement could be settled, so that cars might run through, instead of each city turning its cars at the boundary, as at present.

Electric Railway Wages, Working Conditions, Etc.

Brandon Municipal Ry.—The employes, together with other civic employes are reported to be negotiating with the city council with respect to certain complaints, said to be of a more or less minor character, as to working conditions.

British Columbia Electric Ry.—A board of conciliation and investigation in connection with differences as to wages, etc., between the company and its employes was appointed by the Labor Department recently, consisting of A. G. McCandless, Vancouver, nominated by the company; R. T. Pettipiece, Vancouver, by the men, and A. M. Pound, Vancouver, appointed by the department as chairman, in the absence of a recommendation from the two other members. The question at issue is, as stated in Canadian Railway and Marine World for September, the men's application for the reinstatement of the agreement in force prior to Jan. 5, 1922. The present rates of pay, which were fixed under the agreement of Jan. 5, 1922, are: Conductors and motormen, 1st 6 months, 48½c.; 2nd 6 months, 53c.; 3rd 6 months, 56c.; thereafter, 58½c. One-man car operators, 64½c. Conductors and motormen in work train service, 2c. an hour extra. On interurban lines, District 1, District 4, 16th St. yard and Carroll St. yard, the rates per hour are: Passenger conductors and motormen, 1st 6 months, 48½c.; 2nd 6 months, 54c.; 3rd 6 months, 57½c.; thereafter, 60½c. Freight conductors and motormen, 1st 6 months, 51½c.; 2nd 6 months, 56½c.; 3rd 6 months, 60½c.; thereafter, 63c. Passenger brakemen, 1st 6 months, 48½c.; 2nd 6 months, 52c.; 3rd 6 months, 55c.; thereafter, 57½c. Freight brakemen, 58½c. Trolley men, 56½c. Sunday work to be paid at rate of time and a quarter; holidays, time and a half. Extra men to be guaranteed minimum monthly earnings of \$87.50. These rates do not apply to conductors and motormen on the Lulu Island Branch; the Fraser Valley line, and the Saanich Division on Vancouver Island. These rates were fixed after a board of conciliation had recommended a reduction of 10% on the then existing rates, which the men are now desirous of having restored. That schedule was put in operation October, 1920, and provided for the following rates per hour: City motormen and conductors, 65c.; interurban motormen and conductors, 67c.; car repairers, 70c.; mechanics' helpers, 65c.; car cleaners, 58c.; carpenters, 77c.; blacksmiths and machinists, 80c.; trackmen, 60c.

Calgary Municipal Ry.—Discussion of whether all day work on the railway be given to the most senior men on the staff, or whether the day and night work be split upon a 50-50 basis among the motormen, has been brought forward again. The question was dealt with in July, 1922, but the settlement then made has apparently been looked upon by the men as only a temporary one, and they desire to have the matter settled permanently, and therefore made certain representations recently to the city council.

London St. Ry.—A revision of the car schedule put in effect Sept. 1, is reported to have transferred 15 regular men to the spare list. The local union's executive committee discussed the matter on Aug. 30, and agreed with the arrangement to try the new schedule for some weeks to see how it would operate.

The Montreal and Southern Countries Ry. management issued a notice in Sept., 1922, desiring its employes to live as near to their work as possible, and advising those living in Montreal that it would be more convenient if they could find homes on the south shore, when their leases expired in the following May. The Longueuil Town Council took up the matter and passed a resolution Sept. 12 asking for the withdrawal of the notice. W. B. Powell, general manager, is reported to have stated that there is no reason why employes should not live anywhere on the south shore, so long as they are within reasonable distance of their work, and that Longueuil is close enough to the company's carhouse and at St. Lambert.

Levis County Railway and Auto Bus Competition.

The Levis County Ry. made a public protest recently against the illegitimate competition of motor buses in Levis and the rest of the area served by its lines. The company takes the position that under its franchises, and the judgment given by the Quebec Public Service Commission in 1922, the municipalities are bound to protect it from such competition. If the protest is not sufficient to induce the municipalities to take action, the company will, we are officially advised, take the matter before the Commission. The buses are being operated out into the country, and in addition, are picking up and setting down passengers along the street car routes in Levis. It is this practice, in particular, which the company complains of and which it desires to have stopped.

Electric Railway Projects, Construction, Betterments, Etc.

Calgary Municipal Ry.—A press report states that about 250 ft. of the street railway track at the corner of Sixth St. East and Ninth Ave. has sagged considerably, and will be torn up and relaid. This will be the last large job to be done this year. (Sept., pg. 450.)

Fort William Municipal Ry.—A press report states that Fort William, Ont., City Council has authorized the construction of a turning loop at Northern Ave.

Montreal Tramways Co.—Verdun City Council is reported to have decided not to pave Wellington St., from St. Willibords St. to Woodlands, as it is proposed to build an extension of the Verdun-Wellington St. line early in 1924.

New Brunswick Power Co.—In connection with the projected relaying of tracks on Main St., between Douglas Ave. and Portland St., St. John, a press report states that the plans have been deposited with the City Engineer. It is proposed to use steel ties laid in asphalt. Tenders for the work are reported to have been invited. (Sept., pg. 450.)

Quebec Ry., Light and Power Co.—We are advised that the company's shops at Limoilu and Ste. Anne are to be combined with the shop at Montmorency Falls during 1924.

Toronto Suburban Ry.—Work is proceeding on moving three-quarters of a mile of track on Main St., Weston, which is just outside Toronto's northwest city limits, from the west side of the street to the center. This is in accordance with an agreement entered into by the railway with Weston Town Council some time ago. Paving of the street by the town is being done at the same time.

Waterloo-Wellington Ry.—We were officially advised recently that the Kitchener Light Commissioners expected to start work on the rehabilitation of the Waterloo-Wellington Ry., from Kitchener to Bridgeport, Ont., about the end of September. Some portions of the track will be rebuilt, with new ties and rails; and a complete new system of overhead trolley wire and feed wire will be installed. This railway has been taken over by the city of Kitchener, for \$25,000, as a result of a recent vote of the ratepayers. It is to be consolidated with the Kitchener & Waterloo St. Ry., and operated in conjunction with that line by the Kitchener Light Commission.

Electric Railway Passenger Fares.

London and Port Stanley Ry.—A press report of Sept. 17 stated that the London Railway Commission had extended the time for the use of commutation tickets from Sept. 15 to Oct. 15. These tickets are used largely by St. Thomas and London people for summer residence purposes at Port Stanley, Ont.

Waterloo-Wellington Ry.—We are officially advised that the Kitchener Light Commissioners will operate the Waterloo-Wellington Ry. between Kitchener and Bridgeport, Ont., which is being acquired by the Kitchener City Council, as well as the Kitchener and Waterloo Street Ry. A 5c. fare will be charged on the newly acquired line, with an additional charge of 1c. for transfers to the K. and W. S. Ry. The present fare charged on the Bridgeport line is 7c. cash, or 4 tickets for 25c., without transfer privileges. The K. and W. S. Ry. fare is 5c. cash, or 6 tickets for 25c., and limited tickets as follows: Between 6.30 and 8 a.m., noon and 1 p.m., and 5 and 6.40 p.m., eight tickets for 25c.; 100 tickets in book form, good until used, but not transferable, \$3.50; children's tickets, 10 for 25c.

United States.—The Detroit, Mich., Free Press admits that Detroit was able for a time to operate its car system with low fares only because "at the outset considerable items that should have been charged up to municipal ownership were diverted to other accounts, and because it has scrimped on service and has allowed the system to remain in a ramshackle condition."

Port Arthur and Fort William Electric Railway Differences.

About a year or so ago, owing to differences between the Port Arthur Public Utilities Commission and the Fort William City Council's public utilities committee, with respect to electric railway matters, each of the two bodies decided to operate their cars only to the boundary separating the two cities, instead of running a through service.

Since then there has been a continued agitation by the people of both cities favoring a through car service, the inconvenience of the transfer at the boundary being urged as a reason for a return to the old plan of operation. The Fort William public utilities committee passed a resolution, Sept. 18, asking the Port Arthur Public Utilities Commission to meet the committee and endeavor to arrive at an amicable settlement of the question. A copy of the resolution was reported to have been received by the Port Arthur Public Utilities Commissioner, Sept. 21, and it is said that a meeting will be arranged.

Judgment on Appeal Against Toronto Railway Award.

The First Divisional Court, of the Appellate Division, Ontario Supreme Court, gave judgment in Toronto on Sept. 24 on the city's appeal against the award made on Jan. 31 by Hume Cronyn, chairman, and Sir Thomas White, representing the Toronto Ry. Co., a majority of the arbitration board appointed to decide the amount to be paid to the company by the city for the properties taken over by the latter on Sept. 21, 1921, and from which the city's arbitrator, Sir Adam Beck, dissented. The majority award was that the city pay the company \$11,188,500 for real and personal property which they found to be necessary in connection with the working of the railway, together with interest at 5% per year from Aug. 31, 1921, to the date of the award.

The city, in appealing against the award, filed the following reasons: "It is excessive in amount; it is contrary to law and evidence and the weight of evidence; it includes matters not within the arbitrators' jurisdiction; it is erroneous for mistakes of fact appearing on the face of the award and in the reasons for award delivered therewith. It is erroneous for mistakes in the principles of valuation adopted by the arbitrators appearing on the face of the award and in the reason for award. It is erroneous on the ground of irregularity appearing in the evidence and proceedings and on the face of the award and in the reasons for award delivered therewith. It is erroneous because property is included which is not necessary to be used in connection with the working of the railway. It is erroneous because the arbitrators took into account evidence of certain elements of value which should not have been considered, particularly with regard to current prices of labor and material and government taxes and exchange."

The judgment given by the First Divisional Court on Sept. 24, was written by Mr. Justice Hodgins, concurred in by Chief Justice Sir Wm. Mulock, and Justices Ferguson and MacLaren, and dissented from by Justice Magee. The portion of the majority judgment on the arbitrators' jurisdiction was written by Chief Justice Sir Wm. Meredith, who sat at the appeal hearing, but died since, and his views were accepted. The city's appeal to quash the award was refused, but the amount was reduced by \$543,500 to \$10,645,000, the court holding that the city need not take properties valued by the arbitrators at that amount, and which were included in schedule B attached to the award as follows: "The portion of the power house property on Front St. East which the city claimed to be entitled to reject, consisting of land, building, plant, tools, equipment, and furniture; the storage battery properties, viz.: battery and garage property at Front and Frederick Sts., including land, buildings, structure, storage battery, and equipment, together with battery booster and equipment; Harrison St. storage battery property, including land, building, structures, storage battery and equipment, together with battery booster and equipment in Harrison St. substation; storage battery in Yonge St. substation with motor generator set and exciter motor generator set; Sherbourne St. storage yard and carpenter shop at northwest corner of Front and Frederick Sts." The judgment also varied the

award by striking out the clause requiring the city to pay the company interest on its amount from Aug. 31, 1921, to the date of the award, but made it clear that the company may sue the city for this. As each party succeeded in part the court did not allow costs to either.

As stated above, Mr. Justice Magee dissented, as he did not agree with the elimination of the \$543,500 worth of railway property from the award, and held that the arbitrators should have required the city also to take the company's head office at King and Church Sts., valued at \$170,000. In referring to Sir Adam Beck, he said: "The conclusions were not concurred in by the arbitrator selected by the city, but we were without the benefit of any figures which would have commended themselves to his judgment or the reasons which would have moved him thereto."

At the time of writing (Sept. 25) it appears probable that both the city and the company will further appeal to the Supreme Court of Canada and ultimately to the Imperial Privy Council's judicial committee.

Montreal Tramways Co's Annual Report and Meeting.

The Montreal Tramways Co's report for the year ended June 30, presented at the annual meeting on Sept. 4, which is given in full on pg. 512 of this issue, was received by the shareholders with general satisfaction, and also by the Montreal public generally, and by the press. The Montreal Star says: "It discloses that the company has worked into new high ground in the matter of earnings, and is a document from which the shareholders may derive considerable satisfaction. One point which seems to stand out clearly is that the company is one of the most successful of its kind in America. The figures show a marked improvement in every department, compared with previous years, the gross earnings creating a new high record, while the operating and maintenance expenses have been maintained at about the same ratio to gross earnings as for 1921-22, notwithstanding the heavy expenditures that have been made during the fiscal year for improvements to roadbed, plant and equipment, which have improved the service given to the public, and maintained the high standard of the equipment, for which the company is noted. A study of the report discloses several interesting facts which show the remarkable progress made by the company, among them being the addition of \$400,000 to the general reserve account, bringing it up to \$1,000,000. There is in the treasury first mortgage bonds for \$3,161,000 par value, available at any time to provide additional funds for future expansions. Other quick assets, under the heading of cash, stores, etc., amount to \$1,584,000, while the undivided surplus and reserve accounts total \$2,228,434. Apart from these items, the company has put aside \$500,000 as a guarantee fund provided for under the terms of the contract with the city. Another feature which emphasizes the company's strong financial position is the fact that all the underlying bonds, to the extent of \$3,273,000, have been redeemed and cancelled. The public will be interested to note that the company has, during the

past 12 months, reduced the amount due to the city by \$389,151, having also paid during the same period the amount due for this year, viz.: \$500,000."

The directors were all re-elected, and Hon. J. L. Perron, K.C., was elected to fill a vacancy on the board, which is now as follows: E. A. Robert, President and Managing Director; Senator G. G. Foster, K.C., and P. J. McIntosh, Vice Presidents; W. C. Finley, J. M. McIntyre, Hon. J. L. Perron, W. G. Ross, Senator L. C. Webster, Senator J. M. Wilson. Other officers are Lt. Col. J. E. Hutcheson, General Manager; Patrick Dubee, Secretary-Treasurer; H. R. Mallison, and A. E. Shaw, Assistant Secretary-Treasurer.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:—

	July, 1923	July, 1922
Gross	\$851,843	\$834,772
Expenses	599,348	612,113
Net	252,495	222,659

Cape Breton Electric Co.—

	June, 1923	June, 1922	6 mons. to June 30, 1923	6 mons. to June 30, 1922
Gross	\$56,851	\$46,053	\$338,051	\$287,623
Expenses	53,131	42,920	315,641	291,410
Net	3,720	3,133	22,410	*3,787
Interest	5,626	5,540	33,928	33,445
Balance	*1,906	*2,407	*11,518	*37,232

*Deficits.

Quebec Ry., Light, Heat and Power Co.—Julian C. Smith, President, Quebec Power Co., sent a letter to the shareholders of the Quebec Ry., Light, Heat and Power Co., recently advising them that the directors could not make any change in their offer of July 26, of one share in the Quebec Power Co. for every 4 shares of the Q. Ry. L. H. and P. Co., which offer expired Sept. 28. The Quebec Power Co., the letter stated, had secured support sufficient to guarantee the carrying out of its policy. A meeting of the Quebec Power Co. directors was called for Sept. 14, to discuss details of the taking over of the Quebec Ry., Light, Heat and Power Co.

St. Thomas Municipal Ry.—A press report states that there was a deficit of \$655 on the operations of the railway for August, which is stated to be owing to the expenditure of \$400 on track maintenance and \$113 on repairs to rolling stock. The number of passengers carried was 45,680, against 42,927 for Aug., 1922. The Sunday cars are reported to be receiving the average patronage.

Winnipeg Electric Ry.—

	July, 1923	July, 1922	7 mons. to July 31, 1923	7 mons. to July 31, 1922
Gross	\$383,413	\$397,685	\$3,128,846	\$3,151,172
Expenses	282,221	299,958	2,191,821	2,336,870
Net	101,192	97,727	937,025	814,302
Fixed charges	78,698	70,233	527,929	428,701
Surplus	22,494	27,494	409,096	385,601

The decrease in the surplus for July was not due to any increase of operating expenses, which, exclusive of taxes, decreased approximately \$18,000, but to a decrease in gross earnings of the railway and gas utilities, on account of the unusual prevailing business conditions. The gross earnings of the electric utilities increased \$7,674, which is considerably below the normal increase of the past months. There was also a decrease in large power consumers' accounts, due to unusual business conditions. The operating expenses of the electric utility increased \$8,295, due to an increase in the cost of power.

Mainly About Electric Railway People.

H. H. Couzens, General Manager, Toronto Transportation Commission, and President, Canadian Electric Railway Association, who sailed from Montreal on the s.s. Antonia, on Aug. 11, for England, is expected to return early in October.

Budleigh Faraday, heretofore with the Southern Power Co., Montreal, is reported to have been appointed Commercial Manager, New Brunswick Power Co., St. John, N.B.

G. Gordon Gale, Vice President and General Manager, Hull Electric Co., Mrs. Gale, and their children, have returned to Ottawa, after spending the greater part of the summer at their summer house at Aylmer, Que., and visiting Tadoussac, Que., for a short time.

C. M. Shaw, Assistant Superintendent of Transportation, Montreal Tramways Co., is in charge of that department, no appointment having been made to succeed the late A. J. Gadoua, who was acting Superintendent of Transportation.

W. H. Swift, Jr., who has been appointed Radio Engineer, Canadian National Rys., Montreal, was with the Westinghouse Electric and Manufacturing Co. for 14 years, and for the past five years has been in radio work in the United States.

C. S. Way, heretofore secretary to Manager and Treasurer, London and Port Stanley Ry., London, Ont., has been appointed Auditor, vice H. A. Cromwell, whose resignation to enter insurance business was announced in our last issue.

Oshawa Railway and Toronto Eastern Railway.

An Oshawa press report of Sept. 20 and 21 stated that the Oshawa Ry., a Canadian National Rys. subsidiary will be merged into the Toronto Eastern Ry., another C.N.R. subsidiary, as part of the C.N.R. system of electrified lines centering on Toronto as headquarters, that it will be managed by E. W. Oliver, Manager Niagara, St. Catharines and Toronto, Toronto Eastern and Toronto Suburban Ry.; with J. J. Callaghan, now Superintendent Oshawa Ry., in charge locally, and that Oshawa will be divisional headquarters. The Oshawa Ry.'s office on Simcoe St. South will be made the Toronto Eastern's main station in Oshawa. Another Oshawa dispatch stated that the Oshawa Ry.'s express and freight buildings will be moved back to Celina St. and the site used for the Toronto Eastern station, also that a car house and repair shop would be built in Oshawa.

At the time of writing (Sept. 24), official confirmation of the above was unobtainable, but our information from a reliable source is that the part of it relating to the merging of the two roads is probably correct. The Toronto Eastern Ry., completion of which is proceeding, passes through Oshawa and establishes connection with the Oshawa Ry., and it is believed that the Canadian National Rys. management's intention is to make Oshawa the operating headquarters of the Toronto Eastern line extending from Cobourg to Toronto. As to additional car house accommodation and repair shop, our advice is that the management contemplates the provision of additional fac-

ilities, and it is expected that a new station building will be necessary.

An Oshawa press report of Sept. 23 stated that the mayor, reeve, deputy reeve, a councillor and the town engineer, had interviewed J. E. Dalrymple, President, Oshawa Ry. in Montreal and had secured a promise of a half mile extension of the track on Simcoe Street North and that work would be started at once.

The Oshawa Ry.'s latest official statistics, for the calendar year 1921, are as follows: Mileage, first main track 9; second main track, 4.72; total main track, 13.72; sidings and turnouts, 1; total computed as single track, 14.72. Passenger car mileage, 105,388; freight, mail and express car mileage, 48,550; total car mileage, 153,938; fare passengers carried, 674,740; tons of freight carried, 146,203. Total capital stock, \$40,000, owned by Grand Trunk Railway Co. Passenger revenue, \$35,025.02; baggage revenue, \$55.20; mail revenue, \$996; express revenue, \$17,185.31; freight revenue, \$144,409.58; switching revenue, \$870.56; gross earnings from operation \$198,541.67; other receipts, \$7,587.36; total gross earnings, \$206,129.03; operating expenses, \$142,704.31; net income, \$64,586.94; surplus for year after reserves, special charges, and dividends, \$25,800.06. The rolling stock consists of 8 combination passenger cars, 3 freight cars, 1 mail, express and baggage car, 1 work car, 1 sweeper, and 5 electric locomotives. It has three parks, Alexandria, Lakeview and Oshawa on the Lake. The company's officials are J. E. Dalrymple, Vice President, Traffic Department, Canadian National Rys., Montreal, President; H. W. Cooper, General Manager, Purchasing and Claims Agent, Gananoque, Ont.; J. H. Valteau, Secretary-Treasurer, Gananoque; J. J. Callaghan, Superintendent, Oshawa.

The American Electric Railway Association will hold its annual meetings at Atlantic City, N.J., Oct. 8 to 12. Among the main subjects to be discussed are, the co-ordination of electric railway and bus transportation, essential operating costs, relation of management and employees, and customer ownership of public utilities. The committee reports will be of exceptional interest and value, and the General Electric Co.'s prize for the greatest accomplishments by any street railway during the year, will be awarded. Joint meetings will be held with the Engineering and Accountants, Claims and Accountants, Transportation and Traffic and Claims Associations. Special rates to Atlantic City have been arranged, and the entertainment committee has arranged a full programme, including a ball and evening theater party. The meetings will be held at the Million Dollar Pier, the exhibits being placed under the hippodrome on the north side of the pier. J. W. Welsh, 8 West 40th St., New York, is Secretary.

The Detroit, Mich., Street Railways, which are owned and operated by the city, had a decrease of \$106,861 in net earnings for August, compared with Aug. 1922, operating expenses per car mile having increased 3.45c for Aug., 1922. Officials state that increased power charges, and increased wages for platform and electrical employees which were in effect the last half of the month, are responsible for the slump. On Sept. 2, the fare was advanced from 5c to 6c, with 1c additional for transfers.

Winnipeg Electric Ry. has repainted 90 of its street cars, this year.

Electric Railway Notes.

The New Brunswick Power Co. has on its payroll 250 men and women, who were paid \$300,000 in salaries and wages during 1922.

Toronto Street Railwaymen's Union have a deposit of about \$12,000 in the Home Bank of Canada, which suspended payment recently.

Harry Edelberg, a passenger on a Montreal Tramways Co.'s car on St. Louis Boulevard, struck the motorman, F. Brisebois, recently, causing him to momentarily lose control of the car. He was fined \$20 and costs or two months imprisonment.

The London, Ont., St. Ry. is reported to have made some reduction in the number of cars on the Normal and Ridout lines, it being claimed that too many cars were being operated on single line stretches. It is also reported that there will be a cutting out of some stops on other lines.

London, Ont., St. Ry. put in effect, on Sept. 3, a new system of stops, which has eliminated a number of points in the outlying parts of the city where the cars stopped formerly, and has changed the position of other stops. The posts indicating the stopping points have been painted white.

Brandon Municipal Ry. officials are reported to have taken stock, recently, and to have found steel rails worth \$12,000, which have been in stock almost since the lines were built. As they are not likely to be required for years to come, the city council is reported to have given instructions for their sale.

The Montreal Tramways Co. is reported to be placing on its cars the fittings for the new plan of showing route numbers. The number, sufficiently large so that it can be made out a considerable distance away, and certainly double the distance at which the names of the routes can now be deciphered, will be placed in the front of the car, on the side, facing the sidewalk, and at the rear. These numbers will be illuminated at night. The route names will be kept in the same places as at present. The company is getting out maps showing the routes, with the numbers which are to be used on the cars.

The New Brunswick Power Co.'s application for a permanent injunction to restrain the City of St. John from erecting its hydro electric distribution system as at present planned and being carried out, was argued in the Chancery Court at St. John, Aug. 22. The company's applications for interim injunctions had been dismissed previously. Considerable evidence was given on the opening and several following days. On Aug. 25, Mr. Justice White refused to grant an interim injunction to restrain the city proceeding with the work until the present case was concluded; and on Aug. 30, it was stated that the further hearing would be put off for some time.

The Ontario Hydro Electric Railways will build a terminal station at the Toronto terminus of its Toronto and York District, Mimico Division line, which extends from Toronto to Port Credit, 8.36 miles. It will be built on land leased from the Toronto Harbor Commission at the nominal rental of \$1 a year, and will be located between the loop at the western terminus of the Commission's Lake Shore Road line and the present radial railway tracks, near Jane St.

Toronto's Acquisition of Toronto Suburban Ry's City Lines.

Details of negotiations between the City of Toronto and the Toronto Suburban Ry. management for the taking over by the former of the T.S.R. lines within the city have been given in preceding issues of Canadian Railway and Marine World. After long delay, the acquisition of these lines by the city now seems to be much nearer than heretofore, as a draft of the final agreement for sale has been presented by the Canadian National Rys.' Legal Department to the City's Legal Department. The T.S.R., an electric road with a line to Guelph, a line in York Township to Weston and Woodbridge, and lines in the northwest portion of Toronto, is owned by the Dominion Government, and under C.N.R. management.

The preamble to the draft agreement states that the parties thereto are the Toronto Suburban Ry., the City of Toronto, York Township and the Toronto Transportation Commission, and recites that the railway was incorporated by Ontario legislation in 1894 as the Toronto Suburban St. Ry. Co., that its name was changed by the same authority in 1900 to its present one, that its franchise agreement with the Town of Toronto Junction, now included in Toronto, expired in 1921, that the one with York Tp. does not expire until 1929, but that, notwithstanding the latter fact, and in the presence of enabling legislation secured from both the Dominion and Ontario Governments, the lines operated under the York Tp. franchise will be included in the proposal. The agreement states that the sections of the line covered by the Toronto Junction franchise, viz., the Dundas, Fairview, Keele St. and Davenport sections, the value of which, according to the franchise, was to be decided by arbitration in event of them being acquired by the municipality, are valued at \$87,628.67 for the proposed sale. The Lambton and Davenport East sections are valued, for purposes of the sale, at \$51,671.33. An accompanying schedule defines the sections of line mentioned as follows: Lambton section, on Dundas St., from city limits at west side of Runnymede Road, west to and including the loop at Lambton, 1.34 miles; Dundas section, on Dundas St., from the east side of Keele St. to the city limit at the west side of Runnymede Road, 0.906 mile; Fairview section, on Gilmore Ave., St. Johns Road and Fairview Ave., from a junction on Dundas St. to Evelyn Crescent, 0.64 mile; Keele St. section, on Keele St. and Weston Road, north from the north side of Keele and Dundas Sts. diamond to the city limit at Northlands Ave., 1.079 miles; Davenport west section, on St. Clair Ave., Ford St., and Davenport Road, from a junction on Keele St. to the old limits of the Town of Toronto Junction on the west side of the G.T.R. Northern Division line, 1.24 miles; Davenport West section, on Davenport Road and Bathurst St. from the old limits of the Town of Toronto Junction on west side of G.T.R. Northern Division, to the north side of the C.P.R., 2.073 miles. Total mileage, 7.278.

The draft agreement provides that the Toronto Suburban Ry. obtain a partial discharge from the trustees for the railway bondholders, covering the properties to be vested in the city of Toronto. The T.S.R. to cancel all its rights, powers and privileges in respect of

property on city streets sold to city, subject to certain specified temporary privileges. The T.S.R. to operate the lines to be sold to the city, for 6 months from the signing of the agreement, under the following conditions: the T.S.R. to supply cars, crews and power; fares to be collected by Toronto Transportation Commission conductors who will sell T.T.C. tickets; the T.S.R. will furnish 6 cars with which to operate the lines for \$250 a month; the T.S.R. to be paid by the city for the entire cost of operation, plus 15% of the gross earnings, and the city to indemnify the railway against loss due to accidents, etc. The T.S.R. to assist the city in grade separation at Weston Road, by furnishing the city material from cuttings on the T.S.R. new line, with which the city will raise the level of Weston Road, at the point where the T.S.R.'s new line will cross it, 14 ft. above the present level. The T.S.R. to provide an adequate subway for itself at that point. The T.S.R. to procure from the Canadian National Rys. a waiver of any claim against the city for damage to C.N.R. property due to the grade separation mentioned. The T.S.R. and the city to agree to drop pending legal action concerning Lansdowne Ave. signal system, each party to pay its own costs. The city to allow the T.S.R. to maintain, free of charge, certain facilities, such as transmission lines, telephone dispatching circuits, etc., within the city, for two years from signing of agreement. The T.S.R. to maintain these facilities in good condition and to assume any loss incidental to their presence or operation. The city to allow the T.S.R. to move its cars over the tracks specified in the agreement, free of cost until their gauge is changed from standard to city gauge. The city to buy the T.S.R.'s light and power system for \$12,000. The city to supply the T.S.R. with direct current power from the Toronto Transportation Commission trolley system to an amount and under conditions specified. The city to allow the T.S.R. to connect its proposed new line, from its proposed terminus at Keele St. and St. Clair Ave., to a point on St. Clair Ave., approximately 100 ft. east thereof, and across the steam railway tracks therefrom, and to operate cars, not containing passengers, over the connection, until grade separation with the steam railway tracks is accomplished, or until the Toronto Transportation Commission requires that portion of St. Clair Ave. for its tracks. The sale of the portions of the T.S.R. affected by the franchise agreement with York Tp. in 1899 shall not prejudice the railway's rights, under that agreement. Any adjustments necessary shall be settled by conference between E. B. Walker, Electrical Engineer, Bureau of Economics, C.N.R., and H. H. Couzens, General Manager, T.T.C.

From the draft agreement summarized above, which, at the time of writing, Sept. 15, is merely a proposal, it may be surmised that the parties are nearing the point where the sale of the T.S.R. city lines to the city of Toronto will be effected. Legal representatives of all parties are, at the time of writing, engaged on the matter, and our information, from a reliable source, is that it is expected that the sale will be made on terms which will coincide very closely with those above given.

Niagara, St. Catharines & Toronto Railway Franchises, Construction, Etc.

Details of the franchises, including new fares, which the Niagara, St. Catharines & Toronto Ry. is seeking from Port Dalhousie, St. Catharines, Merritton, Thorold and Niagara Falls, Ont., were given in Canadian Railway and Marine World for July, and it was pointed out that certain rehabilitation and construction work the management had provided for, would be done only if and when the desired franchises were granted, while certain other work incidental to improvement of the service would be gone ahead with independently of the franchise negotiations. The situation at the time of writing (Sept. 15) is that the franchise negotiations with the various municipalities are still proceeding with the result that the work dependent on the franchise being secured is held up, while active preparations to prosecute the other work are being made. Tenders were asked for the construction of a passenger terminal in St. Catharines, facing Geneva St., at Balfour and Welland Sts., to be in by Sept. 8, but the time was extended to Sept. 15. We are officially advised that the freight terminal to be built on Church St., St. Catharines, will also be gone ahead with in the near future.

Concerning interurban line improvements, we are advised that work on the St. Catharines-Port Dalhousie line will proceed at once, but that electrification of the G.T.R. branch line between Port Dalhousie and Merritton, to provide for its operation in conjunction with the present N. St. C. & T. system, will be postponed until next spring.

At the St. Catharines Chamber of Commerce luncheon on Aug. 27, E. W. Oliver, Manager, N. St. C. & T. Ry., explained the situation as concerns local line improvement in St. Catharines, stating that had the franchise terms been agreed to, a start on the track rehabilitation within St. Catharines could have been made by Sept. 1. While the mayor had expressed regret that the local lines could not be rehabilitated this year, his reported statement that the vote on the franchise question could not be taken before December indicates where the responsibility lies for the postponement of the work.

In Niagara Falls, the railway management has secured right-of-way for a line from a junction with Victoria Ave. to opposite the International Bridge, where a terminal will be built. New trackage is planned for Lundy's Lane and Stanley St., and Victoria St. will be double tracked. In addition to this, the existing lines will be rehabilitated. While this work is delayed because of no agreement having resulted from the franchise negotiations, it is expected that a vote will be taken in the near future resulting in the town's acceptance of the railway terms.

The Grand River Ry., a press report states, applied recently to Kitchener, Ont., City Council for an extension of running rights on certain streets to enable it to operate a passenger service to Waterloo. The company now operates a freight service to Kitchener. The Kitchener City Council instructed the mayor not to sign any agreement until after the proposals had been agreed to by the Town of Waterloo.

Toronto Suburban Railway Route Deviation.

Consequent on negotiations between the Toronto Suburban Ry. management and the City of Toronto, for the taking over by the latter of the T.S.R. city lines, indicating an agreement in the near future, the railway management, as stated in Canadian Railway and Marine World for Sept., applied to the Board of Railway Commissioners, on July 31, for an order approving a proposed deviation of the T.S.R. route into the city from the northwest. The proposed new line was shown on the plan submitted, to leave the original line near where it crosses Dundas St., to cross the C.P.R. tracks by a subway, to cross Scarlett Road, Jane St., Castle Crescent Road and Syme's Road, all in York Township, on the level, to cross Gunn's Road, in Toronto, by a bridge, and Weston Road, in Toronto, by a subway, and to enter a terminus at Keele St. and St. Clair Ave., Toronto. On the application being made public, the mayor of Toronto and some civic officials made statements to the effect that the new line would be dangerous, as when the city expanded it would find four additional level crossings within its boundaries, and that therefore the plan would be opposed. The Board notified the city and township authorities of the railway's application, in the usual manner, in compliance with the Railway Act, 1919, and received acknowledgement of the notifications. No objection being offered by either city or township, the Board, on Aug. 23, issued order 34,068, granting the railway's application.

On it becoming known that the order had been issued, the mayor and some city officials professed great surprise, and on Aug. 30, the Toronto Board of Control discussed the matter, following which it was stated that an application would likely be made to the Board for a modification of the order, or a rehearing. It was then discovered that Keele St., at the point where the projected line would cross it before turning south to follow it to St. Clair Ave., is still a public thoroughfare, which caused the railway management to apply to the city to pass a bylaw closing that portion of the street. We are advised that the Town of West Toronto Junction, now a part of the City of Toronto, passed bylaw No. 552, on Nov. 17, 1903, in accordance with an agreement entered into with the G.T.R., providing for the closing of the portion of Keele St. referred to and the railway management's argument now is that the city, having assumed the obligations of the town which it absorbed, should carry out the agreement with the G.T.R., now a part of the Canadian National Railways in the same way as the Toronto Suburban Ry. is doing. The mayor of Toronto and various aldermen stated that they did not propose to allow the street to be closed if it could be prevented, although at the point in question it is not used to any extent, and leads into an area of low lying waste land. On Sept. 11 a conference was held between the Toronto Board of Control and York Township Council, and it was decided that, after township engineers had reported upon the cost of trestles to replace the level crossings proposed for the township, the Board of Railway Commissioners would be asked by both city and township for a rehearing of the railway's application. It would seem, there-

fore, that there is going to be opposition to the line deviation plans, which will cause much delay in getting the work under way. We are advised that work would be gone ahead with at once but for the city and township authorities' obstruction tactics.

The railway management's intention is to proceed, when the way is cleared of these obstacles, to extend the line to a terminus at St. Clair Ave. and Keele St., and to use the present car house and freight shed on St. Clair Ave., east of Keele St. and across the steam railway tracks therefrom, until construction is completed of a line on the old Toronto and Niagara Power Co. power line right-of-way to Davenport station, on the G.T.R. Toronto-North Bay line. The line will then follow the G.T.R. where the old belt line makes a junction with it; and the belt line will then be used north of the city to a connection with the electrified line to the east, the Toronto Eastern Ry.

British Columbia Electric Railway's Victoria-Saanich Line.

In connection with the possibility of the closing down of the Victoria-Saanich line, which was referred to in Canadian Railway and Marine World for September, we are officially advised that there is nothing very definite to state at present. The line has been doing badly for many years, the company would be loth to close it, and is making every effort to keep it going. The matter has been before the local bodies with a view to getting any help possible to increase the traffic. It is said that the municipal authorities are at one in being most anxious that it be kept going. The company hopes that with the putting in operation of one-man cars and with increased traffic that may be developed through closer co-operation by the municipalities, it will be possible to keep the line in operation.

Toronto Eastern Railway Construction.

Details of the Canadian National Ry. management's plans for the completion of the Toronto Eastern Ry. as an electric line, and its inclusion in the electrified system in the Toronto district, have been given in preceding issues of Canadian Railway and Marine World. The trouble with the town of Oshawa over paving matters, and its settlement by the town council agreeing to meet the management's views as concerns paving on the track allowance, were dealt with in our September issue.

We were officially advised on Sept. 12 that, consequent on the Oshawa Council agreeing to do the track allowance paving, the rehabilitating of the completed portion of the line between Oshawa and Bowmanville was being proceeded with, about 40 men being put on. The work now proceeding consists of putting in new ties, surfacing track, repairing grade, bridges, culverts, etc. Previous to this a spur line from North Oshawa station, to connect with the T.E.R. line in the town, on which the rails had been taken up some time ago, was relaid. On completion of the rehabilitation work between Oshawa and Bowmanville, the laying of steel between Whitby and Pickering will be proceeded with. The work is being done under direction of of S. B. Wass, Resident Engineer, T.E.R.

We were also advised on Sept. 12 that a decision as to the route for the connection between Pickering, the present western end of the T.E.R., and the C.N.R. Orono Subdivision line over which the electric cars will operate into the Don River terminal in Toronto, had not been made, and that no decision had been made as to the connection with the Orono Subdivision line north of Bowmanville. Surveys were made some time ago, resulting in two or more alternative plans being considered. No decision had been announced as to the disposition of the Orono Subdivision line between the east and west T.E.R. connecting points, although it is expected that this portion of line will be taken up. A decision as to the route into Toronto, and the connecting link between the T.E.R. at Bowmanville, and the Orono Subdivision line, is expected to be arrived at in the near future.

One-Man Safety Cars, Quebec Railway, Light & Power Co.

The Quebec Ry., Light and Power Co. ordered 10 one-man cars recently from Ottawa Car Manufacturing Co. Their principal dimensions, etc., will be as follows: Length over all, 31 ft. 9 1/4 in.; length of platform, 6 ft.; length over sheathing, 7 ft. 8 in.; seating capacity, 32; height from rail to top of roof boards, with 26 in. wheel, 9 ft. 10 11/16 in.; weight, complete, 16,500 lb. They are designed for heavier traffic than the standard safety car, which has been recognized for some time as the standard one-man car. Their construction will be practically an adoption of the one-man car, but they will have two doors at each end, instead of one. They are to be of steel construction, side sills 3 x 3 x 1/4 angle, girder plates no. 13 gauge patent levelled, 1 1/2 x 1 1/2 x 3/16 T section, side post letter boards to be of no. 16 gauge, steel underframe to be constructed of standard steel sections as light as possible, consistent with rigidity and strength. The vestibule knees are to be 7 in. channel. Following are particulars of the special equipment, etc.: Seats, wood slat, reversible type; seat metal fittings, Ottawa Car Manufacturing Co.'s standard pressed steel; trucks Canadian Car & Foundry Co.'s safety type; seven windows on each side of body and 2 in vestibule, all standard size, glass being commercial sizes; curtains, double-faced Pantasote, with spring plug rollers; buzzer system control from 500-volt trolley; heaters, Cutler-Hammer type; window guards, wire mesh, specially designed for Quebec conditions; six exhaust ventilators in roof; Crouse-Hinds headlights at each end; grab handles and dividing rails of aluminum tubing, containing 1 3/4% manganese; trolley retrievers at each end; one illuminated destination sign in each vestibule; four Ohio air sand traps in each car; H. B. life guards at each end of car; hand brakes, Ackley no-staff, one on each platform; marker lamps over center vestibule window; Westinghouse motors and air brakes, standard safety car, with all safety features of improved type; interior finish, cherry, naturally finished; headlining and wainscoting 1/4 Agasote.

From the Toronto Globe: "Amid the general congratulations to the managers and directors of the Canadian National Exhibition, the men behind the Toronto Transportation Commission should not be forgotten."

Ottawa Electric Railway Co's Offer to the City.

Canadian Railway and Marine World for September referred briefly to a proposal made by Ottawa Electric Ry. Co. to the city council, for a settlement of affairs between the company and the city. We have since received a copy of the letter sent by Major F. D. Burpee, the company's Manager, to the mayor, which on account of its importance and undoubted interest to other companies is given in full as follows: "I beg to acknowledge receipt of your letter of Aug. 10th in which you ask under what franchise agreement, other than a flexible fare contract, would this company be willing to undertake the extensions and improvements of the street railway system, recommended by Mr. Fuestel in his report last year; what would be the longest period of time the company would obligate itself to operate under fixed fares; and what fixed fares would it agree to operate under over that period.

"To undertake to provide a good car service at a fixed price for a long term of years involves many risks which we would be foolish to accept unless the fares were fixed at a rate that would permit us to make provision to meet circumstances which cannot be foreseen today. We assume that what the citizens desire from the street railway is a good service and one that can be relied upon to be permanently good. If under such a contract conditions beyond our control at some future time were such as would make the fixed rates of fares not sufficient to pay the full costs of the service, bankruptcy must follow, and the continuation of good service become impossible. This contingency was evidently in the minds of those who drafted the act in 1920 under which your corporation is enabled to acquire and operate the street railway system in Ottawa, as clauses 6 and 7 of that act give you the right to regulate and fix fares, should the revenue derived from the operation of the railway fall short in any year of the amount required to provide for the cost of operating the railway, its maintenance and upkeep, renewals and replacements, and the full payment of the capital invested and interest thereon. In providing such a safeguard in the Ottawa Transportation Act the corporation wisely protected the city against the system having to be operated at a loss at some future time if the city purchased the railway. Should this company be any less careful in protecting its shareholders from loss or its patrons from poor service?

"It is evidently the desire of a majority of Ottawa citizens that the street railway system should continue to be operated by this company under a contract along the lines of the present franchise. To carry out their wishes, as expressed by the ballot in Jan., 1922, and at the same time give to this company some reasonable measure of protection for the future, I beg to lay before you the following proposal. That the agreement entered into in June, 1893, between this company and the city, under which the street railway now operates and which has automatically been renewed until Aug. 1928, continue in effect, with the following amendments to be embodied in a supplementary agreement: "That this company have the exclusive right to operate within the limits of the City of Ottawa, electric cars on metal tracks, or any other vehicle which might be used as a

public passenger carrier on which a fare is charged, except those chartered for special trips such as taxis or cabs. We do not object to motor busses doing an interurban passenger business between Ottawa and other towns, such as Kemptville, Prescott, Rockland, Morrisburg, etc. but such should not be permitted to handle local business within the limits of Ottawa. That clause 49 of the 1893 agreement, under which we sell 8 tickets for 25c, good during certain hours, be cancelled. That the special agreement entered into in 1899 under which we sell 7 tickets for 25c, good on Sundays only, be cancelled. That clause 18, granting us exemption from taxation, except the usual assessment on real estate, be made to apply as long as the contract exists. We are satisfied that this does so apply, but you evidently do not agree with this view. That clause 11 of the schedule to the 1893 contract, that there shall be a conductor as well as the driver on each car be cancelled, and the company permitted to use at its option one-man cars where these can be efficiently employed. We would have no desire to use such equipment on lines where the traffic is heavy, nor to instal them in such numbers as would cause any employe to lose his position on that account. In this connection I respectfully refer you to your street railway expert's report in which he points out the importance of using this effective means of keeping down the costs of operation and maintaining the five cent fare. Employees operating such cars would be paid at an increased rate of wages.

"That the following extensions recommended by Mr. Fuestel be undertaken by this company, the construction to be concluded before Aug. 1928: A double track line on Laurier Ave. between Elgin St. and Nicholas St., the corporation to provide the required width on Laurier Ave. for such tracks by moving the north sidewalk. The north track on Queen St. to be connected with the east track on Elgin St. by a curve at the junction of these streets. Double tracks in Ottawa East over the Pretoria Ave. bridge, on Hawthorne and Main Sts. to Clegg St., with a single track loop on Clegg, Glenora and Herridge Sts. Pending the removal of the crosstown tracks this extension could be connected with Bank St. by Pretoria Ave., which would save the great expense of deepening and widening the Elgin St. subway; the company to erect a suitable shelter and concrete stairway at the extreme end of its Elgin St. loop so that Ottawa East passengers could transfer from this extension to Elgin St. with little inconvenience. A double track line on Bronson Ave. from Gladstone south, with a single track loop on Findlay, Muriel and Center Sts., the corporation to extend Muriel St. from Center to Findlay for this purpose. As a level crossing with a steam railway is dangerous and undesirable and probably would be objected to by the Board of Railway Commissioners, we suggest that the tracks on Gladstone Ave. from Bronson west and on Bell St. to Powell Ave. remain in operation and that this line be extended south via Powell and Bronson to Findlay. Double tracks on Rideau St. from Charlotte to the city limits to connect with the proposed Eastview extension. Double tracks on Beechwood Ave. from Creighton St. to Springfield Road, with a single track loop on Beachwood Ave., Butternut

Terrace, Maple Lane and Springfield Road. A single track line on Ruskin from Holland Ave. past the new civic hospital to Fairmount and on Fairmount to Wellington. The city to extend Ruskin Ave. through to Fairmount and to make any changes necessary in the railway bridge over Fairmount Ave. which carries the Canadian National Rys. track. It is possible this structure might require no alterations whatever for single track operation. Double tracks on Wellington St. from Preston St. to the junction of Wellington and Somerset at Garland's corner, when the Wellington St. viaduct is rebuilt by the city. Any other extensions to be built by arrangement with the corporation as required, or failing an agreement, to be referred to arbitration.

"The company to provide a sufficient number of cars as are necessary from time to time for the efficient operation of the service.

"The city, under the agreement of 1893, would still possess the right to purchase the street railway property at the end of each 5 year period in accordance with the terms already set forth in sub-sections 4(a) and 4(b).

"The fares, which under the proposed supplementary agreement, would be as follows: Adults 5c, children 3c, school children 20 for 50c; after midnight, 10c, to be fixed until Aug., 1928. The company to have the right prior to Aug., 1928, to notify the city if it considers that these rates of fare are not sufficient to maintain a good service, when the rates of fare to prevail during the next 5-year period beginning in Aug., 1928, will be open for adjustment with the city. If no agreement can be arrived at satisfactory to both parties, the matter to be referred to the Board of Railway Commissioners, whose decision shall be accepted as final. May I call your attention to the fact that fares could only be changed at the end of each 5 year period, if the company could prove to an impartial referee that it was necessary; and at the same time the city, if it desired, would have the right to purchase.

"We will be prepared at any time desired to further discuss this matter with such committee as you may appoint to arrange the minor details. This proposal is not made as a preliminary step to bargaining for a future agreement, but represents the best we can do in order to get street railway matters in Ottawa on a permanent and satisfactory basis."

The city council's street railway committee met, Aug. 29, to consider Major Burpee's letter, and it was decided that each member of the committee be provided with a copy of it, that 300 copies of the Fuestel report be printed, and that the company be asked for a statement showing its earnings for the last year. The committee, after a general discussion, adjourned to meet again, when called by the mayor. No further meeting had been held at the time of writing (Sept. 14).

Winnipeg Electric Ry. is, a press report says, having two motor buses built, one at its shops at Fort Rouge, and the other by a Winnipeg builder. Is was stated at a meeting of the civic improvements committee, Sept. 6, that it was expected to begin the bus service on Cathedral, Scotia and Inkster Sts. on Sept. 20.

Toronto Transportation Commission's Activities.

Track Work.—The Commission has now completed all the heavy track repairs incidental to the rehabilitation of the street railway system, and in future track work will be restricted to current maintenance and extensions. At the time of writing (Sept. 20) maintenance work is being done on Lappin Ave., between Lansdowne Ave. and Dufferin St., on Gerrard St., between Greenwood and Coxwell Aves., and on St. Clair Ave., for 1,000 ft. west of Avenue Road.

Toronto Suburban Ry. City Line Rehabilitation.—Details of the draft agreement providing for the taking-over by the city, for operation by the Transportation Commission, of the T.S.R. city lines are given elsewhere in this issue. We were officially advised recently that if the agreement is signed in time to put these lines under the Commission's control before Oct. 1, they will be rehabilitated this year, but if not, their rehabilitation cannot be gone ahead with until next spring.

Parliament St. Track Extension.—A deputation waited on the Commission on Sept. 5 and asked that the double track line on Parliament St. be extended north to Bloor St. viaduct. The commissioners stated that if the deputation would get a petition asking them to abandon the Winchester St. line, and provided the Commission could get the appropriation, it would extend the Parliament St. line. The petition was obtained, and it is expected that funds will be forthcoming for the Parliament St. extension, in which case work will be gone ahead with at once. The Winchester St. line is merely a spur extending for some three blocks east of Parliament St.

Hillcrest Yard Fencing.—The Commission invited tenders, to Sept. 24, for construction of wooden fencing around its large repair shops and stores buildings at Davenport Road and Bathurst St. The fencing will be of the same type as that built around the Eglinton car house property by Lundy & Co., Toronto, and that now being built around the Roncesvalles car house property by the same firm.

Repair Shops Auxiliary Buildings.—The Commission has given a contract to Sullivan and Fried, Toronto, for the construction, for \$145,000, for 4 buildings auxiliary to the repair shops now being built at Bathurst St. and Davenport Road. The buildings will be as follows: 1. Two story office building, 82 x 51 ft. It will have a steel frame, and will face Bathurst St., being north of the main entrance to the yard. It will provide accommodation for the superintendent of rolling stock and his staff, and time-keepers, and also contain the employment office and the first aid room for the shops. 2. A garage, west of the office building. It will be one story, 140 x 51 ft., and will have steel frame and brick walls. 3. A building for storage of sand, salt and charcoal, 113 x 45 ft., with a wing 62 x 18 ft., to contain apparatus for sand blasting. 4. A frog shop, of steel frame and galvanized iron sheathing construction, 62 x 40 ft., with a 22 x 40 ft. brick office addition, for the track maintenance staff.

Russell Car House Office Building.—The Commission has given a contract to Witchall & Son, Toronto, for building a one-story office building at the Russell car house, Queen St. East., for \$35,000.

Equipment Deliveries.—All passenger

rolling stock ordered by the Commission has been delivered, the last cars to be received from the Canadian Car and Foundry Co. arriving late in August, and the last from the Ottawa Car Manufacturing Co. arriving Sept. 17. The Commission now has passenger equipment in operation as follows: new motor cars, front entrance, side exit, 350; new trailers, side entrance and exit, 225; p.a.y.e. double truck cars taken over from Toronto Ry., and now being remodelled, 351; Birney safety cars taken over with Toronto Civic Ry., 25; one-man two-man double truck cars from same source, 13; single truck two-man cars from same source, 8; double truck two-man cars from same source, 24; single truck cars taken over from Toronto Ry., 66; total, 1,062. It is planned to equip the King St. route with new cars in the near future.

Royalties on Cars.—As stated in Canadian Railway and Marine World for August, a writ was issued at Osgoode Hall on June 22 by Peter Witt, Cleveland, Ohio, and C. S. Wright, Toronto, against the Commission, to recover \$2,500 and \$150 costs, claimed for royalties of \$50 each on 50 motor cars being built by the Ottawa Car Manufacturing Co. for the Commission. The Commission was protected by the Ottawa Car Manufacturing Co., having agreed to indemnify it for all claims paid in respect of royalties, patents, etc., and we are now advised that the company has paid Messrs. Witt and Wright the royalties claimed, and that legal proceedings have been dropped.

Cars for Sale.—The Commission invited tenders recently to Sept. 21, for another lot of street cars, taken over from the Toronto Ry., for which it has no use. The cars are as follows: 52 single truck cars complete with G.E.-67 motors; 8 single truck cars complete with G.E.-1,000 motors; 9 single truck, double end operation cars complete with G.E.-67 motors; 12 double truck cars complete with G.E.-67 motors; 47 single truck trailers. These cars have been in storage at the Commission's Eglinton car house yard. The Commission will still have some Toronto Ry. cars on its hands after these have been sold. None of the cars now offered for sale, or of the Toronto Ry. cars remaining on hand, have been taken into consideration in the statement elsewhere in this article showing that the Commission has 1,062 cars in operation.

Uniforms for Platform Men.—The Commission has given a contract for about 2,500 uniform suits, for conductors and motormen, to Beauchamp & How, Toronto. The cloth will be supplied by R. Forbes & Son, Hespeler, Ont.

Canadian National Exhibition Service.—Particulars of the service arranged to provide efficient transportation service to and from the Canadian National Exhibition were given in Canadian Railway and Marine World for September. Figures now available show that in the 13 days the special cars for exhibition service made a car mileage totalling 325,000, and that 1,926,621 passengers were handled as follows: inbound to western entrance, 473,280; outbound from western entrance, 486,459; total for western entrance, 959,739; inbound to eastern entrance, 478,422; outbound from eastern entrance, 448,440; total for eastern entrance, 966,882. Comparison with exhibition attendance figures shows

that 62% of the people who attended the exhibition travelled on the Commission's special cars. The efficiency of the transportation service was universally remarked upon, and the exhibition association's appreciation of the service was expressed by J. G. Kent, Managing Director, in a letter to P. W. Ellis, Chairman, Toronto Transportation Commission.

Extensions into York Township.—Canadian Railway and Marine World for September gave particulars of the Commission's report to York Township Council on the feasibility of extending city lines into the township, construction to be paid for by the township and operation to be conducted by the Commission. We are advised that there is not much likelihood of the Pape Ave. and Coxwell Ave. extensions being built in the immediate future, because of the great probability of the secession of the eastern part of the township, into which these two lines would extend, from the remainder of it, and because the Commission's Danforth Ave. line serves the area to some extent. Bus routes north from Danforth Ave. would, it is considered, be a satisfactory arrangement. We are advised that the St. Clair, Oakwood and Runnymede extensions, which would enter the part of the township lying northwest of the city, will be voted on by township ratepayers in Jan., 1924. Details of costs of these extensions were given in our September issue.

Bus Competition Prohibited.—The Lake Shore Motor Bus Co., operating buses between Toronto, Hamilton and intermediate points, was refused a license to operate in Toronto by the police department, which has authority to issue licenses for vehicles operating for hire within the city. The company proceeded to operate on the Lake Shore Road within the city, without a license, and in competition with the Toronto Transportation Commission and the Hydro-Electric Railways' line to Port Credit. In the Toronto police courts, the company's counsel claimed that, eastbound, no passengers were picked up within the city, and that westbound, none were discharged, and that to prevent the company operating would be gross discrimination, because buses are allowed to operate on other routes within the city where there are no rail lines to compete. I. S. Fairty, solicitor, Transportation Commission, stated that the buses are fair weather conveyances, skimming the cream off the traffic, while the rail lines have heavy maintenance charges and have to give service at all times. The magistrate fined the bus company for operating without a license. It is reported that the company will appeal, and will seek to have the police department compelled to license it to operate within the city.

Motor Bus Competition.—A Detroit press dispatch of Sept. 21, says the Michigan Public Utilities Commission has ruled that it has not the power to prohibit motor bus competition with steam or electric railway service where the latter is furnishing all the service needed. The decision is the result of complaint of Grand Trunk and Detroit United lines, who will carry the case to the Supreme Court. It is a direct reversal of a decision by the Maine Public Utility Commission.

Marine Department

St. Lawrence River Winter Navigation Proposal Criticized.

By John L. Read, Captain, Car Ferry Steamship Prince Edward Island, Canadian National Railways.

[Editor's Note.—As Dimitrie Joanwici, a Roumanian, is attempting to get the Dominion Government to adopt a scheme to provide for winter navigation up the St. Lawrence River at least to Quebec, and as he is stated in an Ottawa dispatch to have asked for \$2,000,000 in connection therewith, the following article is of exceptional interest. Capt. Read has had great experience in winter navigation, and his opinions are worthy of the most careful consideration.]

Wide publicity has been given to a statement by the Roumanian engineer, Dimitrie Joanwici, that he has a secret method of keeping the River St. Lawrence open all the year round, and asking the shipping companies and the Dominion Government to co-operate in carrying out his plans. As this would cost a lot of money if undertaken, it might be well to get all the information possible on the subject, before the country is put to the expense of untold millions in an effort to upset the laws of nature, unless we are reasonably sure of success, and it is my desire to throw some light on this matter and not to be a knocker, for no one knows better than I do what it would mean to Canada as a whole, and Montreal in particular, to have an ice free port so far inland. Mr. Joanwici's statement proves that he has no hopes of success, for it says; "The ice on the shore is from 3 to 5 ft. thick" and "I am confident that by preventing the ice from forming on the bank of the river, the channel will be kept open all the winter." Naturally if he could keep the ice from forming, he would have solved the problem, but can he?

He says the channel can be made any width required, for instance, if 300 or 350 ft. are required in the spring, there would be 300 or 350 ft. less ice. This is true and only natural, but what about the ice?

He says he feels "confident" he could "prevent ice from forming along the bank of the river." If this was done, where would he get the stationary ice through which to make the 300 or 350 ft. channel he mentions?

He quotes Capt. Bernier as agreeing with him, and adds; "I may have to get both him and Steffanson, the explorer, to come to my assistance." I am not a Bernier, Steffanson or a Joanwici, but I know more about actual ice conditions in the River and Gulf of St. Lawrence than the three of them put together, and I do not hesitate to go on record as opposing the latter's scheme as being impracticable. My personal views may not carry any more weight than Mr. Joanwici's, but I propose to back mine up with facts that cannot be overlooked.

It appears strange that he proposes to demonstrate his "great secret" in the Quebec harbor, after stating; "The river is always open from Batiscan to Quebec." Rainmaker Hatfield undertook to make rain fall in the west, but he demonstrated it at a point where rain had always fallen before at times, which was lucky for him.

The suggestion to use a powerful electric cable running along the bottom of the channel, with cross bars at intervals to light it, is also open to criticism, for in my experience in the St. Lawrence

River, I have often gone up and down, when the water was so discolored that no light could possibly be seen, even with clear weather. When it is remembered that during the winter we are troubled with snow, and snow means lolly, covering the surface of the river, from an inch to a foot or more, one can readily see the difficulty of navigating with lights 35 or 40 ft. below the surface.

A serious handicap to winter navigation in the St. Lawrence, has evidently been overlooked by Mr. Joanwici, viz: the fact that if the river could be kept open by artificial means, the navigator would be troubled with conditions worse than fog, viz: vapor, so black that the eye

from Quebec to Sydney, N.S., through the Gulf of St. Lawrence, and I doubt if he ever heard of the effort to make a winter port of Gaspé, and the fact that the s.s. Gaspesia spent the winter in the Gulf where she drifted at the mercy of the winds and currents for months in a futile attempt to reach that port. Only last spring the liners could not get through the Cabot Straits for weeks after the river was open from Montreal to the Gulf, and hundreds of them had to work through the Gut of Canso and up the Northumberland Straits to get into the river. An icebreaker could go down from Quebec herself during the winter, but taking freight boats along at the same time is another matter, as I know from experience in the White Sea.

Another thing that must not be forgotten is that the ice is forming here and there all over the river, especially in the shoal water, and even if by some secret it could be kept from forming along the bank, there is no power on earth, that will stop it from collecting there under certain conditions. Take a heavy snow storm for instance, with 8 or 10 in. falling on the level, with a high wind. This would mean, with the drift from the fields along the river, at least 2 or 3 ft. of lolly over the whole surface of the water, for once it gets damp it remains, as it cannot blow away, at the same time with zero weather the damage would be done, for the lolly, running along with the current would bring up along the shore at some point or bend in the river, where it would immediately thicken up, and freeze at the same time.

I do not know where Mr. Joanwici got his information about the ice forming on the shore from 3 to 5 ft. thick, for in my 15 years experience in ice breakers I have always found it much thicker, and in the early part of the winter of 1916-17, when I left Quebec City, with the s.s. Mikula Selianinovitch (J. D. Hazen) for Archangel, Russia, I tried to land the river pilot at three different places along the river, but could not do so as the ice was over 5 ft. above the water, and when I got to Father Point I had to break into the edge of the board ice with the ship, and it was over 20 ft. thick and this was over a mile from the shore.

In 1920 at Borden, P.E.I., when we went to bed one night, the shore was clear of ice, but when we got up in the morning there was an ice barrier formed all along the shore 70 ft. thick, and if this can happen there, there is nothing to stop it doing likewise in a hundred different places along the River St. Lawrence.

Mr. Joanwici after holding out the prospects of an open river, proposes to build an immense armor dam across Belle Isle Straits and in connection with this proposition he makes two astounding statements, the first being; "This dam would be of great commercial importance, for it would furnish a direct road from Canada to Great Britain and Europe during seven months of the year, since navigation is possible only for July, August, September, October and November, and closed for seven months." The foregoing is hardly correct, for he does not

Dominion Marine Association.

Honorary President, A. A. Wright, Vice President and Managing Director, Davie Shipbuilding and Repairing Co., Montreal and Toronto.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Ltd., Montreal.

First Vice President, G. J. Madden, George Hall Coal and Shipping Corporation Ltd., Ogdensburg, N.Y.

Second Vice President, A. E. Mathews, Mathews Steamship Co. Ltd., Toronto.

Executive Committee, The President, First and Second Vice Presidents; and W. E. Burke, Century Coal Co. and Canada Steamship Lines Ltd.; W. Crawford and Yvon Dupre, Sincennes-McNaughton Lines Ltd., Montreal; L. L. Henderson, formerly of Montreal Transportation Co., honorary member; W. J. McCormack, Algoma Central Steamship Lines, Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; C. H. Nicholson, Canada Atlantic Transit Co., and Canadian National Rys. Central Region Car Ferries, Toronto; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Toronto; John Waller, Keystone Transports Ltd., Montreal; Senator L. C. Webster, Webster Steamship Co. Ltd., Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

could not penetrate it at all. We have this to contend with during cold days on the run between Borden, P.E.I. and Tormentine, N.B., where as master of the Canadian National Rys. car ferry steamship Prince Edward Island, I have ample time and opportunity to find out considerable about winter navigation. I had the same trouble when making the coast of northern Russia in the winters of 1915-16 and 1916-17. In the open ocean we do not meet with these conditions, for the whole body of water being above the freezing point tempers the atmosphere to such an extent that there is very little difference between the two, but in the river or on the coast conditions are different and the cold air off the land, meeting the warmer water, causes a vapor so thick it is impossible to see your hand before you, until the water skims over with ice, which of course stops the vapor.

But even if, as Mr. Joanwici says, he could keep the river open from Montreal to Quebec, what good would that do Canada, or even Montreal? He has evidently forgotten about the part of the route

even allow the month of June. But what is most astonishing is that in his enthusiasm over the dam, he forgot he had already promised an open river to Montreal if the Government would allow him to go ahead.

Mr. Joanwici's second statement is even worse. He says: "I studied a book written by Bill Dawson, a Canadian Government Engineer, on the survey which he made of Belle Isle Straits, extending over a few summer months, and the fall, and I observed that as regards the Straits, very little attention has been paid to the currents, under currents, field ice, icebergs and temperature, and very little study has been given to winter navigation at a temperature of from 40 to 50 degrees (whatever is meant by that), which temperature forms solid condensed ice in the Gulf of St. Lawrence and River, preventing winter navigation."

Notwithstanding the above, in which he attempted to show that Mr. Dawson's report was of little, or no value, he says: "Therefore I came to the conclusion that the remedy is to build a great armor dam across the Belle Isle Straits, 14½ miles long and 3½ miles wide, with two locks in it, 120 ft. wide." With the dam he proposed to alter the climate in Great Britain, the whole coast of Europe to be colder, and with the manipulation of these two puny locks he proposed to remedy conditions for them. This statement alone is enough to cause one to ponder.

I am not going to insinuate that Mr. Joanwici is not truthful, for he himself has admitted ignorance of the subject of the Belle Isle Straits, but I am going to say there is no truth in his contention that the Arctic current, or any part of it, goes through the Strait, and to prove my contention I am going to take the very work he says he studied, as well as such eminent authorities as Lieut. M. F. Maury, U.S.N., and Capt. D. N. Ingraham, Chief of the Bureau of Hydrography at Washington, and my own personal experience, which after all is perhaps the best thing in the world for a man to stake his reputation on.

Had Mr. Joanwici studied the reports of W. Bell Dawson, M.A., D.Sc., M. Inst. C.E., F.R.C.S., not "Bill Dawson," as he termed him, he would have learned that the currents in the Straits of Belle Isle are tidal in character. The tide tables of Canada, Eastern Coast, says: "The current in the Belle Isle Strait is primarily tidal in character. While under the control of the tide alone, it will turn regularly, and run with equal strength in each direction; the flood setting westward and the ebb eastward. But in addition to this tidal fluctuation, the water has almost always a tendency to make through the Straits in one direction more than the other. While the tidal fluctuation goes on uninterruptedly, the water is thus making a continuous gain to the westward, or to the eastward, as the case may be."

The above clearly indicates that the Arctic Current does not run through the Strait of Belle Isle, otherwise there would be a dominant current one way all the time, and that to the westward, which is not the case, for in 1894 from July 16 to 21, both inclusive, the current flowed to the eastward through the Strait, or exactly opposite to the way it would flow if the Arctic Current ran through the Strait into the Gulf. See "Temperatures and Densities of the Waters of Eastern Canada," issued by

the Naval Service Department, on pg. 23. If more proof is needed that the Arctic Current does not run through the Strait of Belle Isle, I would point out that icebergs do not come into the Gulf and pass out through the Cabot Strait as would be the case if the current did come in that way, and if there have been any, it is the exception and not the rule, and therefore does not prove anything. In the same book it is stated, on pg. 15, that the temperature taken on Aug. 13, off Bantam Bank, on the east side of Newfoundland, and quite close to Cape Race, showed 51 degrees at the surface, 45½ at 10 fathoms, and 30½ at 30 fathoms, all below the freezing point and certainly the Arctic Current making its way south, submerged, on account of its low temperature. To further prove it is this current, I refer to pg. 21, where it says: "The temperature at 30 fathoms is practically at the freezing point in all parts of this region, from the mouth of Placentia Bay to St. John's. It varied only from 30½ to 34 Fahr., and there was no change from one month to another from May to September."

To further clinch my argument that the Arctic Current does not come into the Gulf, I refer to pg. 39, where there is this reference to Bonne Bay, Nfld.: "The deep water in this bay is isolated from the open Gulf." The temperature ran from 54 degrees at the surface down to 30½, which is colder than the Gulf itself by nearly 10 degrees. When we get back to the site of the proposed dam, we find more damaging evidence against the advisability of building it, for on pg. 23, we find that on July 20 the temperature at the surface was 50 degrees; at 10 fathoms, 45; and at 30 fathoms, 40; and on July 21 it was 49 degrees at the surface, 47 at 10 fathoms and 41 degrees at 30 fathoms, or 10 degrees warmer than the water on the east coast of Newfoundland, and warmer than the water in the Cabot Straits by 3 to 5 degrees.

But altogether apart from Mr. Dawson's figures, I am satisfied there is no Arctic Current within 10 or 15 miles of the Labrador coast, for as mate and master of high powered ice breakers, I have logged it up and down the coast, on eight different occasions, without finding any current setting to the southward or in the direction that the Arctic Current flows, and as there is a cause for every effect, I will endeavor to show the cause of the Arctic Current in the first place, and then the reason why it is a physical impossibility for it to run through Belle Isle Strait. All ocean currents, of which the Gulf Stream is the best known, are nothing more or less than great rivers in the ocean, and they are due to one of two things, push and pull. It is also recognized as a fact, that when there is a current running out of any place there must be a return current of the same volume flowing in to take its place; this is true of the air as it is of water. Another fact which has a great bearing on the whole question under discussion is that hot air or water works its way up, while cold water will sink to the bottom, as can be easily proved by taking a little notice of the hot air and water systems in our houses. Another thing which cannot be disputed is, that an automobile, or ship, travelling at a high rate of speed on a calm day will make its own wind opposite to the way it is travelling. This is equally true of the earth. With the above facts well estab-

lished, we will begin at the beginning and trace the Arctic Current from its source, which lies in the Atlantic Ocean about the Equator—a funny place for the Arctic Current to originate, but it is true nevertheless. Why? Because the sun is always nearly overhead at the Equator, and it stands to reason, the air being heated by the direct rays of the sun, will rise, and colder air must come in to take its place, with the result that if the earth was not revolving we would always have a north and south wind blowing toward the Equator, to take the place of the heated air, and as there is no other place that it can come from, it must come from the north on that side of the Equator, and from the south on the south side.

On the other hand the earth is revolving at a high rate of speed from west to east, and if there was no sun overhead, this would give us a constant east wind over this part of the globe, so if we cut out the ifs, which are useless, for the earth does revolve, and the sun hovers over the Equator, we will find that the two combined, give us the northeast trades north of the Equator and the southeast trades to the south of it. The result of these two winds, blowing on the surface of the Atlantic, gives us the Equatorial Drift, which is a very wide slow moving current on both sides of the Equator, moving to the westward until it brings up against the east coast of South America, where it is deflected, the greater part of it going northward, owing to the fact that Cape St. Roque juts out into the Atlantic in 5 degrees and 29 minutes south latitude, and everything north of it follows along the northeast coast of South America, picking up the mighty Amazon on its way. Then as the current moves along on its way, due to the push from behind, it is pushed against the coast of Central America by the northeast trade wind, till it is headed up in the Gulf of Mexico, and as it cannot remain there, it seeks an outlet along the line of least resistance, which is the Florida Pass, between Key West and the Island of Cuba, but there again it meets a snag in the shape of the Great Bahama Banks, with numerous sand banks and small islands, which again throws the current, which is now known as the Gulf Stream, owing to the fact that it has just come out of the Gulf of Mexico, laden with gulf weed, moving at the rate of about 4 knots, against the east coast of Florida, causing a large bay to form between Palm Beach and Florida, and Cape Hatteras, in North Carolina, and it is the trend of the land in this bay from Savannah, Georgia, to Hatteras that forever makes it impossible for us to enjoy the comforts of a milder climate, for once an ocean river takes its direction along the arc of a great circle, nothing will divert it, excepting land, or another current flowing into it of the same density and temperature. This is where I come to the point taken by Mr. Joanwici, that the Arctic Current flows down inside of the Gulf Stream and deflects it to the southward and farther from Nova Scotia.

In this I do not agree with him for a minute, for two good reasons, backed up by facts presented by W. Bell Dawson. In the first place, for argument sake, we will admit the Arctic Current meets with the north side of the Gulf Stream at any angle you like. Every boy who has noticed a brook running into the river will have noticed that, while the brook water runs into the river water a little way, it

always turns and flows with the river, and the two waters mingle together, and never does it turn and run against the other and stronger current. To help to illustrate the action of the two streams meeting I made an admission, viz.: that the two currents were the same temperature, but as an actual fact this is not so, and here the law of nature steps in and makes it an impossibility for the Arctic Current to deflect the Gulf Stream, for there is a difference of about 60 degrees between them, the Arctic Current being the colder of the two, and therefore it must and does dive under the warm waters of the Gulf Stream. Any heating engineer will bear me out in this. Besides, we know that at Cape Race the Arctic Current is already submerged to a distance of 30 fathoms. To prove my contention that the Arctic Current does not pass down the coast of Nova Scotia, inside the Gulf Stream, I may mention that the water in the Bay of Fundy is from 2 to 4 degrees colder than the water along the Nova Scotia coast, where the Arctic Current would first have to pass, so if the Arctic Current passes down inside, then we must look elsewhere and discover the source of the much colder water we have in our bays.

But as the Arctic Current has not deflected the Gulf Stream, we will follow it along to the British Isles, where the formation of the land again splits a slice off the south side of the stream, and sends it down along the coasts of Portugal, Spain and Africa, as the Reynolds Connecting Current, and it again enters the Equatorial Current, but by far the greater portion of the Gulf Stream passes north, warming up the whole west coast of Europe, and flows into the Arctic Ocean by way of the north of Norway and along the Lapland coast, which it keeps free of ice the whole year round. It does not go down into the White Sea for the reason that there is no outlet to it, so it keeps right on into the Arctic, following the north coast of Asia, passing around the north end of Greenland, and returning through the only available channels, which happen to lie to the north of Canada, for it cannot possibly remain in the Arctic Ocean and freeze into ice, or it would soon upset the equilibrium of the earth, with dire results, and it cannot remain there, as water, as the place is already full, so there is nothing left for it but to return south again to take its place in the circulation of our sea water, and after getting properly cooled off by its sojourn in the Arctic, we find it coming out through the only outlets to that part of the ocean, for the Behring Strait has a part of the Aleutian Current flowing north through it all the time, which current also must come out with the rest.

For further proof that the Arctic Current cannot come in through the Strait of Belle Isle, we will now study the globe, and here is what we find. The Davis Strait is by far the larger of the two, and the current must get its direction from the direction of the west coast of Greenland and the east coast of Baffin Land, north of Cape Washington just south of the Arctic Circle. If we follow this direction it will be seen that the current will not hit the coast of Labrador, but that is only a part of the Arctic Current, for we also have the Hudson Strait, which opens to the eastward, or nearly at right angles to the Davis Strait, and through this strait the Arctic Current,

together with the ebb tide, runs at the rate of 10 knots, for over 50 miles in an easterly direction, till it meets with the main body of the Gulf Stream, after being in cold storage, and together they make the main current, which now carries the name of the Arctic Current, and continues to the south well off the coast of Labrador, passing to the east of Cape Race at a depth of 30 fathoms, and on over the Grand Banks, which, by the way, is a child of its own, due to the fact that the Arctic Current brings down and holds in position the icebergs till the Gulf Stream melts them down, causing a deposit of everything that will sink, such as stones and dirt carried down from the valleys of the north, where the bergs are made by the glaciers sliding down into the sea and breaking off. By this time the Arctic Current is so submerged that it has little difficulty in passing under that part of itself called the Gulf Stream, and so on south till it gradually warms up and mixes with the surface water and starts all over again.

Still another reason why it is a physical impossibility for the Arctic Current to pass through the Strait to the westward, is the same that I gave in relation to the water, only this time in connection with the winds, for the same conditions exist, namely, that if there is a constant flow of air in any direction, there must be a counter current to make good, and as we have easterly winds between the Tropic of Cancer and the Equator, it follows that our prevailing winds north of the Tropic of Cancer will be westerly, and that is the case, with the result that this also helps to keep the Arctic Current off the coast.

The reason I am so positive in my statements in regard to the Arctic Current is because I have made a personal study of the matter on the spot, while waiting to get into Hudson Strait on account of the ice. I have followed the line of icebergs from the mouth of the Strait due east almost, for over 50 miles before they started to move south. I not only studied it, but have had occasion to put my knowledge to the test, and found what I said was correct, when I got a wireless call for help, while lying in Port Burwell, waiting for the ice to clear out of the Hudson Strait, from a ship that reported she was leaking badly, from being squeezed in the ice near the Button Islands. The captain said it was hazy, but he thought he was about 40 miles south of Chidley, although he could see nothing. We figured he would be about that distance east of the Button Islands, and not south of them, and we were correct. After comparing notes he said he always thought the Arctic Current set south close along the Labrador coast. I pointed out to him that he was still in the Hudson Strait current, and he said: "I might have known that if I had only looked at the matter for myself, instead of taking the regular theory for granted as being correct."

Mr. Joanwici is correct when he says: "By closing the Strait, the entire currents of the Gulf of St. Lawrence will be changed." But in my opinion that is as far as he is right. In everything else I think he is wrong, for instead of shortening the winter, I cannot see why it would not have the very opposite effect, thereby giving us a later season in the spring by several weeks, for everyone knows ice will break up and clear out of a place where there is a strong current much quicker than it will out of a harbor or bay where there is no current.

As the Gulf is at present, we have three openings out of it. One, the Gut of Canso, opens out of the southwest corner of the Gulf. It is about a mile wide, but does not carry off very much of the ice on account of the prevailing winds being from that direction in the spring. The largest opening of the three is the Cabot Strait, opening out of the east side of the Gulf, and it carries off considerable of the ice in the southern part of the Gulf, for there is a constant outward current running out on the south side of it, owing to the Rivers St. Lawrence, Restigouche and Miramichi all draining into the west side of the Gulf, but in my humble opinion Belle Isle Strait is the safety valve of the whole Gulf, for it is 14½ miles wide and opens out to the northeast from the bottom of a very deep bay, something like a funnel, with the mouth of it open to the south, southwest and west, which are the prevailing winds at this time of year, and with a couple of days of any wind, between south and west, the amount of ice that would pass out of the Gulf through the strait would be beyond compute, but close the strait and all that part of the Gulf, lying north of a line drawn from Cape Bay, in Newfoundland, to Anticosti Island, would become one large deep bay, with very little current in it, and that running in past Cape Ray. This bay would form a pocket, and the narrow part of it would become one solid mass of ice during the winter, which would not break up till long after the river was free of ice. Then when it did break up it would be held there by the southerly winds, and be a menace to shipping passing through the Cabot Strait for weeks after it would otherwise be clear.

The Arctic Current has little or nothing to do with our long cold winters in eastern Canada, rather a bold thing to say, but true nevertheless, as I can show. I will mention a few facts that prove my conclusion is the only correct one. My contention is that our climate is due to our geographical position, and is not made colder by the presence of the Arctic Current, but on the other hand it is made warmer, owing to the fact that our shores are bathed with water above the freezing point. I claim the cold is natural to the country, the same as it is to northern Europe, the only difference being that we do not get the warming influence of the Gulf Stream and the Aleutian Current. In Canada it is much colder inland in winter, and warmer in summer, than it is on the coast, also that our extreme cold weather comes to us overland from the west and north, direct from the Arctic, partly by induction, and partly by the prevailing north and northwest winds in winter. The Weather Bureau always forecasts very cold weather in the west before it reaches us in the east, and never do we get very cold weather off the Atlantic Ocean, or at sea, unless the wind is off shore, for the water always being above the freezing point keeps the weather much milder than it otherwise would be. Fishermen tell one that if the wind is off shore and cold, all they have to do is to dip their hands in the water to warm them, which is true, because of the contrast. In this case the water is much warmer than the air.

It may be claimed that the Arctic Current causes the spring to be backward, but I cannot concede this, for as I pointed out before, the current is submerged under 30 fathoms of warmer water,

which is much warmer than the water in Lake Superior. There is no question the Atlantic Ocean has a tendency to make our spring later than in western Canada, but it also makes our autumn later, so it is as broad as it is long. The reason for both is the natural consequences due to two facts such as earth being a good conductor of heat while water is not.

At a certain period in the autumn both the land and the water are the same temperature, then the heat from the sun gets less every day, with the result that the earth cools off more quickly than the water, and the cold winds from the north soon freeze up the lakes far inland, and stops the work on the land, whereas we on the seaboard are enjoying mild weather, and for the same reason it is much colder inland, but in the spring the very opposite takes place. When the days begin to get longer and the sun stronger, the land heats up much quicker than the water. Then we get the warm southerly winds blowing over the land to the south of us, the snow melts as if by magic and the weather gets hot and dry, whereas we get our winds off the Atlantic Ocean, where the water keeps it much cooler than on land and of necessity our snow takes longer to clear away and our spring is a little later and our summer not so hot. But the best proof I know of that the Arctic Current has nothing to do with our long cold winters is the following: In the last week of Dec., 1915, and again in the first week of Jan., 1917, I left Sydney, N.S., for Archangel, Russia. We passed through Belle Isle Strait, although navigation had been closed and the lights discontinued along the coast for some time. From there we set a course for the south end of Greenland, which took us directly through the whole length of the Arctic Current, and this in January, when the Great Lakes and the River St. Lawrence were covered with ice. In all that time we never had to wear a mitt, or an overcoat, and the ship did not ice up like she would in the Bay of Fundy at the same time of year. From there we passed north of Iceland, and on to the White Sea, with mild weather all the way till we reached the Lapland coast, notwithstanding that from the time we passed Iceland we were north of the Arctic Circle, where the sun never rises for six months during our winter. Now if we had this kind of weather all through the Arctic Current from Belle Isle Strait to Greenland, how in the name of goodness can it be held responsible for the temperature in Canada, and when we consider that good thermometers will not detect any difference in the temperature of the water at a half a mile or less from a berg, how is the berg going to affect the Gulf of St. Lawrence from 300 to 500 miles away?

Canadian Watercraft Ltd. has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital, and office at Peterborough, Ont., to build boats, ships, scows, barges, etc. The incorporators are,—J. E. Grivell, B. M. Rogers, H. G. MacKiel and F. R. Muggeridge, Montreal.

The C.P.R. s.s. *Empress of Scotland*, which as mentioned in our last issue, struck an obstruction, when running between Hamburg, Germany, and Southampton, Eng., during August, being dry-docked subsequently at Southampton, was taken to Liverpool, later in the month, owing to a boiler makers' strike at Southampton.

Great Lakes Transportation Company's Bonds.

Murray & Co., and McLeod, Young & Weir Co., Toronto, bought recently \$500,000 6½% first mortgage sinking fund gold bonds of Great Lakes Transportation Co. Ltd., to mature Sept. 1, 1933, and offered them to the public at 99 and accrued interest, yielding about 6.65%. The following information is taken from a letter from James Playfair, President, Great Lakes Transportation Co.: The company was incorporated in 1914 under Dominion charter. It started with three steel steamships and has added the steamships *Glenshee*, *Glenisle*, *Glenorchy*, *Glenbrae*, *Glencairn*, *Glenlivet*, *Glenstriven*, *Glenlyon*, *Glenfinnan* and *Glenclava*. This year the *Glenelg*, *Glensannox* and *Glenrig* were added to the fleet, which now consists of 14 up-to-date lake bulk and package steel freight steamships, having a total tonnage of 66,000 tons. While increasing its tonnage on the upper lakes the company realized the importance of having a canal-size fleet to be operated from Port Colborne to the seaboard, and controls and operates *Glen Steamships, Limited*, owning a fleet of canal-size steamships. To operate this large fleet economically demands ample coaling and elevator facilities. The company, therefore, acquired in 1917 the *Midland Elevator Co.*, owning an elevator having a capacity of 3,000,000 bush. During 1922 this elevator handled a large proportion of the grain consigned to Georgian Bay ports. The company owns a large coal dock at Midland, with a storage capacity of 75,000 tons, equipped with up-to-date loading and unloading equipment. During 1922 the company handled over 1,750,000 tons of grain, coal, pulpwood, etc.

The present issue of bonds is secured by a direct and specific first mortgage on the three ships mentioned below, and, in addition, the trust deed provides that this issue will be a floating charge on all the company's assets, subject only to the authorized issue of \$1,500,000 first mortgage 7% 10-year serial bonds, of which \$1,250,000 have been issued and mature \$125,000 annually July 1, 1923-1932 inclusive. The \$125,000 which matured July 1, 1923, have been retired. The company further covenants not to place on its present fixed assets during the life of the issue now offered any mortgage other than the aforesaid serial first mortgage. The outstanding bonds of this issue will all be redeemed prior to the maturity of the bonds now offered. Following is a description of the three ships. The *Glensannox* has a deadweight tonnage of 5,300 tons and a carrying capacity of 180,000 bush. a trip. Its length is 352 ft., beam 44 ft. and depth 27 ft. The *Glenrig* has a deadweight tonnage of 4,500 tons and a carrying capacity of 170,000 bush. a trip. Its length is 326 ft., beam 40 ft. and depth 25 ft. The *Glenrig* has a deadweight tonnage of 3,700 tons. Its length is 259 ft., breadth 43 ft. and depth 25½ ft. This ship is a steel self-unloading one, built by *Midland Shipbuilding Co.* this year. It is suitable for the carriage of either coal, or crushed stone, and can unload at any port without the use of dock appliances. It can also unload part cargo to any small plant along a canal or lake front, or load direct into railway cars. The unloading apparatus will discharge 400 tons of coal an hour. This type of ship has been operated by some of the larger U.S. coal companies and has proved a great success, and

it is expected that this ship will be one of the most profitable of the fleet. These three ships have been appraised by the American Bureau of Shipping representative at \$935,000 and \$1,000,000 insurance payable to the bondholders in case of loss is carried. The classification by the American Bureau of Shipping entitles these three ships to the lowest possible insurance rates.

The company's average net earnings for the past six years derived from all its operations, after deducting depreciation, available for bond interest have been at the rate of over three and a half times the interest charges on all bonds outstanding, including this issue. Net earnings should be materially increased by the addition of the three new ships, and, in addition, interest charges decrease annually with the retirement of the serial issue. The ships owned by the company have been appraised at \$4,000,000, after allowing for depreciation, which is at the rate of \$60 a ton. This is most conservative, when compared with values either at the present time or on a pre-war basis. The combined value of the company's fixed assets on a strict appraisal basis amounts to \$4,947,493, and, in addition, the company has upwards of \$700,000 book value of other investments in ship and coal companies, which yield it a very considerable freight. The company carries \$5,100,000 insurance on its ships, payable to the bondholders in case of total loss, and \$683,000 on its other fixed assets. Total insurance carried is therefore over three and a half times all bonds outstanding. A sinking fund has been provided sufficient to redeem by maturity the entire amount of this issue, the first payment under which must be made not later than one year from the date of issue. The bonds will be acquired for the sinking fund at or under call prices, failing which they will be called as follows:—at 103 and accrued interest to Sept. 1, 1926; at 102 and accrued interest to Sept. 1, 1929, and 101 and accrued interest thereafter to the maturity of the bonds. The bonds are callable either for sinking fund purposes or as a whole at the above mentioned prices. The purpose of the present financing is to provide a portion of the funds required for the purchase of the ships *Glensannox*, *Glenrig* and *Glenelg*.

The company's executive and operating staff are composed of men who have had many years experience in transportation on the Great Lakes. The complete facilities which the company possesses for the efficient handling of grain, coal and other commodities place it in a very advantageous position for obtaining a large proportion of the lake carrying traffic.

West Coast Towing and Salvage Co. Ltd., an extra provincial company, has been licensed to carry on business in British Columbia, with office at Vancouver. It has an authorized capital of \$250,000, and a paid up capital of \$100,000, and is authorized to carry on a general transportation business by land and water, and to operate ships in inland, coastal and ocean business.

Welland Canal Navigation. — L. D. Hara, Superintending Engineer, gave notice Sept. 1, that from that date, until further notice, no ships would be allowed to enter and pass through the canal, drawing more than 14 ft.

Inland Water Freight Rates Act to be Evaded with Government Connivance.

Details of the serious situation created for the grain trade and for the country at large by the operation of the Inland Water Freight Rates Act, 1923, were given in Canadian Railway and Marine World for September. When that issue went to press, U.S. ship owners had just repeated that they would not participate in the Canadian crop movement under the act, and L. J. Boyd, Chairman of the Board of Grain Commissioners, had been reported as stating that he felt sure that a number of U.S. ships would come in. No further developments were reported until Sept. 10, when Hon. T. A. Low, who had succeeded Hon. J. A. Robb as Minister of Trade and Commerce, was reported to have stated, in answer to an enquiry, that no change had been made in the government's attitude; that Canadian ship owners were filing tariffs, but that U.S. ship owners had refused to comply with the act, and were, therefore, not carrying any grain from Canadian ports.

An Ottawa press dispatch of Sept. 11 stated that Mr. Low was in conference there on that date with the Chairman of the Board of Grain Commissioners, and Commissioner Jas. Robertson, in connection with difficulties which had arisen owing to the enforcement of the act. A Winnipeg dispatch of the same date said that anxiety concerning the transportation of the crop was increasing throughout the west, and that an endeavor was being made to get the government to modify the act, so that U.S. vessels would participate in the crop movement. Another Winnipeg newspaper of the same date stated that practically all available Canadian boats had been chartered for carrying grain from Fort William and Port Arthur, and the next day practically all daily newspapers published a dispatch dated Winnipeg, Sept. 11, stating that all Canadian boats had been "ordered"—presumably by the Government—to Fort William and Port Arthur to load grain. Another Winnipeg press report of Sept.

11 stated that Messrs. Boyd and Robertson had gone to Ottawa "because of the seriousness of the situation, and to try to get the Government to consent to a modification of the act which would allow U.S. vessels to come in."

On Sept. 11 the Board of Grain Commissioners issued a statement to the effect that ship owners need not file copies of tariffs prior to entering into contracts for the carriage of grain, as the act requires, but that they could evade the law by filing merely a record of the terms on which cargoes had been contracted for. Accompanying the notice was a specimen copy of a carriage contract record arranged to give the information desired; the most noticeable thing about it being that it provided for the charging of demurrage by ship owners.

An Ottawa press dispatch of Sept. 12 stated that Messrs. Low and Boyd had conferred at length over the situation caused by the U.S. ship owners' stand, and quoted Mr. Low as having stated that the Government and the Grain Board would not relax the regulations on any consideration. It would be noted that this was on the day after the Board of Grain Commissioners had issued its statement as to there being no necessity for filing tariffs prior to making contracts for carriage, as the act requires. Another Ottawa press dispatch of the same date, which said that the threatened disaster to the grain trade arose through the Government's interference in the lake shipping trade, stated that Mr. Boyd had warned the Government that there would be a serious blockade at Fort William by November, and this year there should be 175,000,000 bush. of grain move through Fort William before the close of navigation, while the total carrying capacity of Canadian boats in that period would not be more than 60,000,000 bush.

A Fort William press dispatch of Sept. 12 stated that the Great Lakes Transportation Co. had arranged to transfer

several of its larger boats from Fort William to Duluth immediately, anticipating the diversion to U.S. channels of fully half the amount of grain that usually passes through Fort William. The report quoted John Bell, Manager for the company at Fort William, as saying: "There is no bluff on the part of U.S. vessel owners. They have said they will stay out, and stay out they will. The only way out is for the Government to modify the act while yet there is time. As far as Canadian steamship men are concerned they are not one whit affected. As the Duluth trade develops they can carry out of there to Georgian Bay and Port Colborne, which is into their regular channel. But the U.S. will benefit enormously, for its ships can carry from Duluth to Georgian Bay and Port Colborne, without restraint from our coasting laws. Then they can carry our Canadian grain down to Buffalo and other U.S. ports. Our Canadian route suffers because if the grain starts to move through Duluth we may have a hard time getting it back again."

A Toronto press report of Sept. 13, quoted A. E. Mathews, of the Mathews Steamship Co., as saying: "My opinion is that the Government has made a mistake, and that, having made a mistake and discovered it, they should be big enough to deal with it in any way that may be necessary to bring U.S. ships in to help move the crop. Canadian ship owners are doing all that is humanly possible, but more ships must be engaged in the work if the crop is to be moved this year."

An Ottawa press dispatch of Sept. 13, the day following that on which Mr. Low was reported to have said that the regulations would not be relaxed, stated as follows: "Misconstruction of the provisions of the new lake shipping act is believed to be responsible for the reluctance of U.S. ship owners to bid for the carriage of this year's Canadian grain crop from the head of the lakes. A generous reading of the measure, enacted

Ships Registered in Canada in June, 1923.

In compiling the following lists of ships registered, steamboats and motor boats operated by engines of less than 10 h.p., are eliminated, as also are sailing ships of less than 100 tons.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, h.p. etc.	Owner or Managing Owner
150977	Cardema	Vancouver, B.C.	Old Kilpatrick, Scot'd.....1923	226.8	37.1	18.4	1559	842	187 Sc.	Union Steamship Co. of British Columbia, Vancouver, B.C.
139168	Daghild	Montreal	Sunderland, England.....1916	455.0	58.1	33.2	7888	4761	304 Sc.	Daghild Canadian Steamship Co., Halifax, N.S. [N.S.]
150475	Dominion Coaster(a)	Halifax, N.S.	Chester Basin, N.S.....1923	101.6	22.0	10.0	141	96	11 Sc.	Dominion Fisheries, Ltd., Halifax, N.S.
150336	Magic Carpet, The(a)	Sault S. Marie, Ont.	Richards Landing, Ont.....1923	49.5	20.0	3.0	36	24	10 Sc.	W. R. Lay, Richards Landing, Ont.
150837	Oakbay(b)	Montreal	Grand Quevilly, France.....1919	219.2	35.0	13.2	1265	694	109 Sc.	Oakbay Steamship Co., Montreal.

(a) Motor boat. (b) Formerly Marinier.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
150877	B.B. No. 2	N. Westminster, B.C.	Barge	New Westminster, B.C.....1923	90.0	32.0	9.0	218	218	W. Barlett, Vancouver, B.C.
150878	C.R.M. No. 1	N. Westminster, B.C.	Barge	New Westminster, B.C.....1923	88.7	34.2	9.7	236	236	Campbell River Mills, Ltd., White Rock, B.C.
150975	E.C.E. XXII	Vancouver, B.C.	Scow	North Vancouver, B.C.....1923	90.0	34.0	8.3	232	232	Evans, Coleman & Evans, Vancouver, B.C.
150976	E.C.E. XXIII	Vancouver, B.C.	Scow	Vancouver, B.C.....1923	96.2	32.8	9.3	247	247	" " " "
150879	P.T.B. No. 9	N. Westminster, B.C.	Barge	New Westminster, B.C.....1923	97.3	31.2	9.4	321	321	Westminster Marine Railway Co., New Westminster, B.C.
150972	R.P.L.V.	Vancouver, B.C.	Scow	Vancouver, B.C.....1923	80.4	30.0	7.7	157	157	Rat Portage Lumber Co., St. Boniface, Man.
150954	S. B. Hirtle	Lunenburg, N.S.	Schr.	Chester Basin, N.S.....1923	123.5	26.5	10.0	138	90	Wm. Duff, et al, Lunenburg, N.S.
141104	W. H. Pretty	Peterborough, Ont.	Barge	Welland, Ont.....1914	55.0	27.6	9.0	122	122	Minister of Railways and Canals, Ottawa, Ont.

last session, is expected to smooth the way for U.S. competition, and yesterday a U.S. carrier filed a 4c rate from Fort William to Buffalo on a ship with capacity of 365,000 bush. It has been assumed by U.S. ship owners that all lines must post their rates for each shipment on the Winnipeg Grain Exchange, whereas the new measure provides that such rates must be filed with the Canadian Grain Board. As interpreted by the latter, a telegram to the Board stating that a contract has been made, and quoting the rate, suffices to comply with the regulations. It is stated that this will be treated confidentially, while the tabulation of such rates is for the Minister of Trade and Commerce, and not for public use." Another Ottawa press dispatch of the same date said: "The liberal construction placed upon the new lake shipping act by the Grain Commission, and confirmed by the Justice Department, is expected to overcome the objection of the U.S. shipping interests and permit them taking part in the wheat crop movement down the lakes."

The general feeling in grain and shipping circles by Sept. 14 was that the Government's consent to allow the act to be evaded, as specified in the statement issued by the Board of Grain Commissioners, would induce U.S. ship owners to participate in the Canadian grain trade. A Fort William press dispatch of Sept. 14 stated that one U.S. boat, the A.E.R. Schneider, owned by the Cleveland Cliff Iron Co., Cleveland, Ohio, had been booked through J. H. Rodgers, Winnipeg, to load grain for Buffalo, and that additional cargo space for 1,500,000 bush. in U.S. ships had been contracted for, for October sailing.

Notwithstanding the feeling prevailing around Sept. 14 that U.S. ship owners would come in, members of the ship owners association at a conference in Cleveland on Sept. 17, decided that they would not participate in the Canadian crop movement, despite the Dominion Government having authorized them to evade the act to the extent indicated above. One of the owners attending this conference is reported to have said: "We are willing and anxious to carry any of the grain for which we have available capacity, but we do not feel we should be asked to put our ships in a different character of employment under conditions utterly subversive of the free, unobstructed, competitive system which has been established by ship owner, shipper and all concerned, and which has endured because it has shown itself to be the best, fairest and most convenient."

We are advised that several U.S. ship owners, non-members of the Ship Owners' Association, who did not attend this conference, will participate in the Canadian crop movement, however, and our information, from a reliable source, is at the time of writing (Sept. 20), that about 20 U.S. ships may be expected to handle grain out of Fort William and Port Arthur this autumn, under the provisions of the act as they have been anticipated up to this date.

A Winnipeg press dispatch of Sept. 13 reported A. E. Spendlove, Agent Great Lakes Transportation Co. there, as having said, in reference to the Fort William press dispatch of Sept. 12, quoted above, that there was no intention of transferring the registry of any of the Great Lakes Transportation Co.'s ships to the U.S.

A Fort William press dispatch of Sept. 17 stated that a second U.S. ship to

carry grain from Fort William had been chartered, viz., C. O. Jenkins, owned by Jenkins Steamship Co., of Cleveland, and that it was expected that two more of that company's ships would soon enter the Canadian grain trade.

A Cleveland press dispatch of Sept. 19 stated that L. J. Boyd, Chairman of the Board of Grain Commissioners, was there on that date and had an informal conference with some U.S. ship owners, and added "Nothing definite resulted, however, and there developed no change of opinion on the subject on the part of the different managers. It was suggested that the shippers file the tariffs when the charters are made, instead of the ship owners, but no action was taken along that line." The dispatch also stated that, in order to get tonnage, shippers at Fort William and Port Arthur were reported to have paid better rates than have been paid by Duluth shippers.

Canadian Government Merchant Marine Operations, Etc.

Officers of Steamships.—The following captains and chief engineers have been appointed in addition to those mentioned in previous issues.—Canadian Adventurer chief engineer, J. Hoey; Canadian Britisher, captain, W. E. Spring; Canadian Fisher, chief engineer, G. DeCotret (temporary); Canadian Otter, captain, D. M. Dickson; Canadian Runner, captain, W. E. Baker; Canadian Scottish, captain, W. H. Millar; Canadian Signaller, chief engineer, N. Farthing; Canadian Skirmisher, captain, H. S. Hilton; Canadian Trader, captain, J. B. Hickey, chief engineer, A. Brown; Canadian Warrior, chief engineer, W. P. Edwards.

The s.s. Canadian Constructor, which left Panama, Aug. 14, arrived at Auckland, New Zealand, Sept. 8, taking 24½ days, at an average speed of 11.1 knots. This is regarded as very satisfactory for a ship of this type. She and her sister, Canadian Cruiser, are the two largest C.G.M.M. ships, both having been built by Halifax Shipyards, Ltd., Halifax, N.S.

The S. F. Tolmie, the only sailing ship operated by Canadian Government Merchant Marine, and which has been on sale for some time, is reported to have been sold to The Hastings Mills, Ltd., Vancouver, B.C., for operation in the off shore trade. She was built by Victoria (B.C.) Shipowners Ltd., at the Cholberg yard, Victoria, and was taken over by the government on that company's bankruptcy, on a lien against all the company's property covering loans by the government for the building of four ships, of which the S. F. Tolmie is the only one completed.

Vancouver-Avonmouth Service.—Announcement has been made of sailings of ships between Vancouver and Avonmouth, England, as follows,—from Vancouver, Canadian Winner, Oct. 20, Canadian Prospector, Nov. 20, Canadian Seigneur, Dec. 20; from Avonmouth,—Canadian Winner, Dec. 14, Canadian Prospector, Jan. 14, 1924, Canadian Seigneur, Feb. 14, 1924.

Montreal Sailings.

London and Antwerp service.—Canadian Conqueror, Oct. 10; Canadian Planter, Oct. 24.

Cardiff and Swansea service.—Canadian Leader, Oct. 5; Canadian Victor, Oct. 19.

St. Kitts, Antigua, Barbados, Trinidad and Demerara service.—Canadian Otter, Oct. 3; Canadian Runner, Oct. 17.

Hamilton, Bermuda; Nassau, Bahamas; Kingston, Jamaica; Belize, British Honduras, service.—Canadian Forester, Oct. 19.

St. John's, Nfld., via Charlottetown, P. E.I., service.—Canadian Sapper, Oct. 4.

Australia and New Zealand service.—Canadian Miller, Oct. 26.

Vancouver, B.C., Sailings.

Australasian service.—Canadian Traveller, Oct. 15, for Melbourne and Adelaide.

United Kingdom service.—Canadian Prospector, Nov. 20; Canadian Seigneur, Dec. 20, both for Avonmouth.

The Panama Canal completed 9 years of operation Aug. 14, and during that time, 20,474 commercial ships passed through, carrying 84,284,474 tons of cargo. The opening of the canal synchronized with the commencement of the great war, and its normal use was considerably interfered with on account of the war and interruptions due to landslides, etc., until April 1916. Following this, there was a period of scarcity of tonnage, high freight rates and general financial and business uncertainties, which affected traffic considerably. The smallest traffic in any year was in 1915-16, when 729 ships passed through, paying \$2,251,433.60 in tolls and since then, there has been a consistent increase until for the year 1922-23, 4,272 ships passed through, paying \$18,975,189.06 in tolls.

Vancouver Grain Shipments.—Between May 1 and Aug. 31, 2,878,131 bush. of wheat were shipped from Vancouver, B. C., through the Dominion Government elevator, in 36 ocean ships, of which, 14, with 1,804,662 bush., were for United Kingdom ports; 5, with 448,297 bush., for European ports; 16, with 605,989 bush., for Japanese ports, and 1, with 18,462 bush., for Peru.

Ships Added to and Deducted from the Canadian Register During June, 1923.

Added	No.	Steam.—Tonnage—		No.	Sailing.—Tonnage—	
		Gross	Net		Gross	Net
Built in United Kingdom.....	1	1,559	842	.....	.....	.....
Built in British Possessions.....	13	360	231	11	1,742	1,689
Purchased from foreigners.....	3	9,168	5,461	.....	.....	.....
Transferred from British Possessions.....	.....	.....	.....	1	54	54
Other Ships.....	1	4	3	.....	.....	.....
Totals.....	18	11,084	6,537	12	1,796	1,743
Deducted						
Wrecked or otherwise lost.....	4	1,080	675	4	507	454
Broken up or unfit for use.....	2	23	15	2	214	214
Sold to foreigners.....	1	938	567	8	155	116
Transferred to British Possessions.....	.....	.....	.....	2	1,539	1,417
Totals.....	7	2,041	1,257	10	2,415	2,201

Canadian Navigation Claims Against Germany.

Hon. William Pugsley, K.C., formerly Lieutenant-Governor of New Brunswick, and now commissioner under the Inquiries Act, appointed to investigate all claims for reparation, under the treaty of peace between the associated powers and Germany, following on the great war, continued hearings through September. Canada Steamship Lines Ltd. claims for the loss of 11 steamships, as follows:—

Names	Date lost	Value	Insurance received
Midland Queen	Aug. 4, 1915	\$ 168,000	\$ 162,546
Empress of Fort William	Feb. 27, 1916	494,000	194,666.65
Empress of Midland	Mar. 27, 1916	494,000	194,666.65
Dundee	Jan. 31, 1917	464,000	305,955.57
Strathcona	Apr. 13, 1917	472,000	294,433.33
Neepawah	Apr. 22, 1917	378,000	321,200
C. A. Jaques	May 1, 1917	551,000	364,999.99
D. A. Gordon	Dec. 1, 1917	577,000	255,350.50
Armonia	Mar. 15, 1918	1,378,000	1,010,681.33
Takona	May 16, 1918	508,000	485,900
Acadian	Sept. 16, 1918	635,000	388,960
Totals.....		\$6,119,000	\$3,979,360.02

In support of the claim, the company was represented by W. F. Chipman, K.C., legal representative; R. B. Thompson, Secretary; F. C. Cuttle, Manager, Insurance Department, and F. A. Martin, consulting marine engineer and appraiser, New York. It was agreed that the amount received for insurance be deducted from the total claim, but the company desires to add to the net claim \$1,827,708.14 covering war risk premiums paid on all the company's ships, thus making the total claim \$3,967,348.12. The commissioner pointed out that he would have difficulty in allowing for the war premiums paid on all of the company's ships, as the premiums paid on ships not damaged or destroyed by Germany's illegal acts could hardly be considered as a direct liability against that country. The company claimed that had it not been for the German submarine warfare, of which the world was warned by proclamation, the war risk insurance would not have been taken out, and consequently the company would not have been out of pocket with respect to the ships not damaged. As an alternative, however, the company would present an auxiliary claim for the war risk premiums paid on the ships which were destroyed. The commissioner stated that, under the law, the company is entitled to claim the total damage for the destruction of the ships. If it were deemed equitable to deduct the insurance received, this should only be the amount of insurance, less the amount of the premiums paid out for such insurance on the destroyed ships. The section of the peace treaty concerned reads "..... Damage in respect of all property wherever situated, belonging to any of the allied or associated states or their nationals, with the exception of naval and military works or materials, which has been carried off, seized, injured or destroyed, by the acts of Germany and her allies on land or sea, or from the air, or damage directly in consequence of hostilities or of any operations of war."

Other claims are as follows: Nova Scotia Steel & Coal Co., \$7,416,680, for ships under charter torpedoed. Dominion Coal Co., \$6,014,261, as follows,—chartered steamships requisitioned, \$1,133,667; for substitution of other ships for those requisitioned, \$1,791,213; for loss on New England coal and coke contract, \$1,398,365; for loss of steamships Kendal Castle and Stigstad, torpedoed,

\$1,691,016. Dominion Iron & Steel Co., \$1,310,247, as follows,—for being deprived of the use of the s.s. Sandefjord and substituting s.s. Fram, \$203,607, for chartered s.s. Storstad, torpedoed, \$1,106,640. Dominion Steel Corporation, \$825,079, for general risk premium. Hero Steamship Co., for s.s. Scottish Hero, torpedoed, \$760,000. St. Lawrence Steamship Co., for s.s. Morwenna, torpedoed, \$201,500. Turret Steamship Co., \$89,334, for s.s. Turret Court taken over by British Ministry of Shipping. Overseas Shipping Co., Halifax, N.S., \$1,000,000.

On the Dominion Coal Co's claim for \$1,133,667 for chartered steamships requisitioned by the Admiralty, Hector McInnes, K.C., explained that specially built ships had been found necessary for the trade, and nearly all of the steamships were built for the company under long time charters. The British Government had requisitioned them, owing to their outstanding ability as carriers, and very serious results happened to the company on account of the loss of their services. The company had to go into the market and obtain substitute ships of an inferior type, and, as a result, its business in the St. Lawrence fell off. In 1914, the company carried 1,863,000 tons of coal to Montreal, which traffic dropped to 47,000 tons in 1918, with a rise in the following year to 203,000 tons. The commissioner again called attention to the section of the treaty under which compensation could be claimed only with respect to damage directly in consequence of hostilities, or of any operation of war, and he questioned whether it was a direct damage when Great Britain exercised her discretion in requisitioning the ships. It was contended on the company's behalf that the ships were of necessity taken by the Admiralty to carry on the war operations, and that if Great Britain had reimbursed the company when it made a claim, that claim would have been included in the British claim against Germany. Great Britain had not, as a matter of fact, paid the company anything. The owners of the ships had been paid, but the ships were under charter to the company, and had been taken by Great Britain without compensation to the charterers, who were powerless to resist the action, and therefore the loss sustained by the company was a direct consequence of the war. In reply the commissioner stated that the loss sustained by the company was not direct damages, but had two causes, first, the war, and, secondly, the exercise of Great Britain's discretion in selecting the company's ships, and he felt that the losses were changed from direct to indirect. He would, however, see that the claim was represented properly to the government.

Several other claims are being dealt with, including the C.P.R.'s, for losses suffered when the company's Antwerp offices were seized by Germany, and also by relatives of several victims of the Lusitania tragedy, including one from Lady Montagu Allan, who was a passenger on that ship, when two of her daughters were drowned. The last-mentioned claim was postponed until the spring, as members of the family are abroad.

Australian Government Ships.—A Sydney press dispatch says that 25 ships of the Commonwealth Line are being sold, and that only the best tonnage is being retained by the Government system.

Additional Grain Elevator Capacity at Vancouver.

The Vancouver Harbor Commissioners are having an extension built to the no. 1 elevator, which has been handed over to them by the Dominion Government, for operation, and are also going on with the erection of no. 2 elevator. The extension to no. 1 elevator will add 750,000 bush. to the capacity, making a total capacity of 2,000,000 bush. It is being built immediately east of the existing elevator, on the south side of Burrard Inlet. The principal material is reinforced concrete, and complete elevating, cleaning and weighing machinery will be installed. The plans were prepared by John S. Metcalf Co., Montreal and Vancouver, and the contractor is the Pacific Construction Co., Vancouver B.C. No. 2 elevator is being erected on the north side of the C.P.R. tracks, on the south side of Burrard Inlet, between the Ballantyne pier and the Great Northern Ry. wharf. It will have a capacity of 1,500,000 bush., and be of reinforced concrete, fully equipped with car unloading, elevating, cleaning and weighing machinery, as well as other shipping facilities, including the installation of special cargo cranes on the Ballantyne pier, with grain conveyors. Plans were prepared by John S. Metcalf Co., Montreal and Vancouver, and the contractors are the Northern Construction Co. and J. W. Stewart, Vancouver, construction is proceeding.

The Woodward Elevator Co., which was building an elevator at Burrard Inlet, under an agreement with the Vancouver Harbor Commissioners, suspended operations at the end of August, on the ground that the assistance to be provided by the commissioners under the agreement, was not forthcoming. It appeared that the commissioners had agreed to buy the site for the elevator, and to lease it to the elevator company, the amount required being \$200,000. It was stated that the purchase could not be completed until the transaction had been confirmed by the Dominion Government. This, it is reported, has now been done, and construction is proceeding.

The O. J. Klein Transportation Co., Montreal, has bought through the Anderson Company of Canada, from H. A. Foster & Co., the steam screw driven tug Gwennith. She had been lying at Belleville, Ont., for some time, and after the sale left for the lower St. Lawrence Gulf. The same company has also bought the schooner Leon L. from Lachance Ltd., Quebec, Que., and we are advised that these two ships, as well as other equipment which the company is buying, will be used in the pulpwood trade. The Gwennith was built in Holland in 1910, and has a steel hull of the following dimensions: Length 85½ ft., breadth 18½ ft., depth 9½ ft. She has a flush deck, and has fresh water tank and salt water equipment. The propelling machinery consists of triple expansion engines with cylinders 11, 18 and 30 in. diam. by 14 in. stroke, supplied with steam by a Scotch marine boiler, 10 x 10 ft., fitted with 2 furnaces, surface condensing, etc. The deck machinery includes winches and windlass, and there is also steam steering gear, and a full equipment of life boats, etc., according to the Marine Department's rules. The company has been incorporated under the Dominion Companies Act, with \$50,000 capital and office at Campbellton, N.B.

Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties:

Drowning of a Deck Hand from s.s. Kingston.

Held at Toronto, Aug. 16 and 18, by Capt. L. A. Demers, Dominion Wreck Commissioner, into the drowning of W. J. Price, a deck hand on s.s. Kingston, Aug. 4, in Lake Ontario, about 6 miles from Toronto. Francis King, K.C., represented Canada Steamship Lines, Ltd., and J. R. Robinson, Jr., appeared for the man's relatives. The court's report stated that the evidence was, in many respects, contradictory, indicating that confusion existed among the passengers and spread to the crew. The second officer, who was on the side of the ship from which the man fell, though he did not see him fall, on hearing the cry of man overboard, omitted to throw a lifebuoy, but gathered his men and started immediately to launch a boat, which last action was commendable. The captain, on rushing to the bridge, with the knowledge that a man was overboard, instead of immediately ringing full speed astern, hard astarboarded the helm, thinking the ship could be brought quicker to where the man would be, not knowing that the engines had been stopped. In the circumstances which existed, the proper course was full speed astern with a hard to port helm, thus bringing the ship into a position for a clear view, and offering a lee for the launching of the boat. The evidence did not show that there was any delay in getting the boat from her chocks, but some delay did occur in leaving the ship's side, owing to the slight leeway. Life belts were thrown by passengers. The throwing of a lifebuoy by the second officer would have been a matter of form, but in this case, ineffective. In view of the speed of the ship, the time taken to have the boat clear and under way, shows that action was taken promptly after the casualty became known, and that both the Kingston and her lifeboat cruised in the supposed vicinity of the man, for 50 minutes, indicates that proper action was taken. On the question of boat drill, which is an important routine on a passenger ship, it was not clearly proved that it was done on every trip, or once a week. The court realized the difficulties which shipowners, agents and superintendents are under in view of the frequent changes of crew, which renders a system of discipline impossible. No blame can be attached to the owners for the existence of a situation hitherto unheard of, and for which, for the present, no remedy can be applied. All deck hands were warned not to stand on the outside of the ship, and anyone taking a perilous position on his own initiative does so at his own peril. The occurrence was unfortunate, but the evidence was clear that there was no necessity for him to take an unsafe position to perform his work. The captain and officers were, therefore, relieved from any responsibility in the matter. While the court was of the opinion that there was confusion, and that some bad judgment was shown by the captain, momentarily, at the outset, it expressed the opinion that it did not retard operations for the launching of the boat, and that there was no carelessness or indifference, nor

undue delay shown in attempting to rescue the man, and that the fatality, in view of the evidence, was accidental. It found that the captain erred in judgment at the outset, but rectified his error promptly, and he was cautioned as to the necessity for an ever existing presence of mind; that the drowning was accidental, due to the man's daring and disobedience to a warning he had received previously, or otherwise in choosing a position which was deemed unwarranted. The court did not impeach anyone for indifference or neglect. The ship was well equipped with lifebuoys and belts, and in view of existing conditions, was as well manned as possible.

Edward L. Strong—Glendochart Collision.

Held at Montreal, Sept. 11 and 12, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. J. O. Grey and C. Lapierre, as nautical assessors, into the collision between the George Hall Coal & Shipping Corporation's s.s. Edward L. Strong, and Glen Steamship's s.s. Glendochart, in the Cornwall Canal, between locks 17 and 18, July 8, when the former ship sustained some damage. Capt. W. J. Mills, of the Edward L. Strong, stated that when about a quarter of a mile from a barge, which was tied to the Government wharf, he sounded a one blast signal to a steamship which had been passing the bridge, but received no response. Later, when about 100 ft. from the Glendochart, he sounded the alarm signal and went full speed astern. The current, which was estimated at a mile, was with him, and his speed was 3 miles. The danger signal was given when about a ship's length above the barge. At that time he gave full speed ahead, then full speed astern, his ship's bow coming into contact with the Glendochart's port bow. Capt. W. J. Hawman, of the Glendochart, stated that he took the wheel after leaving the bridge and heard the Edward L. Strong's signals, but did not reply, owing to certain regulations, which, he stated, exist, prohibiting the sounding of whistles in the vicinity of the hospital. His ship was going about 1½ miles at dead slow, the collision happening about 150 ft. above the barge Valencia. There was ample room for the Edward L. Strong to pass, and the Glendochart's engines had been stopped for 4 or 5 minutes. He stated that the Edward L. Strong collided with his ship, whereas his log reads: "We collided with s.s. Edward L. Strong." The Glendochart's wheelsman stated that the master, being uncertain as to the safety of passing the barge, took the wheel from him, and that had he been in charge, he could not have done worse. He also stated that the engines were going, whereas the captain stated that they had been stopped 4 or 5 minutes. The engines' movements could not be confirmed by the engineer. The court held, that by not answering the Edward L. Strong's signals, which he was expected to do, notwithstanding that they were in the vicinity of a hospital—the promulgation of rules to the contrary not having been proved—and proceeding, and in view of the barge Valencia being moored to the Government wharf, limiting the space, and attempting to head off the descending ship, Edward L. Strong, the captain of the Glendochart showed a wilful disregard of ordinary prudence. The Edward L. Strong, on account of the cur-

rent, had the right of way, and indicated that by the one blast signal, which the court stated it rightly presumed, was intentionally disregarded by the captain of the Glendochart, this being proved by the fact that he took the wheel from an experienced man. The court, therefore, in view of the unjustified action, found Capt. W. J. Hawman, of the Glendochart, in default, and suspended his certificate, no. 864, for one month, from Sept. 12 to Oct. 12. The certificate of Capt. W. J. Mills, of the Edward L. Strong, was returned to him, and he was advised that in future, though he may have the right of way, it may depend on the evidence, whether he is justified in availing himself of that privilege when by so doing his ship may be placed in a position of danger.

Mainly About Marine People.

Joseph Battle, who was mayor of Thorold, Ont., at different times for 8 terms, and as a railway and canal contractor, owned and operated a number of tugboats on the Welland Canal, died at Thorold, Sept. 18, aged 62. A few years ago he had both legs amputated.

Hon. L. P. Brodeur, Minister of Marine and Fisheries in the last Laurier Government, and since then a justice of the Supreme Court of Canada, is reported to have resigned from the bench, and it is stated that he will be appointed Lieutenant Governor of Quebec, succeeding Sir Charles Fitzpatrick, whose appointment expires October 1.

Capt. Walter Campbell, President and General Manager, Detroit and Windsor Ferry Co., Detroit, Mich., died at his summer home, on Peche Island, in the Detroit River, Sept. 9, aged 72, after a long illness.

F. W. Cowie, formerly Chief Engineer, and latterly Consulting Engineer, Montreal Harbor Commissioners, has been appointed an expert adviser of the Hampton Roads Commission, Virginia, to aid in preparing a report and recommendation for the expansion and development of the port.

Capt. Walter Hose, C.B.E., R.C.N. Director of the Naval Service, has been promoted to Commodore, and has left Ottawa for England to act as an adviser to the Prime Minister and other members of the Dominion Government at the Imperial Conference.

Frederick W. Hyndman, Lloyd's Agent at Charlottetown, P.E.I., who died there, Sept. 9, aged 82, entered the Royal Navy in 1856 and served in 1867 on the Victory, Nelson's old flagship. He was for a time in hydrographic survey work in different parts, including Alexandria, Egypt, and the Mediterranean. He was present at the opening of the Suez Canal in 1869. He retired from the navy in 1870, and returned to Prince Edward Island, when he founded the fire and marine insurance firm of F. W. Hyndman & Co.

Capt. John A. Willett, who had been in the Dominion Coal Co's service for over 20 years, latterly as master of the s.s. Corunna, died in the Montreal General Hospital, Sept. 4, aged 57.

Ogilvie Flour Mills Co., Montreal, is going to apply for an extension of its powers, to include, among other things, the operation of ships.

General Ship Building Matters Throughout Canada and Newfoundland.

Canadian Vickers Ltd., Montreal, did the following repair work during August,—at the Maisonneuve plant, for Canadian Government Merchant Marine,—Canadian Runner, 3,091 tons, docked Aug. 10, for owner's and underwriters' repairs, including damage due to grounding, and bottom painting, undocked, Aug. 19; s.s. Canadian Seigneur, 5,758 tons, docked Aug. 14, for owner's and underwriters' repairs and bottom painting, undocked Aug. 16; s.s. Canadian Spinner, 5,758 tons, docked Aug. 24, for owner's and underwriters' repairs and bottom painting, undocked Aug. 30. For Mathews Steamship Co., Toronto, s.s. Yorkton, 1,772 tons, docked Aug. 2, for owner's and underwriters' repairs, including extensive bottom damage requiring 42 new shell plates, 20 shell plates treated and over 100 floors, frames and webs faired, renewed and otherwise treated, undocked Aug. 22. For Canada Steamship Lines Ltd., s.s. Oatland, 1,854 tons, minor repairs. For W. A. Phillips, s.s. John Shaw, 1,487 tons, sundry repairs. For Montreal Harbor Commissioners, s.s. Sir Hugh Allan, 354 tons, new propellers. For U.S. Shipping Board, s.s. Aledo, 4,768 tons, docked Aug. 20, for owner's and underwriters' repairs and bottom painting, undocked Aug. 24. For Glen Line Ltd., s.s. Glenlinnie, 1,930 tons, docked Aug. 22, for owner's and underwriters' repairs, including bow and bottom damage, requiring 2 new shell plates, 7 shell plates treated, repairs to stem, fender and internals, also bottom painting and withdrawing tail shaft for inspection, undocked Aug. 30. For Furness, Withy & Co., s.s. Wyncote, 4,937 tons, temporary repairs. In addition, the following repairs were done in the company's harbor department,—for Canada Steamship Lines Ltd., s.s. Edmonton, 2,214 tons, voyage repairs; s.s. Hamilton, voyage repairs; s.s. Oatland, 1,854 tons, two new smoke stacks; s.s. Thunder Bay, testing dynamo; s.s. Mapleboro, 1,141 tons, repairs to wire compressor on deck; s.s. Mapleheath, 1,692 tons, voyage repairs. For U.S. Shipping Board, s.s. West Campgaw, 5,565 tons, voyage repairs; s.s. West Kebar, 5,620 tons, repairs to dynamo. For Norwegian American Line, s.s. Idefjord, 4,250 tons, and s.s. Tanafjord, 5,640 tons, voyage repairs. For Anchor-Donaldson Line, s.s. Argalia, 5,214 tons, installing exhaust fans in ventilators; s.s. Concordia, 5,388 tons, s.s. Corinaldo, 6,900 tons, and s.s. Cassandra, 8,135 tons, voyage repairs. For Clark Steamship Co., s.s. Gaspesia, voyage repairs. For Saguenay Securities Ltd., s.s. Thomas B., 199 tons, voyage repairs. For Globe Transportation Co., s.s. Pabjune, supplying oak hatch beams and repairing hatch coamings. For John K. Haaland, s.s. Thomas Haaland, 3,127 tons, repairs to hull. For C. H. Jagels, s.s. Spindrift, voyage repairs.

The steel motor car ferry boat which has been built by Canadian Vickers Ltd. for the Norway Bay Ferry Co. has the following dimensions: length 61½ ft., breadth 19 ft. 8 in., depth 6¾ ft. The steel hull and bulwarks and engine seating, suitable for a semi-Diesel oil engine, oil fuel tank and certain parts of the hull equipment only, were made by the builders, the remainder of the work including machinery installation, and launching is to be completed at North Bay, Ont., under a separate contract. An interesting feature of the builder's contract, was

that the boat was only partly rivetted, and then dismantled and shipped in three sections on railway flat cars to North Bay. She was designed by Walter Lambert, Naval Architect, Montreal, who supervised the construction.

Cholberg Shipyard, Victoria, B.C.—C. Cholberg, owner of the shipyard, at which Victoria (B.C.) Shipowners Ltd. was to build sailing ships under special aid from the Dominion Government, of which only one was partially built when the company failed, has been in Ottawa negotiating with the Government for the purchase of its material lying at the yard. A press report states that the Government has received an offer of practically double the amount offered by him, and that he is stated to have refused permission to anyone to use the yard for the removal of the material. The Justice Department is reported to have advised that the only action for the Government to take would be to foreclose the mortgage against the plant. It was stated later that the Government was willing to negotiate any reasonable settlement which would provide a reasonable value for its material and reimburse it for the additional expense it had been forced into on account of Mr. Cholberg's action. It is reported that a proposition had been received from some persons in Victoria, for carrying on a boat building business at the plant during the winter.

Meteghan, N.S.—The keel of a steamship to be named D. J. Purdy, was laid at Meteghan, N.S., early in September. It is stated that she will be equipped for burning oil, and will be completed for operation on the St. John River, next spring.

Newfoundland Dockyards Ltd., St. John's, Nfld., has completed repairs on the s.s. Prospero, which ran on the rocks near Green Pond in Dec., 1922. The repairs included a new stem, 40 ft. of new keel, over 20 new plates at the bow, and the renewal of the forepeak and no. 1 tank and a new deck. The general repairs are reported to have cost about \$25,000 and the new deck an additional \$8,000. The Navigazione Generale Italiana's s.s. Vesuvio arrived at St. John's, Sept. 9, with her steering gear out of order, and, after having repairs made, resumed her journey, from Gaston to Montreal, with coal.

Port Arthur Shipbuilding Co., Port Arthur, Ont., has obtained a contract for building some steel towers for the hydro electric power line between Port Arthur and Cameron Falls, some 80 miles. It has also a large order for pulp mill machinery for Great Lakes Pulp & Paper Co.

The Algoma Central Steamship Line's s.s. J. Frater Taylor was docked during September, for survey and repairs, consisting chiefly of the removal and replacing of about 30 plates. She will be followed in the dock by the Northern Navigation Co.'s s.s. Noronic, for a general survey.

Prince Rupert Drydock and Shipyard, Prince Rupert, B.C., did the following repair work during August,—for Canadian Government Merchant Marine, s.s. Canadian Farmer, docked for cleaning, painting and general overhaul, in connection with annual inspection. For Grand Trunk Pacific Coast Steamship Co., s.s. Prince George, docked for changing 2 propeller blades. It also overhauled 25 fishing ships. Work was com-

menced on building two 60 ft. cruisers, with wooden hulls, for the Marine and Fisheries Department. They are to be equipped with semi-Diesel engines, and are to be ready for operation by Jan. 1, 1924.

Victoria Machinery Depot Co., Victoria, B.C., has completed reconditioning the Union Steamship Co. of British Columbia's s.s. Chilliwack, and she has returned to service. The repairs included re-tubing and recovering the boilers, new furnaces, general overhauling, and a number of improvements, as well as cleaning and painting.

A self discharging barge, of a somewhat novel type has been built in England recently, and shipped to Takoradi, Gold Coast, West Africa, for use in building the breakwater there, for which Stewart and MacDonnell of Canada, are consulting constructional engineers, for the Crown Agents for the Colonies. Three more are to be built. They are arranged with trimming tanks along each side, and the hull is divided into 4 compartments by 3 transverse bulkheads. The tanks are arranged so that the bottoms are higher than the flotation level of the barge when light. When the deck cargo is loaded, the barge is taken to the dumping site, and sluice valves are opened to admit water to the tanks on the side it is desired to discharge from, thus automatically tipping the barge to such an angle as is necessary to shoot the cargo overboard. The barge, thus being lightened, rises, and the tanks are emptied automatically.

Detroit & Cleveland Navigation Co's New Ships.—The first of the two sister steamships being built for the D. & C. N. Co., work on which started last autumn, was launched at Lorain, Ohio, Sept. 15, by American Shipbuilding Co. The hull will be towed to Detroit, Mich. where superstructure will be built, interior decorations finished, engines installed and the ship made ready for service on the Detroit-Buffalo line next summer. The sister ship is expected to be launched before the end of the year. Each ship will be nearly 550 ft. long, and about 100 ft. wide amidships, will carry a crew of 300, and have cabin accommodation for about 1,200, also space for automobiles and express freight weighing over 1,000 lb. The total cost of each ship will, it is reported, be about \$3,500,000.

The Belchers Steamship Co. Ltd., Montreal, has been granted supplementary letters patent increasing its capital stock from 2,000 shares without nominal or par value, to 2,000 shares without nominal or par value, and 1,400 shares of preferred stock of the par value of \$100 each, provided that the capital with which it carries on business shall be \$150,000. The company owns the s.s. Belchers, formerly War Hamilton, which was built at Toronto in 1919. She is screw driven by engine of 148 h.p. Her dimensions are,—length 251 ft., breadth 43.6 ft., depth 20.7 ft.; tonnage, 2,251 gross, 1,353 net.

Esquimalt Drydock.—We are officially advised that the contract for supplying pumping and other machinery for this drydock, which is being built for the Dominion Government, has been awarded to Hodgson, King & Marble, Vancouver, B.C.

Atlantic and Pacific Oceans.

The s.s. *Empress of India*, owned formerly by the C.P.R., and operated in its trans-Pacific service, which was sold to the Gaekwar of Baroda, during the war, for use as a hospital ship, and renamed *Loyalty*, is reported to have been sold for about \$32,000 to Scindia Steam Navigation Co. for breaking up.

Manchester Liners Ltd. is reported to be about to establish a direct steamship line between Manchester, Eng., and British Columbia ports, in addition to its present service to Atlantic ports. C. A. Harrison, Manager, Manchester Consignments Ltd. was stated to be visiting Vancouver recently to open direct trading on a proposition to make advances against first class products.

The s.s. *Empress of Japan* which the C.P.R. has been offering for sale, subsequent to her recent withdrawal from the trans-Pacific service, is reported to have been sold for use as a Canadian Oriental Exhibition ship. It is stated that the interior will be remodelled to make room for booths displaying Canadian merchandise, and that she will visit various oriental ports for exhibition purposes.

A press report from Southampton, Eng., states that the *White Star* and *Cunard Lines* have entered into an agreement for a joint trans-Atlantic steamship service during the winter, with the steamships *Majestic*, *Berengaria* and *Aquitania*. The *Mauretania*, *Olympic* and *Homer* will be overhauled during the winter, and some attempts made to increase the speed of the *Cunard* steamships, over the present 26 knots. It is stated that the s.s. *Homer* will be equipped for burning oil.

As a result of the disastrous earthquake along the Japanese coast early in September, steamship companies have been compelled to cease landing cargo at Yokohama and Tokio, on account of the conditions prevailing there. The C.P.R. s.s. *Empress of Australia* which was in Yokohama harbor at the time, lost her propeller in the tidal wave, which followed the earthquake, but otherwise did not suffer any material damage. The s.s. *Empress of Canada*, which was en route to Yokohama, and with which it was at first reported impossible to communicate, was unharmed, and both ships engaged immediately in relief work, chiefly in transferring victims to hospitals at Hong Kong, etc. The Japanese steamship companies were advised not to accept freight or passengers destined for either Yokohama or Tokio until further notice and shipments already on the way to those ports, were discharged at Kobe at shippers' risks and expense.

Maritime Provinces and Newfoundland.

The s.s. *Sable I*, owned by Farquhar and Co., Halifax, N.S., which ran ashore at La Maline, Nfld., about the middle of August, and which was refloated Aug. 23, ran ashore again the same day, during a heavy gale, was refloated Aug. 24, and proceeded to St. Pierre under her own steam.

The Portuguese cruiser *Carvalho* Arago ran on the rocks at La Manche, Nfld., Aug. 31, and sustained considerable damage to her bow below the water line, and also to her keel, several plates being also damaged. She was drydocked at

St. John's, Sept. 3, for examination and repairs.

The Lurcher Shoal lightship, off Yarmouth, N.S., was removed from the station during the latter half of September for necessary repairs, and is expected to be replaced during the latter part of October. In the meantime her station is marked by a gas buoy painted red and showing an occulting light.

The Dominion Marine Department has established an automatic radio fog alarm at Cape Ray, Nfld., which will prove a valuable aid to navigation for ships entering Cabot Strait, during foggy weather. The signal is a series of 3 flashes, transmitted for 1 minute, followed by 4 minutes silence. The wave length is 1,000 meters, and tests indicate that the signal has a maximum range of 100 miles.

Beazley Bros., marine contractors, Halifax, N.S., are reported to have bought the s.s. *Strandhill*, recently laid up in Bedford Basin, Halifax, and it is stated that they have fit her out for salvaging the guns from the H.M.S. *Raleigh*, which was wrecked on the Labrador Coast last year. It is stated that they have a contract with the British Government for salvaging the guns and delivering them in England, at \$20,000 each. There was 5 large guns aboard the *Raleigh*, and several smaller ones, and with good weather prevailing, the contractors do not anticipate any difficulty in doing the salvage work.

Province of Quebec.

The Railways and Canals Department has given a contract for improving the upper entrance to the *Rapide Plat* Canal, to A. W. Robertson Ltd., Montreal.

The British s.s. *Twickenham*, while bound from Sydney, N.S., to Quebec, with coal, Sept. 4, collided with the pier and shed 25, in the St. Charles River, Que., damaging her bow, and also some plates under the water line. The casualty was caused by the breaking of the lines between the ship and her tug.

The new channel leading to St. Helen Island wharf, in the Montreal harbor, is marked by a series of black and red spar buoys, and mariners using the main ship channel are cautioned to keep well to the westward, or outside of the outer black spar buoys, as they are placed in shoal water, and do not mark the east edge of the ship channel. These buoys are placed expressly for the use of the St. Helen Island ferry.

The Bay Line Steamships' s.s. *Birchbay*, which ran ashore in the Richelieu Rapids, Aug. 8, abandoned to the underwriters, and later offered for sale by them, has been sold, together with her cargo of coal, to St. Lawrence Transportation Co. It is said that the ship is to be salvaged for further operation. She was built at Cleveland, Ohio, in 1882, and was originally named *Harry E. Packer*, and was later bought by the Webster Steamship Co., Quebec, Que., and renamed *Eric W.*

Canadian American Bureau of Trade has been incorporated with \$20,000 authorized capital, and office at New York, N.Y., to carry on business as shipping agents, with S. Graham, 31 Nassau St., New York, as its attorney. E. B. Bechan, B. W. Harris and T. R. Fleming are its incorporators.

Ontario and the Great Lakes.

The St. Lawrence River at Prescott was reported, on Sept. 4, to have reached its lowest level for many years, having dropped 2 ft. below normal.

The Public Works Department received tenders to Sept. 20, for the building of a storage annex to the Dominion Government's grain elevator at Port Colborne.

The Dominion Marine Department received tenders to Sept. 10 for breaking ice in Port Arthur and Fort William harbors, Thunder Bay, and Lake Superior, for five years.

The Dominion Public Works Department will receive tenders to October 4, for the construction of 478 ft. of the superstructure of the east pier of the eastern channel, Toronto harbor.

The Dominion Public Works Department had given O'Brien and Martin, Port Arthur, a contract for dredging berths at wharves at Fort William, class B, at 46c a cub. yd. place measure.

The first Welland Canal's first sod was turned Nov. 30, 1824. It is proposed to take steps to erect a cairn in commemoration of the event on the celebration of the centennial next year.

The shipbuilding yard at Bridgeburg, Ont., operated formerly by Canadian Allis-Chalmers Ltd., is reported to have been sold to the Dupont interests for manufacturing pulp on a large scale.

The s.s. *Robert L. Fryer*, owned by Henderson Transfer & Lighterage Co., Fort William, has been leased to M. Sellers & Son, grain merchants, there, for transferring grain to and from the elevators at the head of the lakes.

Traffic on the Welland Canal was interfered with, Sept. 20, when the s.s. *Weybar*, downbound, grounded on the aqueduct at Welland, owing to low water. She was released in about 3 hours, 8 ships being held up before she could be refloated.

Glen Steamships' s.s. *Glenarm* struck an uncharted object and sank near Port Dalhousie, Lake Ontario, Sept. 14, but was refloated the next day, after a quantity of her cargo of grain had been lightered. She then proceeded to Kingston.

The Toronto Harbor Commission's bill against the city, for \$70,000, for the preparation of the rapid transit report in 1914, has been referred by the board of control to the City Solicitor, Finance Commissioner and Works Commissioner, for a report.

The U.S. barge *James Cahill* ran ashore near Dunkirk, while en route from New York to Cleveland, via the State Barge Canal, early in September, and was refloated by John E. Russell's steam tug, J. L. Russell, after her cargo of nitrate was jettisoned.

The schooner *Maple Leaf*, which has been used in the Bay of Quinte trade, has been bought by B. Grimshaw, Kingston, for carrying grain between Kingston and Bay of Quinte ports. She was built at Bronte, Ont., in 1886, her dimensions being: length 70 ft., breadth 18.5 ft., depth 5.4 ft., 59 tons net.

The National Sand & Gravel Co's s.s. *Charles Dick*, struck an obstruction in the Welland Canal, about 2 miles from Welland, when down bound, Sept. 20, and damaged some plates, causing a leak which necessitated her tying up and shifting cargo, before proceeding to Thorold, where an examination of the damage was made.

The United States Lake Survey reports the mean stages of the Great Lakes in feet above mean sea level for August as follows: Superior, 602.06; Michigan and Huron, 579.76; St. Clair, 574.61; Erie, 571.70; Ontario 245.41. Compared with the average August levels for the past 10 years, Superior was 0.67 ft. below; Michigan and Huron, 1.20 ft. below; Erie, 1.08 ft. below; and Ontario, 1.15 ft. below.

The Northern Navigation Co's s.s. Noronic was held at Port Arthur, Sept. 19, owing to a broken propeller. The passengers were transferred to the company's s.s. Hamonic, Sept. 20, en route to Sarnia. A Port Arthur press dispatch of Aug. 21 said that the Noronic would be towed to Superior, Wis., for repairs, as soon as her flour cargo of 2,100 tons was unloaded, as the Port Arthur Shipbuilding Co. had not a vacant berth.

Press reports state that the Public Works Department's District Engineer at London has been instructed to prepare plans for building a pier at the east end of Port Stanley harbor, at an approximate cost of \$50,000, that an entrance is to be left from the east between the pier and the breakwater, and in addition to this, work on a portion of the west pier is to be removed for deepening and widening the harbor channel.

The George Hall Coal and Shipping Corporation's s.s. John B. Ketchum II., when passing through the Lachine Canal at the end of August, was caught in a wave caused by the collapse of the two upper gates of lock 1, and was washed through the lower gates into the harbor. Repairs were made and traffic resumed Sept. 1. A preliminary enquiry indicates that the gates were not properly closed, and that the ship was in no way to blame.

The Spanish River Pulp & Paper Mills Ltd. is reported to have prepared plans for a new slip and wharves at the mouth of Fort Creek, Sault Ste. Marie. It is said that the new way will be 600 ft. long and 200 ft. wide, and will run inland to about 100 ft. from the Algoma Central & Hudson Bay Ry. tracks; that the estimated cost is between \$300,000 and \$400,000, and that in addition there will be considerable dredging, costing about \$100,000, which will be done by the Dominion Government.

The Dominion Public Works Depart-

ment received tenders to Sept. 27 for reconstruction of south pier at Burlington Channel, Ont., involving building a retaining wall for 489 ft. The work consists of removing the old face piling and such stone, cribwork necessary to permit the driving of H beam main piles, timber sub-face piles, placing walings, stringer, block and tie rods, as well as concrete superstructure in practically the same alignment, refilling and grading with earth or other suitable material at the back of and to the top of the new concrete wall.

The Kirkwood Line Ltd., Montreal, has bought the s.s. Vaneyck, from Belgian owners, for service between Toronto, Montreal, Quebec, Halifax and St. John, in conjunction with the s.s. Greypoint. The Vaneyck, formerly J. H. Plummer, was owned formerly by Canadian Northern Steamships, Toronto, and later by Canada Steamship Lines, Montreal. She was chartered for overseas service in 1917, and subsequently sold to Belgian parties. She was built at Low Walker, England, in 1903, and is screw driven by engine of 210 h.p. Her dimensions are: length 246 ft., breadth 37 ft., depth 21.8 ft.; tonnage, 1,582 gross, 992 net.

The Reid Wrecking Co's s.s. Advance, laden with 57,000 bush. of wheat, from Port Colborne to Montreal, grounded in the narrows three miles west of Alexandria Bay in the St. Lawrence River, Sept. 20, was refloated and arrived at Prescott, where her cargo was reloaded. The Sarnia City and the barge Brighton of the Reid Wrecking Co. went to the assistance of the Advance and released her, lightening her cargo, which was taken to Prescott on the barge Brighton. Low water is believed to be partially responsible for the accident.

The Dominion Public Works Department received tenders to Sept. 20, for the construction of a section of the Bare Point rubble mound breakwater in the main harbor (north), at Port Arthur. This section will be about 2,000 ft. long, 32 ft. below, and 7 ft. above, the water line. The width at the bottom will be 126 ft., at the water line 30 ft., and at the top, 14 ft. The quantity of stone will be about 375,000 tons. The existing breakwater extends from Bare Point along the main harbor for 5,150 ft., 1,850 of which was completed in 1922. The extension will be a continuation of the line of the existing breakwater, along the main harbor, allowing for an entrance into the harbor of 500 ft., between the

end of the 1922 extension and the new extension.

The s.s. Watkins F. Nisbet, the last of the 10 steamships built in Great Britain for the Eastern Steamship Co. for the grain trade between Buffalo, Port Colborne and Montreal, was launched towards the end of August at Birkenhead, Eng. It was the original intention that this ship, together with the others ordered at the same time, should have been ready and in operation during June, but some delay occurred in the shipbuilding yards. She is a sister ship of the s.s. Nisbet Grammer, with hold capacity of about 130,000 cub. ft. grain measurement, on a mean loaded draft of 14 ft. and equipped for a speed of 10 knots. Her dimensions are: Length b.p. 253 ft., breadth over plating 43 $\frac{1}{4}$ ft., depth moulded to upper deck 20 ft.

Manitoba, Saskatchewan, Alberta and Northwest Territories.

Press reports state that construction will be commenced during the winter on a breakwater at Chipewyan, Lake Athabasca. There is no actual harbor there, and boats have at times been compelled to shelter in the river for several days during high winds. The work will, it is stated, be done under Dominion Government engineers, and the breakwater will be of logs which will be brought down stream. Its dimensions will be about 150 ft. long by 30 ft. wide, and it will probably be enlarged later.

Preparations were made during September for the closing of navigation on the northern rivers and lakes, so far as far northern points are concerned. One of the Northern Trading Co.'s motor boats, with a scow, sailed from Fort Norman, early in the month, for Aklavik, this being the last sailing of the season for the Arctic. The company's s.s. Northland Trader, on her arrival at Fort Smith, later in the month, was berthed for the winter, while the motor boat Northland Pioneer made another trip to Fort Rae, and the auxiliary powered schooner Speed is scheduled to sail from Fort Smith about Oct. 10, for Fort Resolution. The Alberta and Arctic Transportation Co.'s s.s. Distributor arrived at Fort Norman early in September from the north and was berthed for the winter. The company's motor boat Lady Mackworth was scheduled to make her last trip for the season, from Fort Smith to Fort Resolution and Fort Rae, at the end of September, or early in October.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during August:

Articles		Canadian Canal	U.S. Canal	Total	
Lumber	Eastbound	M. ft. B. M.	7,281	36,922	44,203
Flour	"	Barrels	645,290	846,610	1,491,900
Wheat	"	Bushels	1,604,205	7,971,442	9,575,647
Grain, other than wheat.....	"	Bushels	2,370,200	6,414,675	8,784,875
Copper	"	Short tons	2,520	5,077	7,597
Iron Ore	"	Short tons	2,912	10,481,946	10,484,858
Pig Iron	"	Short tons	1,006	2,650	3,656
Stone	"	Short tons	400	2,670	3,070
General Merchandise	"	Short tons	2,164	4,858	7,022
Passengers	"	Number	6,301	4,043	10,344
Coal, Soft	Westbound	Short tons	21,566	2,557,659	2,579,225
Coal, Hard	"	Short tons	9,982	222,741	232,723
Iron Ore	"	Short tons	.....	37,408	37,408
Manufactured Iron and Steel..	"	Short tons	7,641	2,928	10,569
Salt	"	Short tons	1,398	7,719	9,117
Oil	"	Short tons	2,515	37,785	40,300
Stone	"	Short tons	.....	134,287	134,287
General Merchandise	"	Short tons	36,873	36,816	73,689
Passengers	"	Number	6,116	4,205	10,321
Summary		Number	524	2,814	3,338
Vessel Passages		Net	785,759	9,804,337	10,590,096
Registered Tonnage		Short tons	186,059	11,049,667	11,235,726
Freight—Eastbound		Short tons	79,975	3,037,343	3,117,318
Westbound		Short tons	266,084	14,087,010	14,353,044
Total Freight					

Welland Ship Canal Construction.—A. J. Grant, chief engineer, Welland Ship Canal, who addressed the Rotary Club, St. Catharines, Ont., recently, is reported to have stated that with a 25 ft. draft, the canal would when completed, be capable of passing 95% of the ships now engaged in ocean trade. In connection with the construction, 22 bridges will be built, 13 of which will be highway ones. In the course of construction, 41,000,000 cu. ft. of earth excavation is necessary, and 8,000,000 cu. ft. of rock excavation, and approximately 30% of this excavation is completed. Of concrete work, of which approximately 3,000,000 cu. yd. will be required, 30% is completed. It is anticipated that locks 1 and 2 will be finished before the winter; locks 6 and 7, with their entrance piers, are 43% finished.

British Columbia and Pacific Coast.

The C.P.R. s.s. *Princess Patricia* commenced her autumn schedule of four trips a day between Vancouver and Nanaimo, Sept. 15.

The Union Steamship Co. of British Columbia is reported to have ordered a day passenger steamship in Montrose, Scotland, for early delivery.

Furness Withy and Co.'s s.s. *Tuscan Prince* which was wrecked off Austin Island, Barkley Sound, Feb. 15, and was considered a total loss, has been sold to Alaska Junk Co., Bellingham, Wash.

The Consolidated Whaling Corporation reports that on the whole, the whaling season has been good, the company's ships being kept busy during the season, which will end about the middle of October.

The motor tugboat *Lucienne*, which was bought by Wallace Shipbuilding and Drydock Co., North Vancouver, recently, from Dutch owners, and brought out from Holland, has had her name changed to *Norshore* and has been registered at Vancouver.

The s.s. *Selkirk*, operated by Frank Waterhouse & Co., ran ashore at Hearst Island, off Vancouver Island, at the end of August, and has been declared a total loss. She carried supplies to various canning factories on the coast. She was built at Victoria, B.C., in 1898, and was screw driven by engine of 12 h.p. Her dimensions were: length 95.6 ft., breadth 24 ft., depth 7 ft.; tonnage, 142 gross, 86 net.

Puget Sound Navigation Co. is reported to be having a motor car ferry built for operation across the Strait of Juan de Fuca, between Port Angeles, Wash., and Victoria, B.C. It is said that she will be equipped with a Diesel engine and make at least two round trips a day, and that there will be accommodation for 23 automobiles. This route is now being served by the s.s. *Sol Duc*.

Negotiations are said to be proceeding between Vancouver City Council and the C.P.R., regarding the provision of a fire-boat for use in the harbor. A committee is reported to have taken the matter up with F. W. Peters, General Superintendent, British Columbia District, C.P.R., and it is said that the company may provide a boat, with captain and engineer, provided the city supply the hose crew.

Furness, Withy and Co.'s s.s. *Siberian Prince*, which ran on the rocks at Bentinck Island a few weeks ago, has been refloated and taken to Esquimalt for general examination and survey. She is stated to be considerably damaged, the rocks having penetrated through the bottom to the depth of 20 ft., and shell plates having been forced through the tank tops. It is expected that tenders for repairs will be asked shortly.

The port of Vancouver, according to a press report, shipped during the first 7 months of this year 149,370,838 board feet of lumber, compared with 98,277,515 in the corresponding period of 1922. The Orient was the largest customer, consuming 9,000,000 feet more lumber this year than last, or a total of 69,096,000 ft. In the shingle business there was an increase of 700,000 bundles, totalling 1,327,729 bundles exported, compared with 597,891 in 1922, the greatest market being the Atlantic coast, which absorbed 1,290,071 bundles.

Dominion Marine Association's Executive Committee Meeting.

The Dominion Marine Association's executive committee held its regular monthly meeting in Montreal, Sept. 12, those present being the President, T. R. Enderby, G. J. Hadden, W. J. McCormack, J. Waller and A. A. Wright.

Consideration was given to the Inland Water Freight Rates Act, 1923, and reports were made as to the situation, particularly with reference to the compliance of members with the act's requirements and to the continued refusal of United States owners to enter the Canadian grain trade on account of them. After full discussion it was determined to let matters take their course at present and to take no action at that meeting.

The breaking of gates in the Lachine Canal on Aug. 29, and the delays permitted to take place in the repair work, were then considered at the instance of the President, who had already communicated with the department at Ottawa during the course of the work. It was resolved to ask for an investigation, in order that provision may be made for the future, so that when other accidents occur traffic may be resumed with the least delay possible.

Correspondence was read relating to the improvement of the Morrisburg Canal upper entrance, a letter having been received from the Comptroller of the department, advising that the Association's recommendation for the moving of the lock farther down the canal had been considered by the department's engineers, who stated that they could not recommend it. It was decided to renew the recommendation and to ask for a statement of reasons from the department as to why it could not be accepted.

The regulations of June, 1923, with reference to drinking water for use on ships were again considered. Instances were cited regarding the difficulties to be encountered in making the requested changes, and the meeting expressed the feeling that members of the Association should have been consulted before the adoption of the regulations. It was resolved to ask that their enforcement be deferred pending some consultation, and in order that opportunity might be given for the necessary installations to be made without requiring docking during the navigation season.

An ice breaking contract was reported to have been made with the Canadian Towing & Wrecking Co. upon the expiration of the previous five year contract in July last. The expired contract was considered, and it was decided to ask for a copy of the new one for consideration at the next meeting, and to express the hope that previous recommendations had been incorporated.

Correspondence regarding the improvement of the Belleville-Prince Edward bridge was considered, the Public Works Department's District Engineer having asked for opinions as to navigable width of span required. Certain particulars had been procured, but the meeting decided to ask for further details with reference to the location of the work proposed, and the protection to be afforded, before expressing an opinion as to the navigable water required.

Consideration was given to low water levels prevailing in the lakes and St. Lawrence, and it was decided to communicate again with authorities at Ottawa, particularly with the Railways and

Canals Department, calling attention to the Association's protest regarding the Chicago Drainage Canal, asking for opportunity to consider any plans proposed, and urging action.

It was decided to interview the Minister of Marine at an early date, to ask for the abolition of compulsory payment of pilotage dues below Montreal, and for this purpose it was agreed to hold the next regular meeting of the committee in Ottawa in October, if the Minister could then receive a deputation.

Tonnage statements were considered, with special reference to the requirement that each member enroll the full amount of his tonnage, and it was decided to revive the question at the next meeting, when it was hoped all members will be present. Suggestions were made as to the new members and directions were given for further correspondence with parties already contemplating enrollment or likely to be interested.

Hydrographic Survey Work for 1923.

We are advised that the Marine Department's Hydrographic Survey has been operating the s.s. *Acadia*, under Capt. F. Anderson, in the southwest approach to the Bay of Fundy, to obtain accurate sounding for the use of ships entering St. John, N.B., harbor in thick weather. The s.s. *Bayfield*, under Mr. Fraser, has continued its survey of the waters surrounding the Magdalen Islands, in the Gulf of St. Lawrence. The s.s. *Cartier*, under C. M. Savary, is charting the western approach to the channel, north of Anticosti Island, as a continuation of his work down the St. Lawrence River. The s.s. *Lillooet*, under H. D. Parizeau, was engaged for the greater part of the season in surveying the southeast approach to Hecate Strait, in the vicinity of Aristizabel and Banks Islands on the Pacific coast. During the earlier part of the season, before the fine weather set in, he completed the chart of the entrance to Victoria and Esquimalt harbors, swept the first narrows, Vancouver harbor, and attended to various other small surveys required in connection with the development along that coast. The s.s. *Restless*, under Commander Knight, has continued the survey of the Seaforth channel and Gunboat Passage, much of which was done last year.

Labrador Gold Fields Ltd., which was incorporated about a year ago to develop gold claims on the Labrador coast, that are reported not to have materialized, was placed in liquidation by order of the Superior Court at Montreal, Sept. 11, on the ground of lack of assets. The company arranged an ambitious scheme for development of the claims, which involved the transportation from Canadian and U.S. ports of a large number of men and material, for which considerable investment was made in steamships by outside parties.

The United States Shipping Board, according to a London, Eng., press dispatch, has decided to part with a very considerable part of its merchant ships, and is in negotiation with a well known British ship breaking company, for the sale of certain ships, aggregating 10,000,000 tons. It is stated that the ships to be sold are all steel, and would have to be in fit condition to cross the Atlantic under their own power.

Canadian Pacific Railway Ocean Steamship Services.

The s.s. Montclare arrived at Quebec, Sept. 7 with 1,734 passengers, 590 being cabin and 1,144 third class. This is stated to be the largest number of passengers brought to Canada on any ship during 1923, the second place being held by the White Star-Dominion Line's s.s. Doric, which on one trip brought 1,712 passengers.

Following the accident to the s.s. Empress of Scotland, when she struck an obstruction between Hamburg and Southampton, towards the end of August, the company chartered the Ellerman Line s.s. City of Paris, to take some of the Canadian passengers, who had booked on the s.s. Empress of Scotland. Other passengers for Canadian points travelled by the Majestic, Resolute and Melita.

The s.s. Montreal which had not been in service for some little time, is reported to have been chartered by the British Government to embark British troops at Constantinople. She sailed from Glasgow, Scotland, Sept. 14 for Turkey. The s.s. Marglen is also reported to have been chartered by the British Government for the movement of Indian troops, and sailed from Southampton, Sept. 14.

The s.s. Empress of Canada, running between Vancouver and the Orient, is, it is reported, to have the Todd system of oil burning equipment installed, consisting of 60 burners. A similar system, consisting of 42 burners, was installed in the company's s.s. Empress of Australia, last year. The work will be done at Seattle, Wash., on the return of the ship from the Orient in October.

The company has issued its winter steamship schedule, showing 40 sailings out of St. John, N.B., an increase of 6 over last winter. The winter season there will be opened with the sailing of the s.s. Montclare for Liverpool, Dec. 7, followed by the s.s. Melita for Cherbourg, Southampton and Antwerp, Dec. 13, the s.s. Montcalm for Liverpool, Dec. 14, and the s.s. Marloch for Belfast and Glasgow. All these ships will land passengers on the other side in time to celebrate Christmas at their respective destinations.

Canal Traffic Statistics.

The Dominion Bureau of Statistics, Transportation Branch, has issued the following summary of canal statistics for July:—

Sault Ste. Marie.—14,389,161 tons of freight passed through the Canadian and U.S. locks at Sault Ste. Marie during July, 1923, an increase of 4,154,676 tons over July, 1922. As in June, the increased traffic in coal and iron was the contributory factor to the betterment. During July, 14,284,720 bush. of Canadian grain from Fort William and Port Arthur, consisting of 10,617,935 wheat, 1,479,580 oats, 1,204,808 barley, 36,523 flax and 945,874 rye, were shipped through the canals, 10,816,772 bush. to Canadian ports, and 3,467,948 to U.S. ports. Canadian bottoms transported 12,977,978 bush. and U.S. bottoms 1,306,742.

Welland.—Traffic for July was 125,897 tons greater than for July, 1922. The principal increases were in grains, coal and sand.

St. Lawrence.—740,963 tons of freight were carried in July, against 638,844 in July, 1922. Rye, pulpwood and coal

showed the chief increases, while corn and petroleum registered decreased traffic.

All Canada.—The aggregate freight traffic on Canadian canals from the opening of navigation to July 31, 1923, was 4,677,050 tons, an increase of 446,441 tons over the same period of 1922.

Navigation Aids on Great Lakes and St. Lawrence River.

All Canadian lights and fog alarms on Lake Superior will be kept in operation until the close of navigation, on Dec. 14 at 6 p.m., when the Sault Ste. Marie canals will be closed for the season, with the exception of Caribou Island, which will be closed Dec. 5; Otter Head, Daviaux, Quebec Harbor, and Michipicoten Island, east end, which will be closed Dec. 10, and Ile Parisienne, which will be closed Dec. 12. All Canadian lights and fog alarms on Lake Huron, Georgian Bay, Lakes St. Clair, Erie and Ontario, and connecting waters, will be maintained in operation until the close of navigation, except the southeast shoal light-ship, Lake Erie, which may be moved after Dec. 1, and also Lonely Island light, Georgian Bay, which may be closed before the general close of navigation. All Canadian lights on the St. Lawrence River will be in operation until the close of navigation. All gas buoys and other floating aids to navigation will be kept in position as long as ice conditions will permit, and in cases where it is necessary to remove gas buoys before the close of navigation, the more important points will be marked by spars.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Crude Oil Engine Co. of Canada, Montreal, has been appointed Canadian and Newfoundland distributor for British Kromhout oil engines for marine and industrial purposes, and is represented at Vancouver by J. Lockhart.

Hydro Salvage Syndicate, Niagara Falls, Ont., which is operated by Canadian Equipment Co. and F. H. Hopkins and Co., Montreal, has issued in book form a sales inventory of the construction equipment accessories and supplies released by the Hydro Electric Power Commission of Ontario from the Queenston-Chippawa development, and which the Syndicate still has for sale.

Transportation Meetings, Etc., in 1923 and 1924.

The names of persons given below are those of the Secretaries, unless stated otherwise:—

Oct. 8 to 12.—American Electric Railway Association, Atlantic City, N.J. J. W. Welsh, 8 West 40th Street, New York, N.Y.

Oct. 9, 10.—Canadian Tickets Agents' Association, Montreal. E. de la Hooke, London, Ont.

Oct. 16 to 18.—American Railway Bridge and Building Association, Seattle, Wash. C. A. Lichty, Chicago & Northwestern Ry., 319 North Waller Avenue, Chicago, Ill.

Oct. 17 to 20.—American Society of Civil En-

gineers, Richmond, Va. J. H. Dunlap, 33 West 39th Street, New York.

Nov. 6 to 9.—Association of Railway Electrical Engineers, Chicago, Ill. J. A. Andreuccetti, Chicago and Northwestern Ry., Chicago, Ill.

Dec. 4.—National Association of Railway and Utilities Commissioners, Miami, Florida. J. B. Walker, 49 Lafayette St., New York, N.Y.

Dec. 10 to 12.—American Association of Port Authorities, New Orleans, La. T. S. McChesney, New Orleans.

Jan. 15 to 17, 1924.—American Wood Preservers Association, Kansas City, Mo. P. R. Hicks, 1146 Otis Building, Chicago, Ill.

Jan. 17, 18.—National Association of Railway Tie Producers, Kansas City, Mo. J. T. Penny, T. J. Moss Tie Co., St. Louis, Mo.

March 11 to 13.—American Railway Association, Division IV, Engineering, Chicago, Ill. E. H. Fritch, 431 South Dearborn St., Chicago.

March 13, 14.—American Railway Association, Division IV, Signal Section, Chicago, Ill. H. S. Balliet, 30 Desey St., New York, N.Y.

April.—American Railway Association, Division VII, Freight Claims, New Orleans, La. L. Pilcher, 431 South Dearborn St., Chicago.

May.—Association of Railway Claim Agents, West Baden, Ind. H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

May 14 to 16.—American Railway Development Association, Savannah, Ga. W. H. Hill, Agriculture Agent, New York Central Rd., Chicago, Ill.

May 20 to 23.—Master Boiler Makers' Association, Chicago, Ill. H. D. Vought, 26 Cortland St., New York, N.Y.

June 3.—American Association of General Baggage Agents, Montreal. E. L. Duncan, 332 South Michigan Ave., Chicago, Ill.

June 18 to 20.—American Association of Railroad Superintendents, Buffalo, N.Y. J. Rothschild, 400 Union Station, St. Louis, Mo.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities.—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Bureau of Explosives.—A. H. McMullen, Inspector, lines east of Port Arthur, 354 New Union Station, Toronto.—D. W. McNabb, Inspector, lines west of Port Arthur, C.P.R. station, Winnipeg.

Canadian Car Demurrage Bureau, Eastern Lines.—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines.—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Electric Railway Association.—D. N. Gill, 248 Albert St., Ottawa, Ont.

Canadian Freight Association.—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Industrial Traffic League.—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association.—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1.—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club.—W. A. Booth, 53 Rushbrooke St., Montreal. Meetings at Montreal 2nd Tuesday, each month, except June, July and August, at 8.30 p.m.

Canadian Ticket Agents' Association.—E. de la Hooke, London, Ont.

Dominion Marine Association.—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal.—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto.—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada.—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada.—C. N. Ham, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee.—A. E. Storey, 310 Canadian National Rys. General Office, Montreal.

Hydro Electric Railway Association of Ontario.—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee.—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club.—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada.—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 806 Union Station, Winnipeg.

Shipping Federation of Canada.—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto.—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver.—C. A. Dorfner, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club.—A. J. Barber, 114 Cado-min Bldg., Winnipeg, Man.

Montreal Tramways Company.

Report of President and Directors for the year ending June 30th, 1923.

To the Shareholders:—Your Directors beg to submit their twelfth Annual Report, accompanied by the Financial Statement, which shows the following results:—

REVENUE:	
Allowance from Contract.....	\$2,392,986.22
Other Revenue	37,238.90
Gross Revenue.....	\$2,430,225.12
EXPENSES:	
Interest on Bonds and Loans.....	\$ 990,855.80
Interest on Debentures.....	874,352.74
Other Expenses	16,982.96
Total Expenses	\$1,882,191.50
Net Income	\$ 548,033.62
Less Dividends for the current year:—	
2½% for the quarter ending Sept. 30, 1922	\$ 99,947.50
2½% " " " " Dec. 31, 1922	100,000.00
2½% " " " " Mar. 31, 1923	100,000.00
2½% " " " " June 30, 1923	100,000.00
Total	\$ 399,947.50
Surplus for the year.....	\$ 148,086.12
Add Surplus at June 30th, 1922.....	844,893.09
Total	\$ 992,979.21
From which has been appropriated:	
For Reserve Account.....	\$ 400,000.00
General Surplus.....	\$ 592,979.21

The Revenue of the Company for the year amounted to \$2,430,225.12, from which deducting the sum of \$1,882,191.50 for interest on Bonds, Loans, Debenture Stock and other Expenses, leaves a balance of \$548,033.62, from which there has been declared four quarterly dividends of 2½% each amounting to \$399,947.50, leaving a balance carried to the credit of the General Surplus Account of \$148,086.12, which added to the amount of \$844,893.09 at the credit of this account last year makes a total of \$992,979.21, from which there has been appropriated and placed to the credit of the Reserve Account the sum of \$400,000.00, leaving a balance in the General Surplus Account of \$592,979.21.

FINANCIAL

REDEMPTION OF UNDERLYING BONDS.—During the year the Company deposited with the Bank of Montreal the necessary funds to redeem the balance outstanding of the issue of One Hundred and Forty Thousand Pounds sterling (£140,000) 4½% Underlying Bonds, maturing on the 1st August 1922, of which there were then outstanding One Hundred and Twenty Thousand Pounds sterling (£120,000) or Five Hundred and Eighty-Four Thousand Dollars (\$584,000.00). This payment, together with the payments made last year, takes care of the whole of the Company's Underlying Bonds.

ISSUE OF BONDS.—During the year the Company, in conformity with the terms and conditions of the Trust Indenture covering its 5% Thirty Year Gold Bonds, issued and had certified by the Trustees, Three Million One Hundred and Sixty-One Thousand Dollars (\$3,161,000.00) par value of its 5% Thirty Year Gold Bonds, the same being issued to replace a like amount of the 4½% Underlying Bonds redeemed and cancelled. The balance of the 4½% Underlying Bonds amounting to One Hundred and Twelve Thousand Dollars (\$112,000.00) will be exchanged in like manner when they are all presented.

General Balance Sheet

ASSETS	
Cost of Road and Equipment.....	\$43,549,752.27
First and Refunding Mortgage 5% Gold Bonds certified and unsold.....	3,161,000.00
Guarantee Fund.....	400,000.00
Investments	74,433.75
Accounts Receivable.....	\$ 692,008.05
Stores	451,283.00
Cash	440,538.94
	1,583,829.99

N.B.—The contract provides that the City shall receive out of Gross Revenues a sum of \$500,000.00 per annum and that there shall be paid annually into a Contingent Reserve Fund 1% of the Gross Revenues until such Fund shall amount to \$500,000.00. There has accrued to the above accounts since the commencement of the Contract to June 30th, 1923:—

For the City of Montreal.....	\$2,692,694.05
For the Contingent Reserve Fund	500,000.00
	\$3,192,694.05
Less earned to date.....	1,760,360.87

\$1,432,333.18

which amount or any portion thereof will only be payable when sufficient revenues are received from the operations of the Contract over all prior charges under the Contract.

\$48,769,016.01

The Three Million One Hundred and Sixty-One Thousand Dollars (\$3,161,000.00) par value of 5% Bonds above referred to are available to provide funds for the Company's operations when and as required.

ISSUE OF DEBENTURE STOCK.—Under the authority of a Resolution of the Shareholders of the Company, adopted on the 30th September, 1911, your Directors authorized an issue of \$4,000,000.00 of the 5% Debenture Stock of the Company to be disposed of from time to time as required. During the year the amount of \$500,000.00 was disposed of, which, together with the issues of \$150,000.00 sold in the year 1921 and \$1,000,000.00 sold in the year 1919, leaves a balance of \$2,350,000.00 to be sold as required.

GUARANTEE FUND.—Under the terms of the Contract, the Company has to provide from its own funds a Guarantee Fund amounting to \$500,000.00 in amounts of not less than \$100,000.00 per year. Your Directors beg to report that the sum of \$100,000.00 has been paid into the Guarantee Fund since the close of the Company's fiscal year, making \$500,000.00 now in said Fund, which completes same, according to the terms of the Contract.

DIVIDENDS.—During the year the Company paid its usual quarterly dividends on its Common Stock, at the rate of 2½% per quarter.

OPERATIONS UNDER CONTRACT.—Your Directors are pleased to report a continued improvement in the affairs of the Company. The Gross Revenues under the Contract have again been sufficient to meet the requirements of the said Contract and to provide a Surplus of \$347,553.75 compared with a surplus of \$187,947.51 last year, as shown by the statement of Operations under the Contract. This Surplus has been applied to the reduction of the shortage accrued in previous years which amounted to \$1,779,886.93, leaving an accrued shortage amounting to \$1,432,333.18 at the close of this year, consisting of accruals for City Rental and the Contingent Reserve Fund as provided under the terms of the Contract, which amounts are payable only when the revenue received by the Company is sufficient to pay these charges after payment of all prior charges.

GENERAL.—Your Directors desire to report that it was decided during the year to install a second 12,500 K.W. Steam Turbine Unit with necessary auxiliaries, also two new Boilers with Stokers and necessary auxiliaries at the Hochelaga Power House, and work has been commenced on same since the close of the year.

The Company, during the course of the year, commenced the construction of two additional stories to its Office Building, the work on which is practically completed, and also purchased the property on the north-east corner of Notre Dame Street West and Cote St. Paul Road, to be used for the future requirements of the Company.

In conclusion your Directors desire to place on record their appreciation of the valuable and faithful services rendered by the Officers and employees of the Company.

Respectfully submitted on behalf of the Directors,
E. A. ROBERT, President.

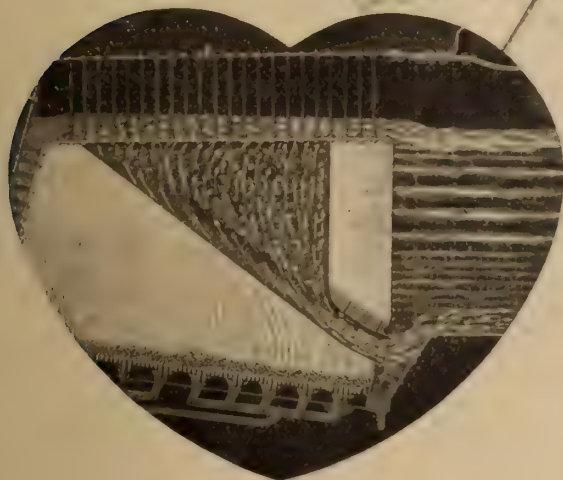
LIABILITIES	
Capital Stock (Common).....	* \$ 4,000,000.00
Debenture Stock	* 17,650,000.00
First and Refunding Mortgage 5% Gold Bonds, due July 1, 1941.....	21,246,000.00
Mortgages	15,343.00
	\$42,911,343.00
Loans and Notes Payable.....	\$ 960,000.00
Accounts and Wages Payable.....	1,114,453.43
Accrued Interest	220,625.00
Employees' Securities.....	21,411.88
Unclaimed Dividends	1,956.57
Unredeemed Tickets	519,345.77
Suspense Account	610,412.24
Dividend payable August 1st, 1923.....	100,000.00
Due account City Rental and Contingent Reserve Fund.....	81,033.34
	3,629,238.23
Reserve Account.....	\$1,000,000.00
Maintenance and Renewals Reserve.....	121,903.81
Reserve for Financing.....	513,551.76
Surplus	592,979.21
	2,228,434.78
	\$48,769,016.01

Verified: John J. Robson, L.I.A., Auditor.

Certified correct:—H. E. Smith, Comptroller.

*This includes the amount due on shares not yet exchanged.

Increased Capacity Without Added Weight



—the Heart of the Locomotive

WHILE every railroad executive desires more power in his locomotives, he keeps his eye carefully on weight.

But weight can be quickly dismissed in considering Nicholson Thermic Syphons.

Syphons are equivalent to a large increase in the firebox heating surface, while negligible from the weight standpoint.

Syphons are so placed in the hottest part of the firebox and so designed to stimulate boiler circulation that they mean 10 to 20% more steaming power.

Here is increased capacity that is available in no other way and can be had at the next shopping period.

LOCOMOTIVE FIREBOX COMPANY

140 South Dearborn Street, Chicago, Illinois

THE HOLDEN COMPANY, LIMITED

Montreal

Toronto

Winnipeg

Vancouver

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES:

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number.
Minimum order—\$1.
Rates under other headings and for display advertisements on application.

For Sale

"We are now prepared and glad to furnish Stucki Side Bearings per Canadian Patents Nos. 187019 and 17080 upon request. Please call—The Holden Co., Ltd., Montreal, Canada."

FOR SALE—80 lb. and 56 lb. rail, very little used. Switches, frogs, 25 ton saddle tank locomotive, boilers and smoke stack, 350 ft. lift, 8"x12" duplex steam hoisting engine, automatic control. Midland Metal & Wrecking Co., Midland, Ont.

IT PAYS TO USE Woolery Ball Bearing Engines and Railway Motor Cars

They stay in service the year round, have big reserve power, are light to handle and require fewer repairs than any other engines on the market.

New 1923 Ball Bearing Models
Just Out

Manufactured by
Woolery Machine Co., Minneapolis, Minn.
Canadian Distributor:
Dominion Equipment & Supply Co., Winnipeg

REINFORCED BRAKESHOOES

OUR BRAKE SHOES decrease maintenance cost—increase brake efficiency

Dominion Brake Shoe Company Limited

Montreal—350-356 St. James Street

Toronto—342 Adelaide Street West

Winnipeg—150 Princess St.

Vancouver—609-613 Bank of Nova Scotia Bldg.

Modern Marine Machinery
Automatic Steam Towing Machines, Ship Windlasses, Cargo and Deck Winches, Steam Capstans, Dock Gypsies, Steering Engines, Hydraulic Hoists, etc.

Manufactured by the
CORBET FOUNDRY & MACHINE CO.,
LIMITED, Owen Sound, Canada.

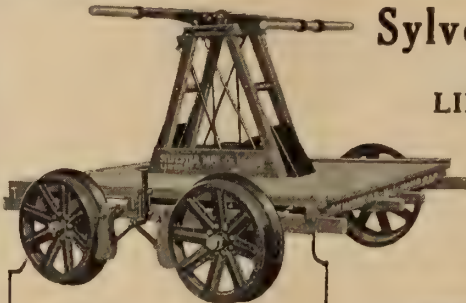
IT PAYS to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better RESULTS.

The Power of Advertising


It is often difficult for an advertiser to realize what he is actually paying for, because he cannot project his imagination into the thousands of homes and offices and see his advertisement doing its work. The advertiser does not pay for ink and paper. These are merely mechanical essentials. He pays for the effect upon people's minds, and that is as intangible as air, but as permanent as a towering structure of steel and concrete.

Sylvester Manufacturing


Company Limited
LINDSAY - ONTARIO



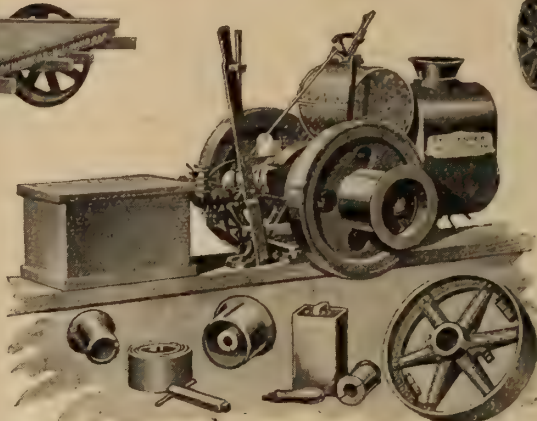
No. 1 Sylvester Standard Section Hand Car, fitted with Hyatt roller bearings or plain bearings and 20 in. pressed steel wheels.




No. 3 Sylvester Motor Car fitted with engine and Angle Iron Seats. This makes a complete outfit for Section Foremen, B&B Supervisors and for heavy duty. This car is very strongly braced and trussed and will handle heavy loads.



No. 4 Sylvester Standard Section Push Car. Fitted with extra large platform.



Change your hand car into a motor car by the use of a Sylvester Engine. Built in 4, 4 3/4 and 6 H.P. size. Sold on Easy Payment Plan. Write for prices and catalog today.



No. 7 Light Motor Car fitted with 4 H.P. Engine and seat. Weight 490 lbs. This is a new principle in motor car value and construction.

Great Lakes Transportation Co., Limited

Also operating Glen Steamships Limited and Glen Line Limited

James Playfair, Pres., Midland. J. A. Richardson, V.-P., Winnipeg. D. J. Burke, Traffic Manager, Windsor.



BULK AND PACKAGE FREIGHT CARRIERS

Lake Head to the Gulf

Head Office: Midland. Agencies: Windsor, Cleveland, Fort William, Winnipeg.

Engineers and Contractors**VIVIAN T. BARTRAM****Railroad
and
Harbour Works***Head Office***Bank of Toronto Bldg. TORONTO****The Strauss Bascule
Bridge Co.****Engineers & Patentees of Strauss
Movable Bridges.**

STRAUSS Bridges in CANADA number more than TWICE as many as all other Bascule and Lift Bridges COMBINED. Consult us before adopting plans or undertaking construction.

**Main Office: 225 No. Michigan Avenue,
Chicago.****Canadian Offices: 14 Windsor Hotel, Mont-
real; 103 London Bldg., Vancouver.****New York Office: Knickerbocker Bldg.****THE ARNOLD COMPANY****ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
Reports, Design and Construction
Complete Railway Shop and Terminal
Properties
Electrification of Steam Railroads.
CHICAGO****Sinclair Construction Co.
Limited****Railway and General Contractors
HEAD OFFICE: EXCELSIOR LIFE BLDG.
Adelaide and Toronto Sts., Toronto****Traffic Service****GRIFFIN & GRIFFIN****P.O. Box 97, Windsor, Ont.****Canadian manufacturers of the Cele-
brated Wheel-Truing Brake Shoe.
Best Wheel Grinders in the World.****Bureau of Canadian Information****T**HE Canadian Pacific Railway, through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In the Reference Libraries, maintained at Montreal, Chicago and New York are complete data on

natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added.

No charge or obligation attaches to this service. Business organizations are invited to make use of it.

Canadian Pacific Railway**Department of Colonization and Development****165 E. Ontario St. 355 Windsor Stn. C.P.R. Bldg., Madison Ave., at 44th St.
Chicago Montreal New York****Robert W. Hunt & Co., Limited****Consulting and Inspecting Engineers
Chemists and Metallurgists**

Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement, Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

Resident inspectors at all important manufacturing centres in Canada, the United States and Great Britain.

REPORTS ON PROPERTIES AND PROCESSES.**Head Office and Laboratories:****McGill Building****Branches: TORONTO****VANCOUVER****MONTREAL, QUE.
LONDON, ENGLAND****If you are in the market for****LOCOMOTIVES
CRANES
STEAM SHOVELS
DUMP CARS****PASSENGER OR
BAGGAGE CARS
FLATS, COAL OR
BOX CARS, ETC.****Give us an opportunity to quote you****CANADIAN EQUIPMENT CO., LIMITED****285 BEAVER HALL HILL - - - MONTREAL****Contractors', Industrial and Railroad Equipment****Geo. Hall Coal and Shipping Corporation****211 McGill St. - Montreal****Wholesale and Retail Distributors of Bituminous and Anthracite****COAL****Fueling Docks at Montreal, Prescott, Ont., and Ogdensburg, N.Y.****Sales Agents for: Rochester and Pittsburgh Coal and Iron Co's
Reynoldsville Coal and Pittsburgh Coal Co's Gas Coals****Distributors for: Lehigh Valley Coal Company's Anthracite****CANADIAN BRONZE LIMITED****Passenger Service. BABBITS. Miscellaneous Brass Castings for Railroads.
Brass Wearing Parts for Locomotives. Journal Bearings for Freight and****Works and Office: 69 Delorimer Avenue, MONTREAL, QUE.**

"GOLDEN GLOW" Headlights make night like day on the right - of - way

On both steam and electric railways Keystone "Golden Glow" Headlights are giving a service decidedly superior in that—

The Keystone Reflector is of glass, accurately ground to a true parabola, silvered on the back like the finest French mirror, and adequately protected from moisture, gases and temperature. Its beam is permanently of maximum intensity, highly concentrated and free from dark spots.

The peculiar greenish-yellow glass of the reflector throws a beam of soft, golden light, free from dazzle and glare, wonderfully easy on the eyes, and more revealing than white light. This "Golden Glow" has remarkable penetration in fog, dust and smoke.

Focusing can be done with one hand with the Keystone Type C Focusing Device, which provides quick, accurate adjustment of the light centre, and "stays put."

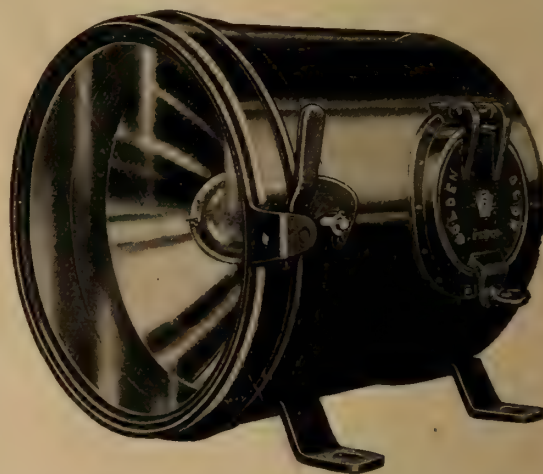
Upkeep of Keystone Headlights is almost negligible. The reflector never needs polishing—only an occasional wipe. It is so thoroughly annealed and carefully mounted that breakage is very rare.

We are always ready to prove by actual demonstration that Keystone Golden Glow Headlights ARE superior in all-round efficiency.



**"Golden Glow" Headlight
Type T, Portable**

For Double End Electric Railway Cars, or for easy removal during daytime. Made with 9" and 12" Reflectors.



**"Golden Glow" Locomotive Headlight
Type EF-1412, 14" Reflector**

Made in Armco Iron or Copper Body. Doors and Fittings Cast Iron. Forged Steel Feet.

LYMAN TUBE & SUPPLY CO., LIMITED

Montreal

Toronto

Winnipeg

Vancouver

RAILWAY TRACK MATERIAL

**Angle Bars
Tie Plates
Spikes
Bolts
Nuts**



THE
STEEL
COMPANY
OF
CANADA
LIMITED

HAMILTON MONTREAL



Track supports for the new Union Station in Chicago are of concrete. This picture shows one of the tracks laid on short concrete cross ties mounted on a ten-foot wide concrete base.

25 Acres of Concrete in Chicago Union Station

Practically all tracks in the new Union Station in Chicago, for the joint use of four large railroads will be placed on concrete slabs.

In the train shed proper the rails will rest on short ties embedded in concrete roadbed, that in turn rests on a concrete slab 10 inches thick and 14 feet wide. All approach tracks, with the exception of one section 800 feet long, laid three years ago, will be laid in ballast on top of a 10-inch concrete slab. The total area of concrete slab track support will be slightly over 25 acres.



On many of the Chicago Union Station tracks, a concrete base is used and the track laid and ballasted on it in the usual manner.

Four Chicago Railways Invest In Permanence And Safety

PROBABLY no other railway tracks in the world will be subject to more severe wear than those now being completed at the new Union Station at Chicago. For that reason practically all tracks will be laid on concrete slabs.

The officials of these railways found such a striking reduction in maintenance costs effected by a section of concrete track support laid in 1920, they did not hesitate to adopt concrete construction for this subsequent work.

The use of concrete for railroad construction has long since passed the experimental stage. Each year sees a decided increase in its use for this type of construction where permanence and lower maintenance cost is the paramount consideration.

Railroad officials have come to realize that the same qualities that have won for concrete nation-wide recognition as the ideal paving material to insure Highways of Permanence are the qualities necessary to insure for railroad construction low maintenance cost, permanence and safety.

**CANADA CEMENT
CONCRETE
FOR PERMANENCE**

*Specify
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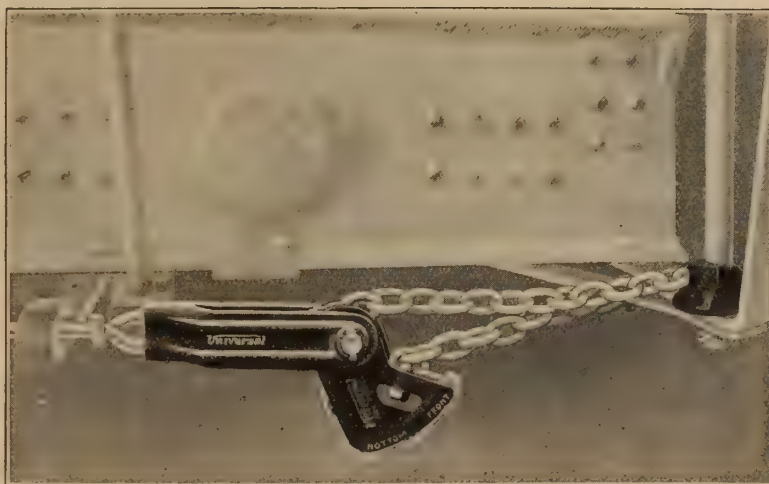
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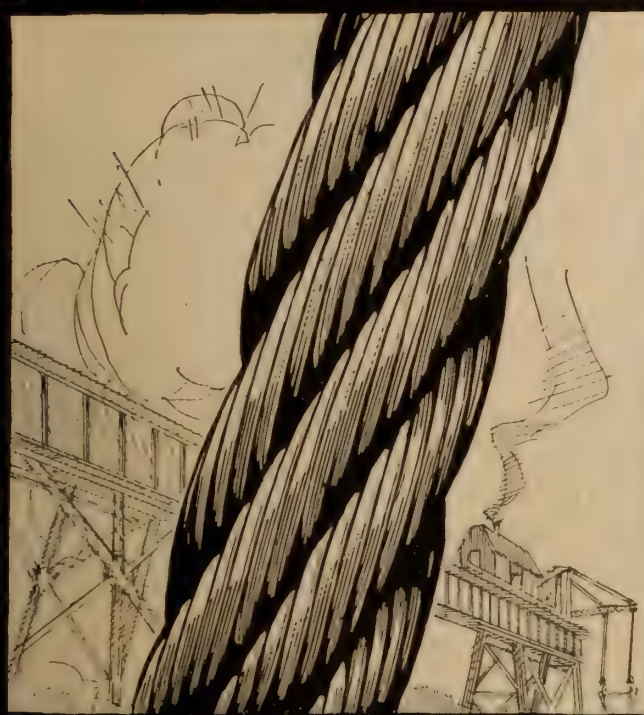


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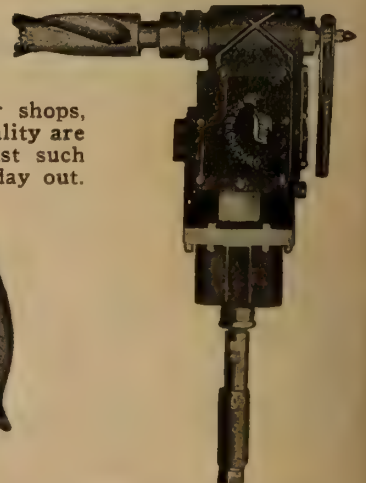
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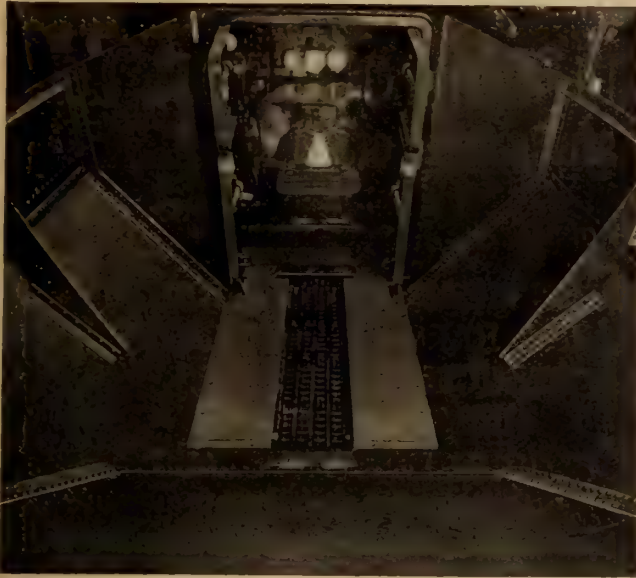


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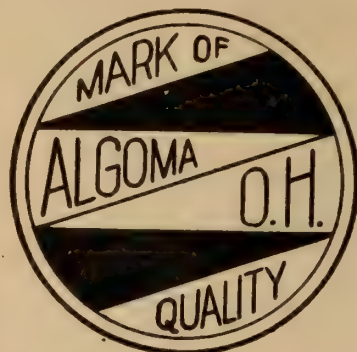
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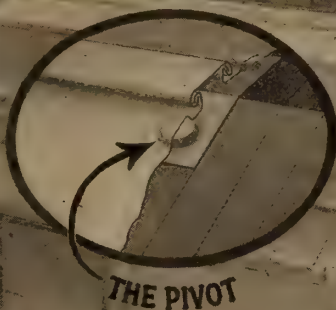
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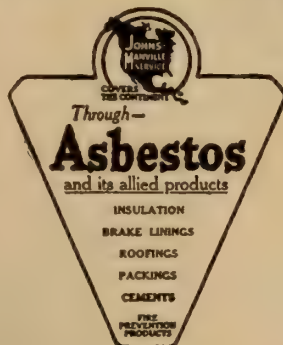
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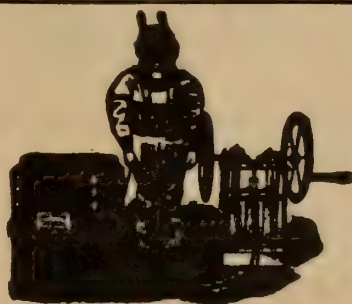
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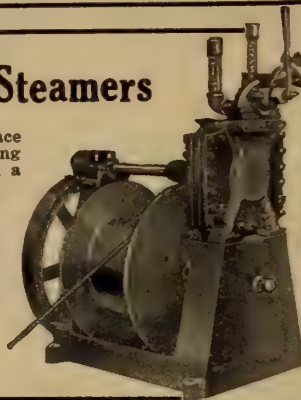
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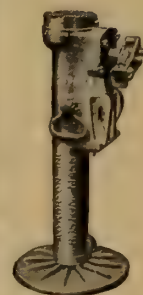
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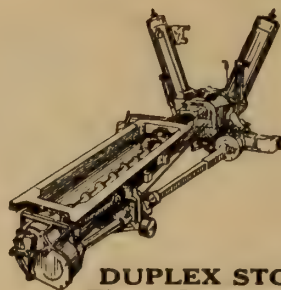
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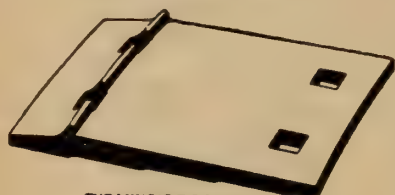
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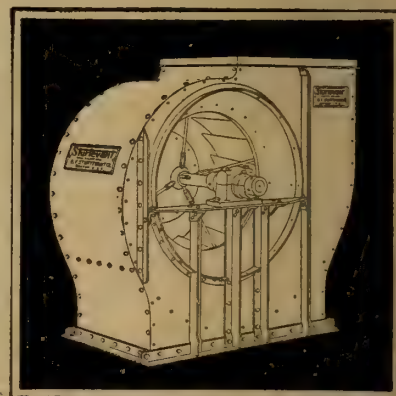
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Standard Car Truck Co.**TRUCKS, ELECTRIC CAR**Baldwin Locomotive Works
Canadian Car and Foundry Co.**TRUSSES, ROOF**Dominion Bridge Co.
Hamilton Bridge Works Co.**TUBE CLEANERS**

F. H. Hopkins & Co.

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Lyman Tube and Supply Co.

TUBES, STEELF. H. Hopkins & Co.
Page-Hersey Tubes Ltd.**TUBING, SEAMLESS STEEL**

Lyman Tube and Supply Co.

TURBINES

B. F. Sturtevant Co.

TURNBUCKLES

Canada Foundries & Forgings Ltd.

TURNTABLESDominion Bridge Co.
G. P. Nichols & Bro.**UNIONS**

Crane Ltd.

UPHOLSTERY, CARL. C. Chase & Co.
Massachusetts Mohair Plush Co.**VALVES**Canadian Fairbanks Morse Co.
Crane Ltd.**VALVES, ANGLE AND GLOBE**

Dominion Insulator & Mfg. Co.

VALVES, BRASS GATE

Dominion Insulator & Mfg. Co.

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B. F. Sturtevant Co.

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Railway & Power Eng. Corp.

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Steel Co. of Canada

WASTE

B. J. Coghlin Co.

WATER SOFTENERS AND PURIFIERSBabcock & Wilcox.
Dearborn Chemical Co.**WELDING**Canadian Vickers, Ltd.
Metal & Thermit Corporation.
Newfoundland Dockyards, Ltd.**WELDING APPARATUS AND MATERIALS**Dominion Insulator & Mfg. Co.
Metal & Thermit Corporation.
Taylor & Arnold Engineering Co.**WHEELBARROWS**

F. H. Hopkins & Co.

WHEEL GRINDERS

Griffin & Griffin.

WHEELS, CARAmerican Steel Foundries.
Association of Manufacturers of
Chilled Car Wheels.
Canada Iron Foundries Ltd.
Canadian Car and Foundry Co.**WHEELS, LOCOMOTIVE**

Canada Iron Foundries Ltd.

WHITE LEADCarter White Lead Co.
Steel Co. of Canada.**WINCHES, SHIP**Canadian Vickers, Ltd.
The Wm. Kennedy & Sons, Ltd.**WINDLASSES, SHIP**Canadian Vickers, Ltd.
Dake Engine Co.
The Wm. Kennedy & Sons, Ltd.**WIRE, ALL METALS**

Steel Co. of Canada.

WIRE, BARE AND INSULATED COPPERNorthern Electric Co.
Standard Und. Cable Co. of Can.
Steel Co. of Canada.**WIRE CLOTH**B. Greening Wire Co.
WIRE GOODS, BRIGHT
Steel Co. of Canada.**WIRE PRODUCTS**

B. Greening Wire Co.

WIRE ROPEDominion Wire Rope Co.
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WRECKING, MARINEDominion Towing & Wrecking Co.
John E. Russell.**WRENCHES**

Dominion Brakeshoe Co.

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MADE IN CANADA FROM P&H PIPE

All sizes and weights
for the various purposes required and
to suit all styles of fittings.

NEAT — UNIFORM — ORNAMENTAL
DURABLE — STIFF — STRONG
ENDS CHAMFERED TO SHED
WATER

Ideal for
ELECTRIC LIGHT—POWER
TELEPHONE—TELEGRAPH
AND STREET RAILWAY LINES
AND FLAG POLES



PAGE-HERSEY TUBES, LIMITED Head Office: 100 Church Street - Toronto, Canada

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MONCRIEFF'S

Moncrieff's "Unific" is not a cheap glass. But because it outlasts many ordinary glasses, the "Unific" is economical. British made.

JOHN MONCRIEFF LIMITED, PERTH, SCOTLAND.

"UNIFIC" WATER GAUGE



GLASSES

The "Unific" does not readily corrode. It resists extreme changes of temperature and withstands the highest working steam pressure.

Canadian Representative: W. J. WALL, 134-136 Bleury St., MONTREAL, Canada.

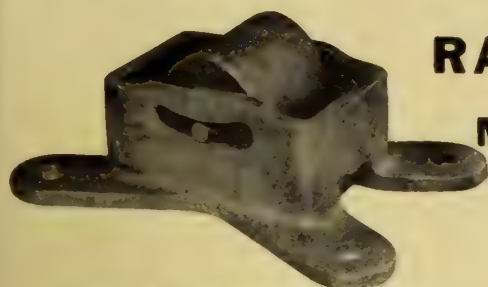
**WANTED—a RAILROAD man as DISTRICT representative applying
THE IMPERIAL GUARANTEE and ACCIDENT INSURANCE CO. of CANADA**

Head Office

22 Victoria Street

Toronto

MINER RAILWAY APPLIANCES MANUFACTURED IN CANADA



**ROLLING ROCKER
SIDE BEARINGS**



**IDEAL
SAFETY
HAND
BRAKES**

**EFFICIENT
FRICTION
DRAFT
GEARS**



**W. H. MINER
CHICAGO**

THESE DEVICES ARE VERY EXTENSIVELY USED

Hunt-Spiller Gun Iron

FOR THE PRINCIPAL PARTS OF A LOCOMOTIVE

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|---------------------------|-----------------------------|
| 1 Cylinder Bushing | 6 Valve Bull Rings |
| 2 Cylinder Packing | 7 Crosshead Shoes |
| 3 Piston—Piston Bull Ring | 8 Knuckle Pin Bushings |
| 4 Valve Bushings | 9 Pedestal Shoes and Wedges |
| 5 Valve Packing | 10 Driving Boxes |

Cylinder Bushings

Why use anything but Hunt-Spiller Gun Iron? You will find its application nets you a real profit.

Made only by

Hunt-Spiller Manufacturing Corporation

W. B. LEACH, Pres. & Gen. Mgr.

Office and Works:

J. G. PLATT, Vice-Pres. & Sales Mgr.

383 Dorchester Ave., SOUTH BOSTON, 27 Mass.

Canadian Representative: Canuck Supply Co., 371 Aqueduct St., Montreal, P.Q.

A Thoroughly Hardened File

A thoroughly hardened file is an assurance of durability. It won't wear out before it has done its full stint.

Special attention is given to the hardening of these files—you can rely on them for full service.

**Kearney & Foot
Great Western
American
Arcade
Globe**

FILES

**are the standard
of file quality**

Made in Canada by

NICHOLSON FILE COMPANY

Port Hope

Ontario

Canadian Railway AND Marine World

Founded in 1898 by Acton Burrows.

Number 309.

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TORONTO, CANADA, NOVEMBER, 1923

See page 529 for
Subscription Rates.

COGHLIN Springs



ALL TYPES—FOR EVERY PURPOSE

Manufacturers of Springs since 1869

COGHLIN CO
Limited
MONTREAL

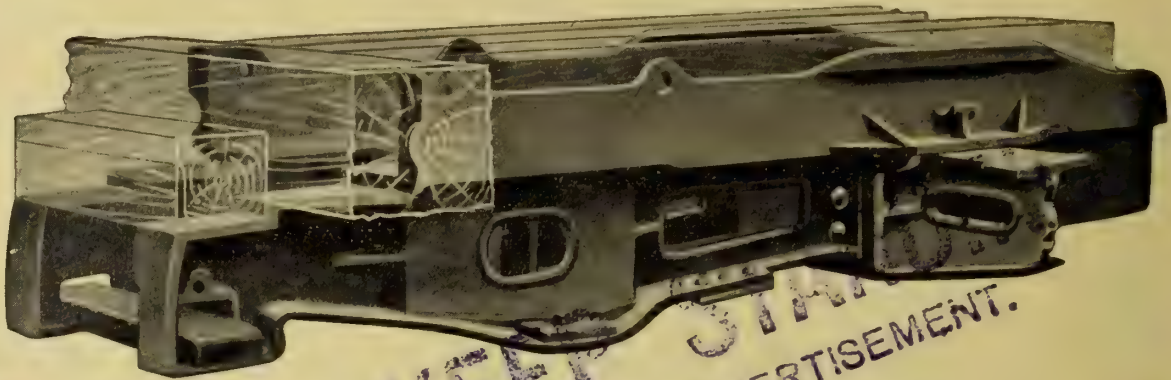
TORONTO: Harvard Turnbull & Co.

WINNIPEG: Filer-Smith Machinery Co., Limited

VANCOUVER: Gordon & Belyea, Limited

AMERICAN STEEL FOUNDRIES

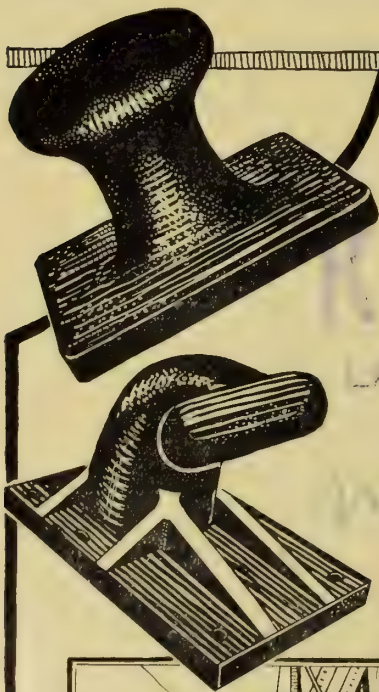
NEW YORK CHICAGO ST. LOUIS



Economy Cast Steel Draft Arms



INTERNATIONAL EQUIPMENT CO. LTD.
MONTREAL, QUEBEC, CANADA.



Mooring Bollards Niggerheads Anchors • Propellers

9-Inch St. Lawrence Dipper Teeth Reversible Point Patented

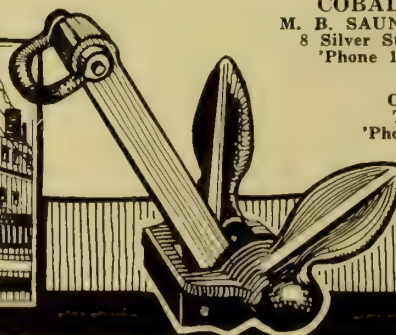
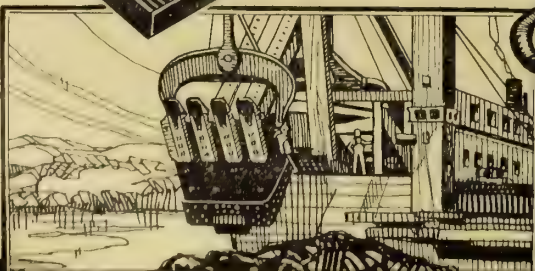
Kennedy's, Owen Sound, have exceptional facilities for producing all work of this class—from the patterns, if necessary, to the prompt shipment of the finished product.

The Wm. KENNEDY & SONS Limited
OWEN SOUND • Ontario

COBALT
M. B. SAUNDERS
8 Silver Street
Phone 153

MONTREAL
H. C. KENNEDY
232 St. James Street
Phone Main 394

HALIFAX
C. A. FOWLER
Tramway Bldg.
Phone Sackville 1700



Service shows the most successful car roof to be the

All Steel Dry Lading Roof

which made possible the following specifications:

No. 1. That should be weather-proof under all conditions, also rust-proof, fire-proof and burglar-proof.

No. 2. That should not require maintenance for at least ten years.

No. 3. That should be of low deadweight and give the car a low center of gravity.

No. 4. That should lessen strain on the superstructure of the car when the car is in motion.

No. 5. That should strengthen, rather than detract, from the strength of the car frame.

No. 6. That should give the greatest interior capacity and the lowest clearance limits.

No. 7. That should be flexible enough to conform to every service condition of the car.

No. 8. That should be possible to use again on the same or another car, even in case of partial or total destruction of the rest of the car by fire or wreck.

No. 9. That should not require roofing boards.

No. 10. That should be of low first cost.

No. 11. That should permit of inspection on the part of any shipper by merely closing the doors of the car and if no rays of light are seen through the roof, the shipper to consider it a weather-tight roof.

No. 12. That should be so constructed that the carlines, purlines and ridge, tie the sides and ends of the car together firmly, so that the weather-proof roof has only the one duty of protecting the contents of the car from the elements.

HUTCHINS CAR ROOFING CO., LTD.

MONTREAL

Great Lakes Transportation Co., Limited

Also operating Glen Steamships Limited and Glen Line Limited

James Playfair, Pres., Midland. J. A. Richardson, V.-P., Winnipeg. D. J. Burke, Traffic Manager, Windsor.



BULK AND PACKAGE FREIGHT CARRIERS

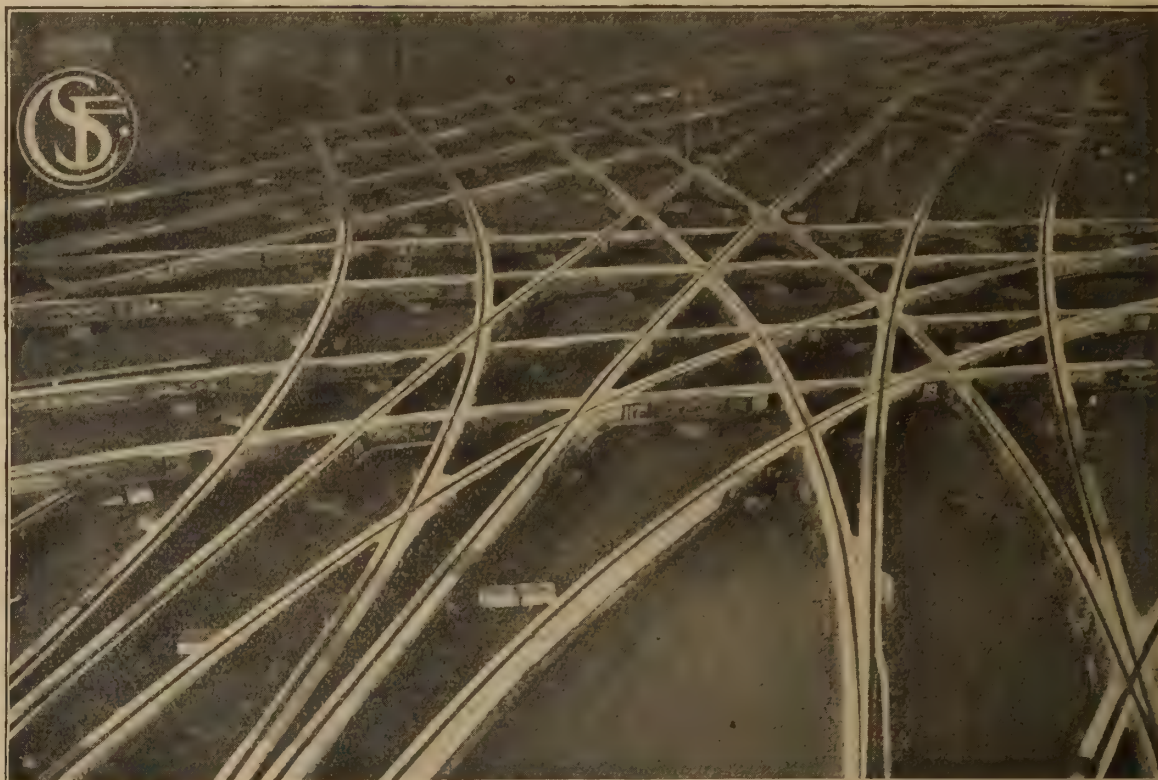
Lake Head to the Gulf

Head Office: Midland.

Agencies: Windsor, Cleveland, Fort William, Winnipeg.

TRACKWORK

FOR STEAM AND ELECTRIC RAILWAYS



The view, taken during erection in our plant, shows part of the King St.-Queen St.-Roncesvalles Avenue-Lake Shore Road intersection recently constructed by us for Toronto Transportation Commission.

SWITCHES, MATES, FROGS, DIAMOND CROSSINGS, ETC.
of all classes and any standard section

COMPLETE INTERSECTIONS
MANGANESE-STEEL SPECIAL WORK

Manufacturers of Balkwill Articulated MANGANESE-Steel Crossings.

CANADIAN
STEEL FOUNDRIES
LIMITED

General Offices:

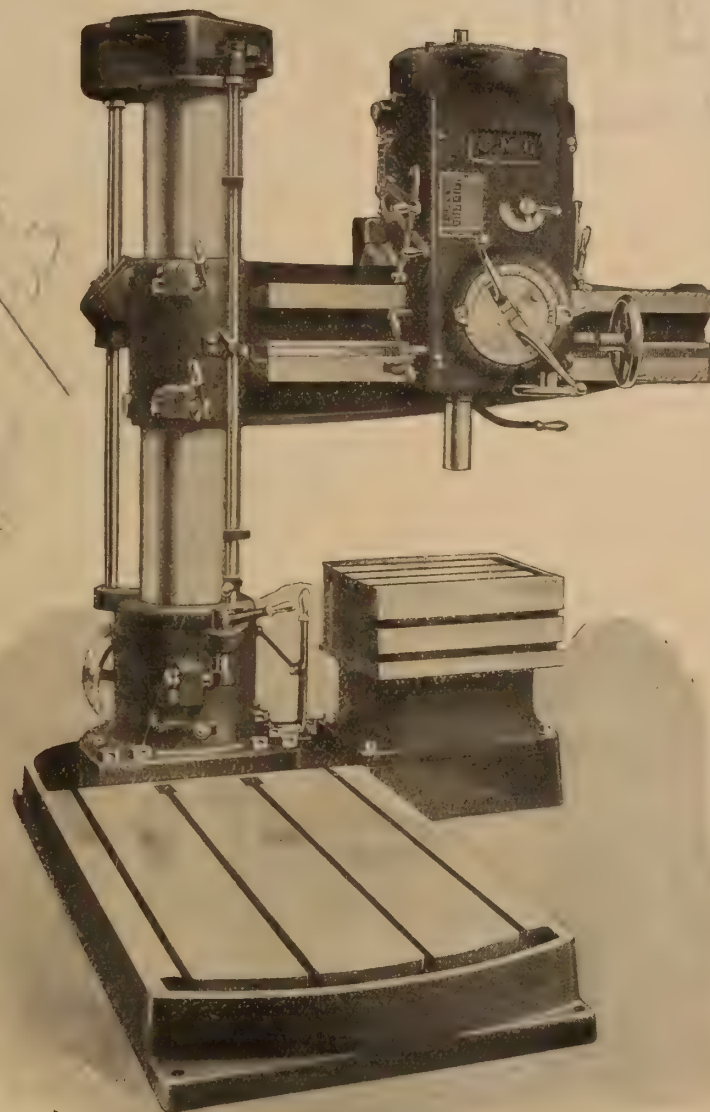
307 CRAIG ST. WEST, MONTREAL

C.M.C. 4'

Heavy Duty Plain Radial Drill

*is strong
where most
Radial Drills
are weak*

Because—



This Drill is regularly built with single pulley belt drive and all thirty-six spindle speeds and feed changes are made on the carriage within the reach of the operator. Therefore, the speed of the drive through the frictions is always constant, delivering just as much power to the spindle on the low speeds as on the higher, an unusual but very valuable feature on a Radial Drill.

This is just one of its good points. Our illustrated bulletin tells about the rest.

CANADA MACHINERY CORPORATION

LIMITED

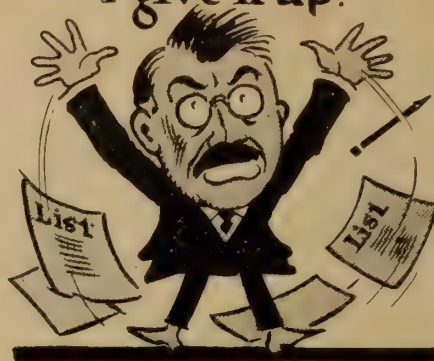
GALT - ONTARIO

Manufacturers of Wood and Ironworking Machine Tools

Toronto Sales Office - 721 Bank of Hamilton Building



"I give it up!"



WHAT CANADIAN RAILWAYS BUY

An industrious man of an enquiring mind once set himself to the task of making a tabulated list of the different things that a Canadian steam railway purchasing agent has to buy.

When he got to the sixty thousandth item he gave it up, feeling that he had made only a beginning!

Just a glance down the list of groups of things the R. P. A. has to buy and let your imagination conjure up, if it can, some few things that he does not have to buy!

Question: What is the right way to sell to a Canadian railway?

Answer: Give information, information and yet more information.

Question: Yes, but to whom?

Answer: To everybody, from the section foreman up to the President.

Question: How?

Answer: By descriptive, information-giving advertising, carried on unceasingly, in

Canadian Railway and Marine World

Tell only one story at a time, for two reasons:

First, because the human mind, however highly trained, finds it difficult to grasp and hold more than one concept at a time.

Second, so that your ads may be clipped by officials interested and filed or pasted in books under their proper classifications.

But, by all means, tell the truth; tell it simply, without abusing your competitors, and keep on telling your business stories, one by one, knowing that the men you are most eager to reach are the very men who will be most eager to read and preserve every item that will make them better posted men in this field of work.

CANADIAN RAILWAY AND MARINE WORLD

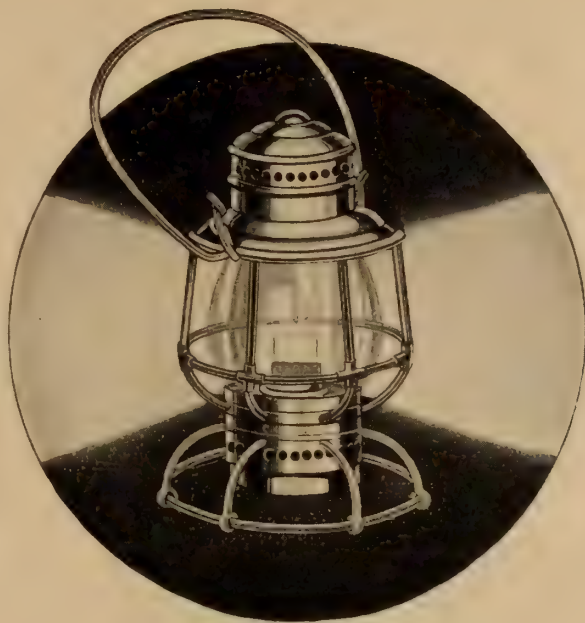
Toronto

Canada

Acetone.
Acids.
Air brake material.
Angle bars.
Axes.
Axles.
Babbitts.
Batteries.
Blankets.
Belting.
Boilers.
Boiler compound.
Boiler lagging.
Bolts (various kinds).
Ballast unloaders.
Brake beams and heads.
Bolsters.
Brake shoes.
Brass sheets, rods, tubes, etc.
Brooms.
Brushes.
Bumping posts.
Carbide.
Carpet.
Car replacers.
Car movers.
Cars, passenger, sleeping, freight, etc.
Cars, hand and push.
" dump.
Castings (brass, grey iron, malleable and steel).
Cement.
Chain.
Charcoal.
Cotton.
Coal.
Coke.
Couplers and parts.
Cranes.
Culverts.
Curtains.
Ditchers.
Door checks.
Drills of various kinds.
Drugs and disinfectants.
Dynamite.
Dynamos.
Emery wheels.
" powder and paper.
Fence posts.
Fencing.
Ferrules.
Files.
Fire brick and clay.
" extinguishers.
Forges.
Foundry supplies.
Furniture.
Fuses.
Gaskets.
Gauges.
Generators.
Grain doors.
Grindstones.
Gasoline engines.
Hammers.
Headlights.
Hose and rubber goods.
Injectors.
Interlocking and signal apparatus.
Iron (bars).
" (staybolts).
" (pig).
Jacks.
Journal boxes.
" bearings.
Ladders.
Lamps.

Lamp burners.
Leather.
Locks.
Locomotive and parts.
Lumber.
Lubricators.
Machine tools.
Motors.
Nails.
Nuts (iron and steel).
Oil storage equipment.
Oils (various kinds).
Packings.
Paints.
Paper.
Photo supplies.
Patterns.
Picks.
Pile drivers.
Pipe.
" fittings.
" covering.
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Superheaters.
Switches.
Tanks.
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Tie plates.
Ties.
Tin plate.
Tinware.
Tires.
Torches.
Torpedoes.
Track tools.
" drills.
Transfer tables.
Turntables.
Trucks.
Tubes and tubing.
Tube expanders.
Typewriters.
Upholsterers' supplies.
Uniforms.
Valves.
Vises.
Washers.
Waste.
Weeders.
Welding material.
Wheels.
Wire (various kinds).
Wrenches.





Perfection Signal Oil

**The safe and serviceable oil
for use in hand lanterns**

Perfection Signal Oil has such a long-established reputation for safety and good service that it is the accepted standard for motion signalling on all representative railroads.

Manufactured from highest grade materials, it produces a clear, long-burning service flame that will withstand the most severe weather conditions and the varied positions peculiar to the signal code, without being extinguished. No smoking or charring of wicks.

Prepare for the long winter nights by ordering your supply now and insure prompt delivery.

*Perfection Signal Oil is manufactured
and marketed only by this company*



Galena-Signal Oil Company

Toronto of Canada, Limited Montreal



Small Creeper Cranes or Big Cranes



The thousands of Brownhoists in use prove that they give good service. Each is backed by over 40 years experience. Write us your handling needs.

The Brown Hoisting Machinery Co., Cleveland, Ohio

Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

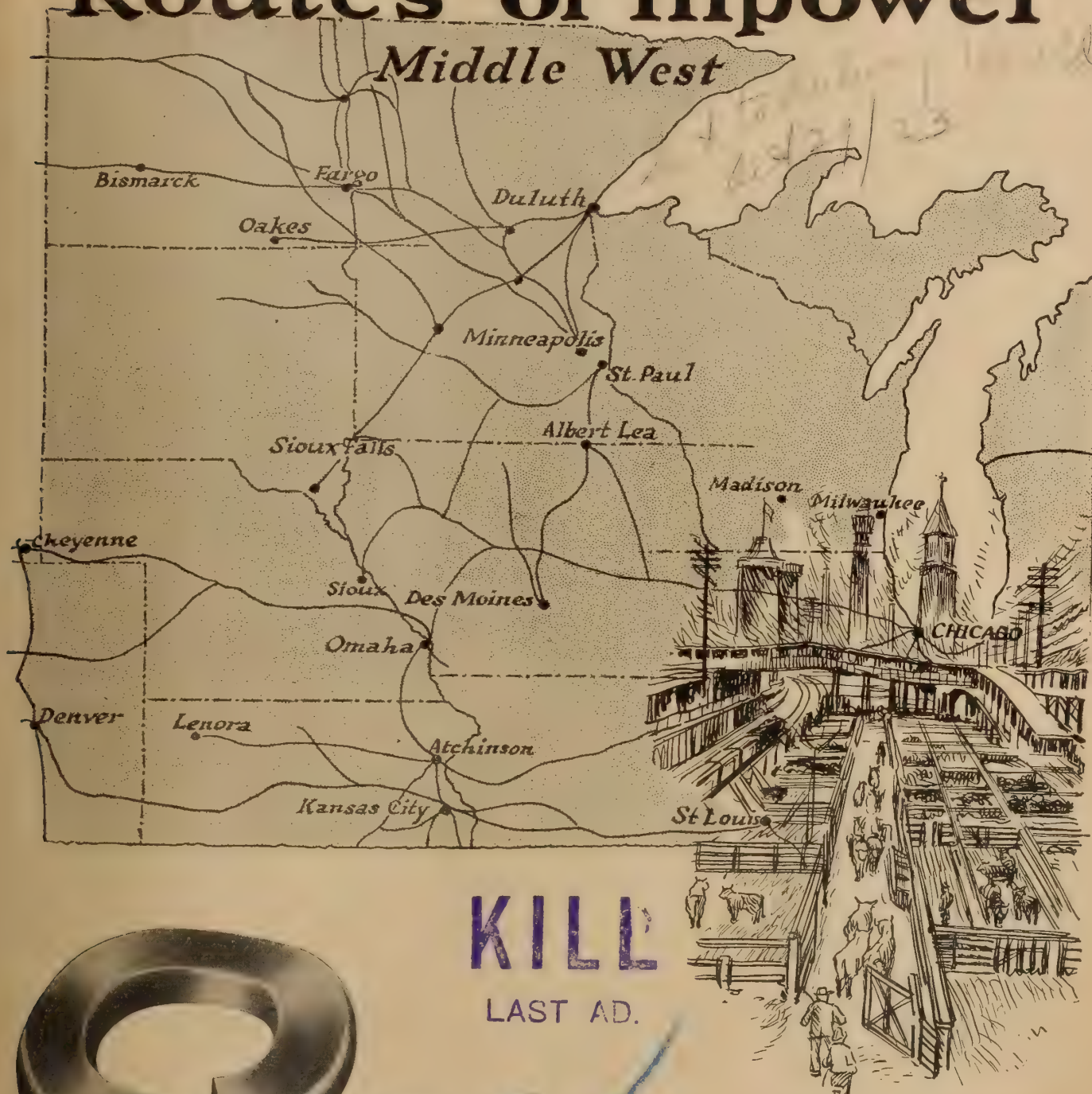
Products: Locomotive Cranes, Buckets, Belt and Chain Conveyors, Contractor's Bunkers, Etc.

BROWNHOIST

M A T E R I A L H A N D L I N G M A C H I N E R Y

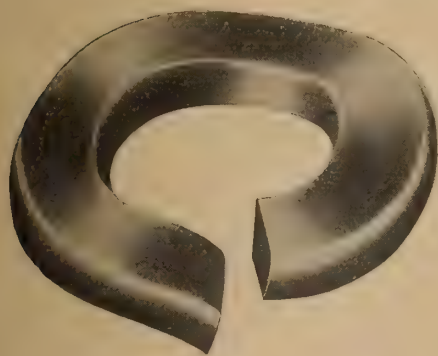
Routes of Hipower

Middle West



KILL

LAST AD.



The Routes of **HIPOWER**
Lead to Economy

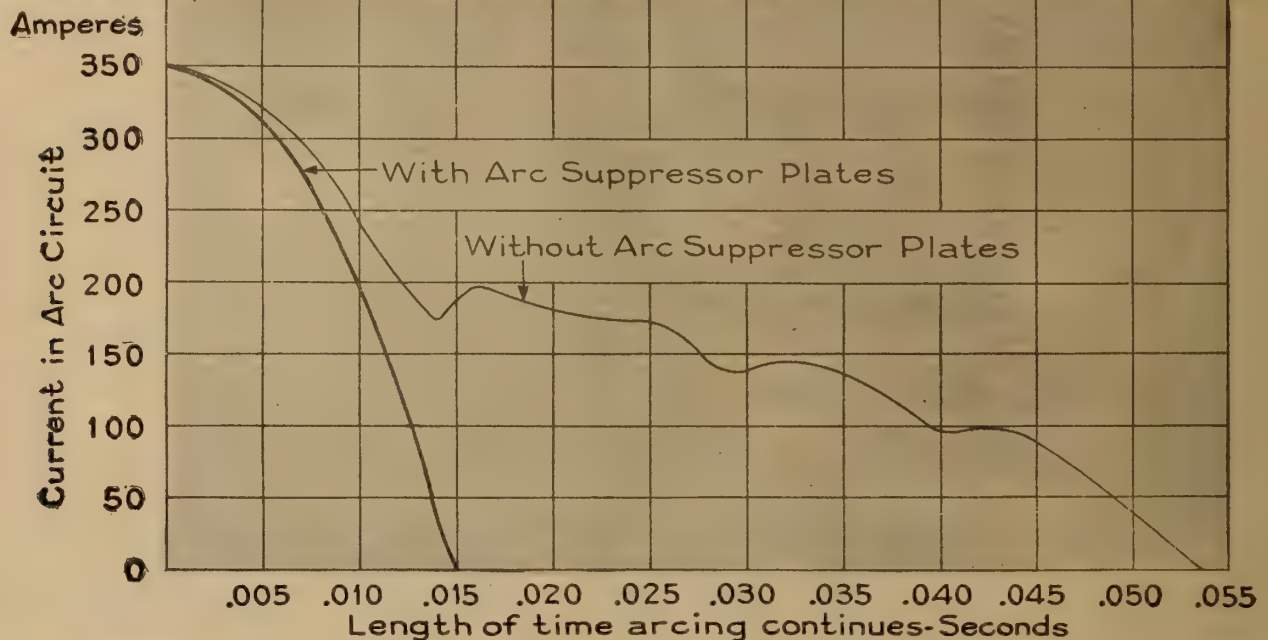
IN the great railroad terminals and distributing transportation systems serving the diversified industries of the middle west, **HIPOWER** effectively, permanently and economically maintain the bolted security of track jointed parts, over which fast express and heavy freight trains must be safely directed to their destinations.

That's why they are universally used.

Watch for your road
in this series

THE NATIONAL LOCK WASHER CO.
Newark, N.J., U.S.A.

What C-G-E Arc Suppressor Plates Do



C-G-E Arc Suppressor Plates are installed opposite the fingers where there is the most arcing. They narrow the arc passages, which increase the resistance of the arc and the cooling effect of the plates.

NOTE the difference in time required to disrupt the arc in a K-35 controller as shown by actual test. This difference means there's considerably less burning of controller fingers, segments, and arcing plates when the equipment is protected with C-G-E Arc Suppressors.

Consider the value of these auxiliary plates in reducing maintenance costs. They reduce carbonization and eliminate much of the trouble from pitting of contacts. Modern controllers are equipped with them to give better, longer service.

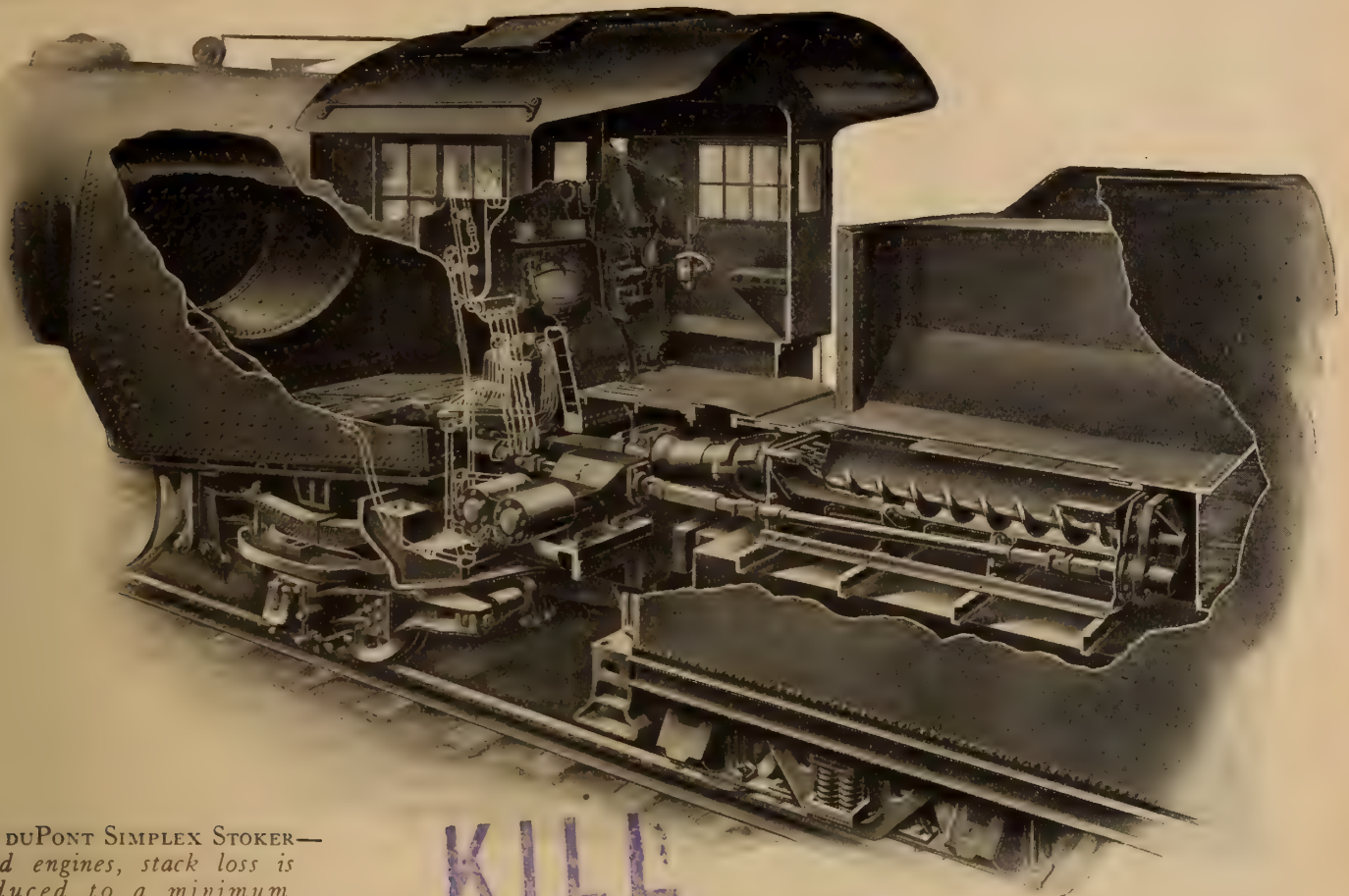
Arc Suppressor Plates can be used to advantage in any C-G-E- controller having individual finger blow-outs. Installation requires only a few minutes. They are inexpensive. Try them.

"Made in Canada" by

Canadian General Electric Co., Limited

HEAD OFFICE  TORONTO

Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Sherbrooke, Ottawa, Hamilton, London, Windsor, Cobalt, South Percupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.



*On duPONT SIMPLEX STOKER—
fired engines, stack loss is
reduced to a minimum.*

KILL
LAST AD.

BURN YOUR COAL DON'T USE IT FOR BALLAST

CINDERS scattered over the right of way indicate the enormous coal loss due to finer particles of coal leaving the stack unburned.

Fires also are costly.

With the duPONT SIMPLEX STOKER the spark loss is less than with hand firing.

The coal is introduced just above the

firebed and well below the Arch where the draft is lowest.

Then downwardly acting steam jets direct the fuel towards the firebed.

Regardless of the kind of coal fired, the duPONT SIMPLEX STOKER insures maximum locomotive capacity and minimum fuel loss.

STANDARD STOKER COMPANY, INC.

Grand Central Terminal, New York, N.Y.
McCormick Bldg., Chicago, Ill. duPont Bldg., Wilmington, Del.
Foundries and Works, Erie, Pennsylvania

DUPONT-SIMPLEX STOKER

Scientific Treatment of Boiler Feed Water



Dearborn

On the Use of Water Softeners

When exceptionally bad waters of certain types are encountered, where analysis shows that treating plants would be the most effective method of handling, Dearborn recommends accordingly.

But if a road has failed to get results by adding various chemicals to the water supplies, without scientific analysis and understanding such as Dearborn provides, it does not follow that a treating plant is needed.

Don't Make This Mistake

There are many districts on which water softeners have been built in the belief that they would eliminate water troubles. In actual operation these plants are only partially effective, but representing an investment of thousands of dollars, they are kept in use, although inadequate, and the equipment and operating cost suffer accordingly.

We Will Investigate For You

We will make a survey of your water conditions, including complete mineral analysis, and submit recommendations looking to the greatest possible benefits for you. If we recommend Dearborn Treatment, we guarantee results. Dearborn Treatment costs less than the chemicals required in a treating plant, and calls for no investment in plant or equipment. There is no expense other than the cost of the treatment.

Roads using Dearborn Treatment have at their command at all times the services of the Dearborn Laboratory and expert engineers.

Operating executives who let Dearborn work with them never have to defend a bad purchase or an ineffective remedy.

Our Standing Offer

Let us make our laboratory analysis of your water supplies. Let us place our recommendations before you. Consider our methods, our laboratory control. Compare the expense and THEN decide. Write us direct, sending water samples.

NOTE: Dearborn Treatment is being used in a number of cases in conjunction with water softeners to give them increased effectiveness

Dearborn Chemical Company
Limited

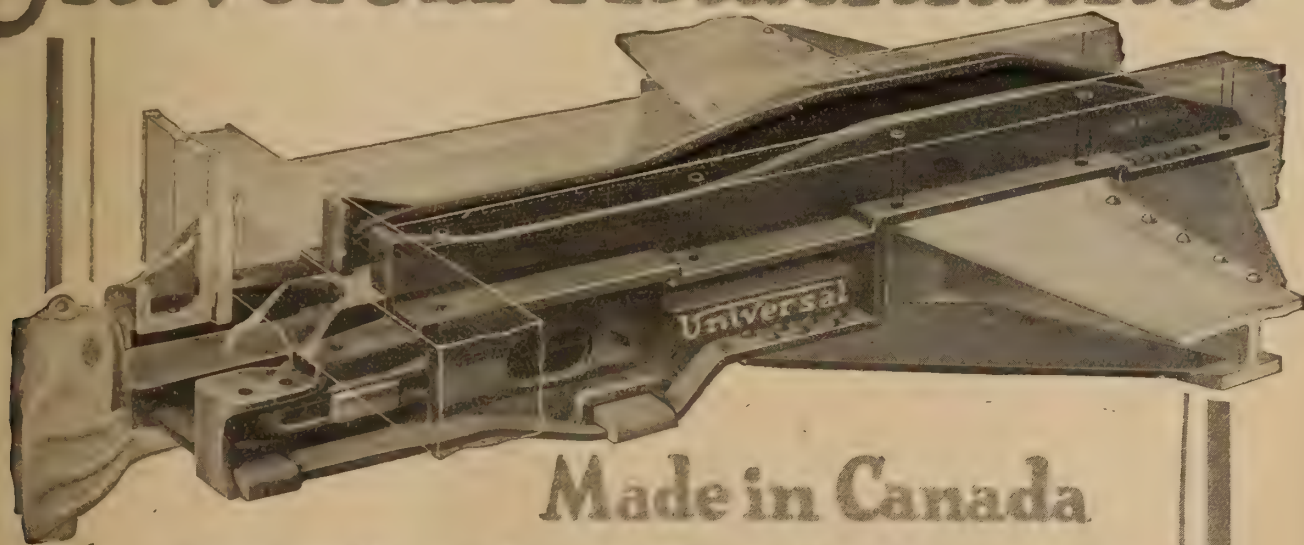
2454-2464 Dundas St. W. TORONTO, CANADA

Cardwell Friction Draft Gear



Made in Canada

Universal Attachments



Made in Canada

Reinforcing Draft Arms
Tandem Spring Draft Arms
Twin Spring Draft Rigging
Frictionless Side Bearings
Draft Lugs or Plates
Cast Steel Yokes

WEBB. G. KRAUSER
TRANSPORTATION BLDG. MONTREAL

The NEWS and NOTHING but the NEWS

A B P STANDARD No. 4

"To refuse to publish 'puffs,' free reading notices or paid 'write-ups'; to keep his reading columns independent of advertising considerations, and to measure all news by this standard: 'Is it REAL NEWS?'"

RATHER sweep-
ing in its pro-
visions but neces-

sary if our papers are to hew to the line marked out by Standard No. 1 of our decalogue, which provides that a member of the A B P must "Consider FIRST the interests of the subscriber."

This does not mean that a publisher may not print news about manufacturers and their products, and mention both by name. The makers and vendors of raw and finished products in this field are a part of the industry, a vital part; you are

entitled to all the information about them and their

goods which will aid you forming intelligent decisions.

It is the business of your business paper to bring you this news, but to present it **wholly** from the standpoint of its NEWS value to you. It is the avowed purpose of every A B P paper to keep its news columns free and clear of the least taint of advertising considerations.

The interests of the subscribers must be paramount.

WHAT IS THE A B P, ANYWAY?

It is a voluntary organization of independent trade, technical and class publications, in Canada and the United States, banded together to promote the highest possible publishing standards. Membership is contingent upon the acceptance and maintenance of its standards.

THE ASSOCIATED BUSINESS PAPERS, INC.

JESSE H. NEAL, Executive Secretary

HEADQUARTERS:

220 West 42nd STREET

NEW YORK CITY

The Canadian Railway and Marine World is a member of the A.B.P., Inc.



Electrification—

The Contact System The Transmission Line The Rail Bonds

The broad opportunity offered in the development of the Contact System (overhead or third rail), of the Transmission Line—in the application of Rail Bonds—in connection with Electrification, should be approached with full appreciation of possible extremes in these phases of the work.

Adaptation of proven electrification materials to contemplated work—and

inventive ability applied to special problems—are part of our service to electrifying roads.

Specialists trained in all phases of the Transmission, Distribution and Collection of power from generator to motor, are at your service. Projects already in operation have profited from this service. Experience and knowledge gained through this actual contact is yours.

Dominion Insulator & Mfg. Co., Limited

(Manufacturing Ohio Brass Co. Products)

Niagara Falls

Ontario



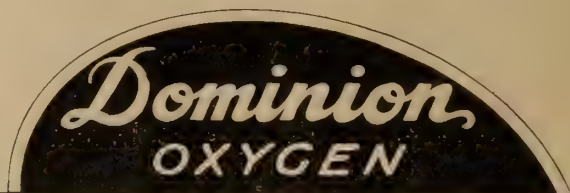
Don't Scrap Machinery—Save it!

THE ready convenience and quick work of oxy-acetylene cutting and welding is saving innumerable dollars' worth of valuable machinery for others—might it not do the same for you?

The purity of Dominion Oxygen and Prest-O-Lite Acetylene assures the hottest flame and the utmost fuel economy.

Dominion Service, through a wide-spread system of distributing points, provides quick shipments of supplies and short hauling distances.

A representative will welcome the opportunity to explain Dominion Service to you.



DOMINION OXYGEN COMPANY LIMITED

General Offices: 80 Adelaide St. East, Toronto

Distribution Points: Hamilton, Merriton, Montreal, Quebec, Shawinigan Falls, Toronto, Welland, Windsor and Winnipeg.



Operating the Welding and Cutting Gas Division of Prest-O-Lite Company of Canada, Limited.

The BERTRAM MACHINE TOOLS Page



No. 4 Single Punch and Shear 12" Throat Motor Drive through belt *Fitted with Plate Shearing Attachments*

CAPACITY

- To punch 1" hole through
1" Plate
- To shear 1" Plates
- To " 6"x1" Flat Bars
- To " 1 3/4" Round Bars
- To " 4x4x 3/8" Angles

**The John Bertram
& Sons Co., Ltd.**

DUNDAS, ONT.

MONTREAL
723 Drummond Bldg.

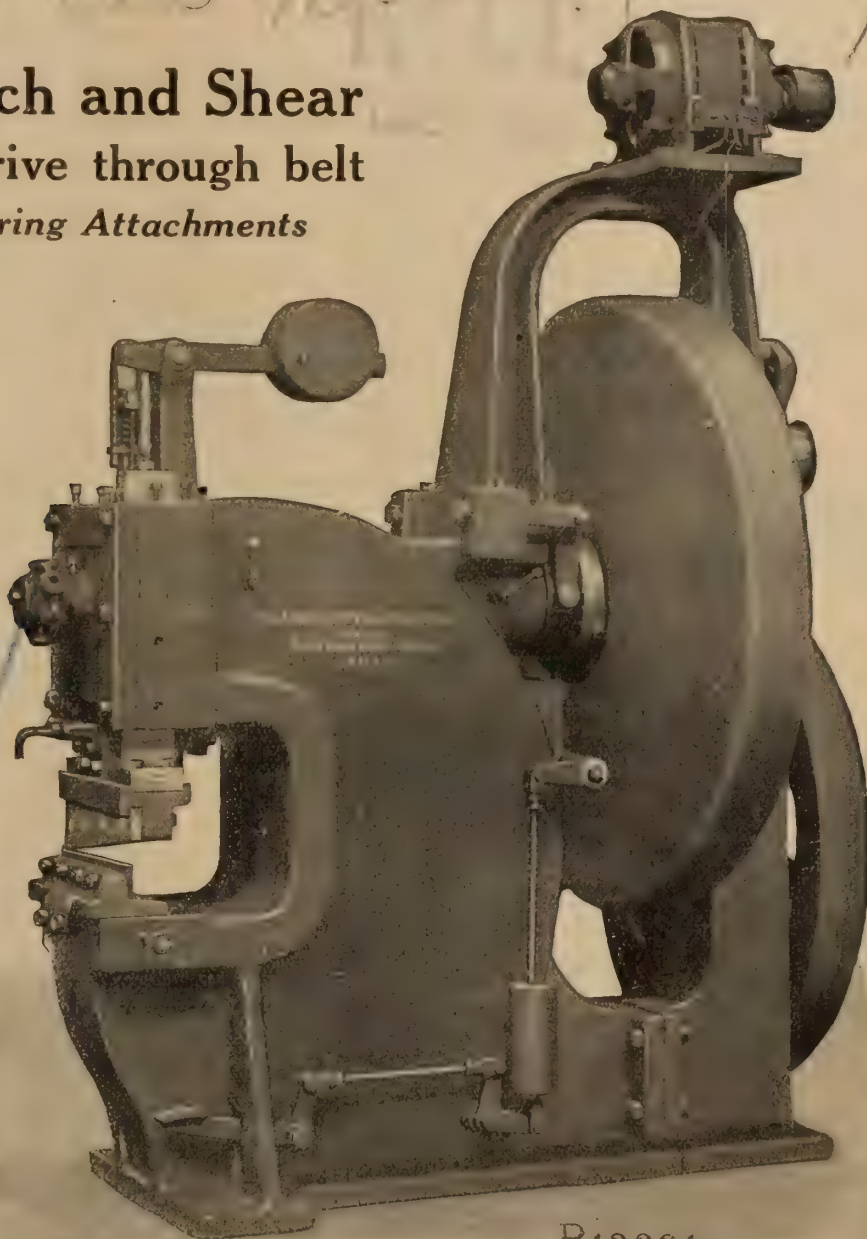
TORONTO
32 Front Street West

VANCOUVER
609 Bank of Ottawa Bldg.

WALKERVILLE
103 1/2 Sandwich Street

WINNIPEG
1205 McArthur Bldg.

HALIFAX
Roy Building



P12224

Let the "Meteor" Safety Train Signal Protect Your Trains



Wanklyn Patent 20-21



**EASILY and QUICKLY
APPLIED---GRIPPING
RAIL FIRMLY**

"Surest and best rear end train protection ever offered"

(Endorsement of Railway Official)

OFFICIAL TEST

As reported to the Board of Railway Commission for Canada, by Chief Inspector of the Explosive Division, Department of Mines, Dominion of Canada:—

The Detonation was found to be reliable under trials, the conditions of which were more severe than those likely to be encountered in actual service.

The volume of sound is well above the average, sharp and arresting, accompanied by a brighter flash than given by any other torpedo tested, and plainly seen from the cab of the locomotive.

The detonation was not affected after the signals had been subjected to special treatment, for exposure to rain, snow, steam, saturated atmosphere and rough usage. No "dangerous" debris was projected at the trials, and the results were superior to those obtained with any other torpedo tested.

The brass wire swivel spring is of a form which renders the operation of attaching the signal to the rail simple and quick and cannot be knocked off by the wheel of the locomotive.

After tests under service conditions on the Canadian Pacific Railway, from the Atlantic to the Pacific, practical railroaders affirm that no engineman can possibly run over one of these signals and fail to recognize that a signal is intended. This opinion from men who are familiar with the use of track signals fully endorses all that has been said in favor of the "METEOR."

The "METEOR" differs from all other torpedoes. It appeals to three senses—Hearing, Seeing and Smelling—and thereby makes assurance trebly sure.

The "METEOR" has been adopted as "Standard" on the Canadian Pacific Railway over the entire 18,000-mile system, also by the Grand Trunk Railway and other Canadian Railways.

CANADIAN EXPLOSIVES LIMITED

Head Office: 120 St. James St., Montreal

RAILWAY TRACK MATERIAL

**Angle Bars
Tie Plates
Spikes
Bolts
Nuts**



HAMILTON MONTREAL

Canada's Commerce Carriers

Canadian Government Merchant Marine, Limited



REGULAR FREIGHT, PASSENGER and MAIL SERVICE

Every three weeks from Montreal in Summer and Halifax, N.S., in Winter,
To Bermuda, Bahamas, Jamaica, and British Honduras.
Reasonable Fares. Superior Passenger Accommodation. Excellent Cuisine.
VACATION CRUISES (Summer and Winter)

REGULAR FREIGHT SERVICES

From Montreal and Quebec in Summer
From St. John, N.B., and Halifax,
N.S., in Winter

To London and Antwerp, Cardiff and Swansea,
fortnightly.
To St. Kitts, Antigua, Barbados, Trinidad and
Demerara, fortnightly.
To Australia and New Zealand, monthly.
To Charlottetown, P.E.I., and St. John's, Nfld.,
every 21 days.

From Vancouver, B.C.
To the United Kingdom (Avonmouth).
To Australia and New Zealand, monthly.
To China and Japan, monthly.
To India and Straits Settlements.

Pacific Coastal Service.
(Sailings Weekly)

From Vancouver and Vancouver Island ports,
To Seattle, San Francisco, Wilmington, Blain-
eys, Nanaimo, Powell River, Ocean Falls,
Astoria, San Pedro, Victoria.

B. C. KEELEY, Pacific Coast Manager, Vancouver, B.C.
WM. PHILLIPS, European Manager, 17-19 Cockspur St., London, S.W.I., Eng.

F. G. WOOD, General Ontario Freight Agent, Toronto.
W. A. CUNNINGHAM, Traffic Mgr., Montreal.

R. B. TEAKLE, General Manager, 230 St. James St., Montreal.



Canadian National Railways



HAVE YOU TRIED OUR

BLUE STRAND?

The Significance of that Blue Strand
IS YOUR ASSURANCE OF
Unvarying High Quality in WIRE ROPE

THE DOMINION WIRE ROPE CO., LIMITED

Head Office: MONTREAL

Branches: TORONTO, WINNIPEG

The Improved Hart Convertible Car



Old Level Floor Car. Note Ballast Left by Plow.

For
Ballasting
Center
Dump
or
Side Dump

For Coal
or General
Service



Improved Car Unloaded by Top Plow. Has no Ballast to be Shovelled out by Hand.

The Car With Gravity Discharge Pockets
The HART-OTIS CAR CO., Limited, MONTREAL



"Jordan Spreader"

For Snow and Ice Cleaning
nothing equals the

"JORDAN"

Cleans Solid Ice from
between the Rails

Indispensable for Cleaning
R.R. Yards

QUICK SHIPMENTS

Branch:
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F.H. Hopkins & Co.
Limited

Head Office:
MONTREAL

They Cut Clean and Stay Sharp

You don't mind discarding a file that has become dull, when you know it has given full service.

You know it pays to stop using a slightly dull file. But you want maximum use out of it first. You get this maximum use when you buy one of these brands.

**Kearney & Foot
Great Western
American
Arcade
Globe**

FILES

are the standard
of File Quality

Made in Canada by

**Nicholson File
Company**

PORT HOPE - ONTARIO



GREENING WIRE ROPE

*When Time Is Money
You Can Depend Upon
Greening Service*

The B. Greening Wire Company carry ample stocks of all their standard products at warehouses in Hamilton, Montreal and in Winnipeg.

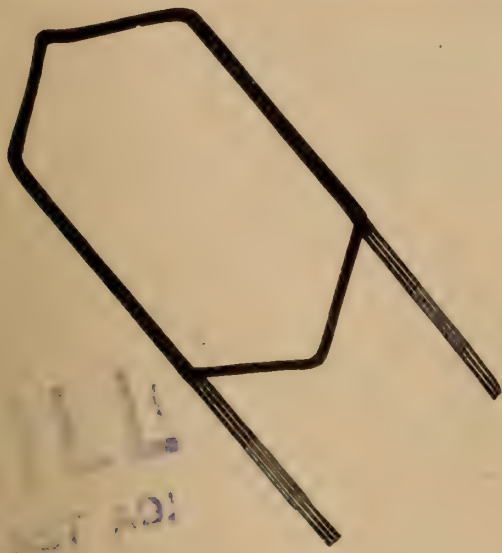
This enables them to give prompt service and to make immediate shipments.

If you are in a hurry for any wire products, it will pay you to wire or telephone our nearest office.

**Wire Rope Wire Cloth
Steel Chains**

Write for our Graphic Catalogues, or we will be glad to supply you with any special data you require governing the use of any of our products.

The B. Greening Wire Co., Limited
Hamilton, Ontario
Montreal Winnipeg



Save Money by Purchasing Canadian Made Armature Coils

For some years we have been giving special attention in our shop to the manufacture of coils for electric railways, and every coil is subject to rigid inspection before shipment.

Many electric railways we have been supplying report splendid service with them, and we can refer you to many satisfied customers.

A stock of standard railway coils is always kept and we can also duplicate any sample coil and make quick delivery. Give our coils and service a trial.

**Railway and Power Engineering
Corporation Ltd.**

133 Eastern Avenue Toronto

Branches: Montreal

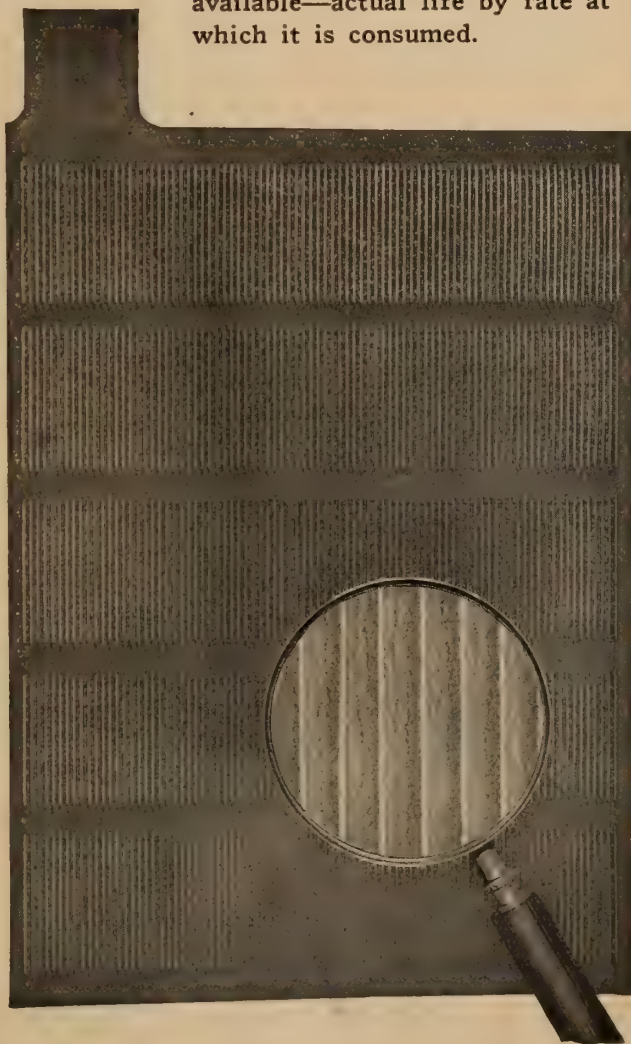
Winnipeg

New Glasgow

Putnam

STORAGE BATTERY

Reserve lead determines plate life—possible life by quantity available—actual life by rate at which it is consumed.



THE
SAFETY
CAR HEATING AND
LIGHTING
COMPANY



MONTREAL

NEW YORK

Know the best Brush *for* each Generator or Motor

THE brushes must be *exactly right* or the machine cannot perform with its proper efficiency. The commutator should be silent, smooth-running and cool—always.

**KILL
LAST AD.**
Columbia Data Sheet Service will help you secure the correct brushes to suit the individual requirements of each generator and motor. This service eliminates your brush problems entirely. The Columbia Pyramid Brushes specified are guaranteed to be *exactly* right.

And Columbia Data Sheet Service is at your command whether you have one brush equipped machine or many. Avail yourself of it.

CANADIAN NATIONAL CARBON CO.
Limited
MONTREAL TORONTO WINNIPEG



Look for this Mark
on your Brushes

MG7

More Light— Better Business For the Publisher

THE more light the publisher gives the advertiser on his publication—the greater consideration he receives when it comes to placing advertising.

The facts embodied in an A.B.C. report are those which the advertiser wants to know—facts that he *must* know to buy space intelligently. He cannot afford the time or expense necessary to collect them either by correspondence with the publisher or by financing his own investigation.

Therefore, the uniform, easily-accessible A.B.C. form, packed with complete dependable facts, is a ready solution to the problem of how to locate the most desirable mediums with the minimum of effort and expense.

The long-established commercial rating agencies have furnished financial information for years. Banks are audited periodically. The Audit Bureau of Circulations performs a similar function by collecting and verifying circulation information for the advertiser.

Publishers subscribing to the A.B.C. standards are helping to stabilize and organize advertising in the way that, by long experience in other commercial lines, has proved to be Good Business.

The Canadian Railway and Marine World is a member of the A.B.C. and would be pleased to submit a copy of the latest circulation report

The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO and KINGSTON—ONTARIO—CANADA

Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



S.S. CANADIAN WARRIOR

Two Dry Docks
and
Shops
EQUIPPED TO
OPERATE
Day or Night
on
Repairs

ECONOMIZE

If you are a Contractor—Engineer—Bridge Builder—Quarryman—or if you operate Mines—Brickyards—Railroads—Sand or Gravel Companies—we want you to write us at once, because we will save you time and money.

We are disposing of the Equipment and Supplies which can be released from the Queenston-Chippawa Development—and truly—this means to you—the greatest opportunity imaginable to secure almost anything you might desire in Construction Equipment and Supplies at interesting prices.

Air Compressors—Air Aftercoolers—Bar Benders—Blowers—Boilers—Buckets—Concrete Cars—Cars—Channellers—Concrete Chuting and Mixers—Hoppers and Bins—Conveyors—Crushers—Drills—Hoisting Engines and Electric Hoists—Locomotives—Pile Hammers—Pumps—Steam and Electric Shovels—Tractors—Motors—Transformers. Construction and Camp Supplies of every description. In fact, almost everything imaginable.

Operated by
Canadian Equipment
Co. Limited
Montreal

Hydro Salvage Syndicate

P.O. Box 109 Niagara Falls, Ontario

Operated by
F. H. Hopkins & Co.,
Limited
Toronto - Montreal

*in
other
words*

KILL
LAST AD.

allow us to save you money

Just ask for copy of our "Sales Inventory" and let us prove what we can do.

For Railroad, Hotel and Steamship Upholstery CHOOSE "CHASE" MATERIALS



The trade mark "Chase" stands for seventy-five years' leadership in manufacturing.

CHASE GOAT BRAND CAR PLUSH: This product, made from the fleece of the Angora Goat, has been the choice of railroads and steamship lines for over thirty years. It is **DURABLE—FAST IN COLOR—RICH APPEARING—MOST SANITARY.**

Recently there was exhibited a car seat upholstered with our Mohair Plush, and the seat had already been in service twenty-five years.

CHASE LEATHERWOVE: The modern, leather-like upholstery material for use where flexible toughness is the one thought.

For cleaning Plush and other upholstery fabrics choose **CHASE PLUSH RENOVATOR**—That remarkable liquid cleanser which does not start the dyes or injure the fabric. **GUARANTEED** effective, but **NOT HARMFUL.** Write for samples.

L. C. CHASE & CO., BOSTON, New York, DETROIT, Chicago, San Francisco

Buffalo Brake Beam Company

BUFFALO BEAMS ARE BEST BEAMS

Offices:

NEW YORK
32 Nassau Street

ST. LOUIS
Syndicate Trust
Bldg.

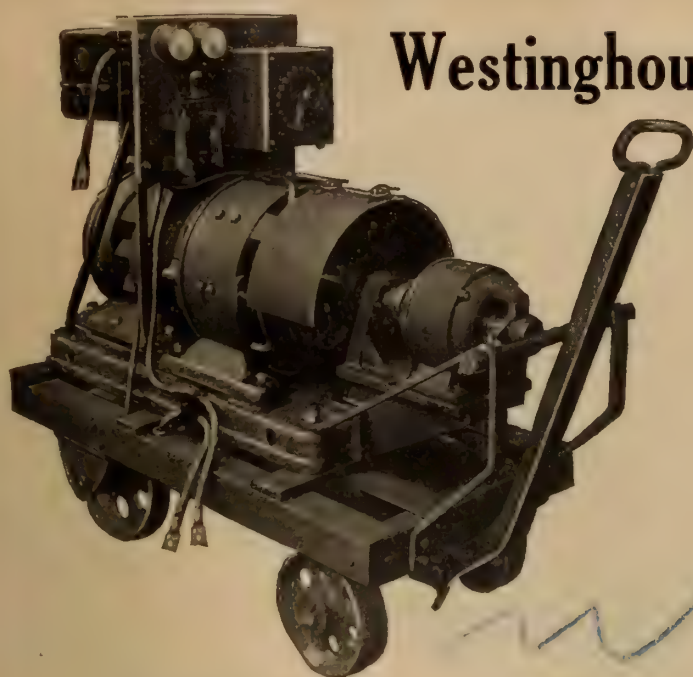
MONTREAL
10 St. Antoine St.



Works:
BUFFALO,
N. Y.

Canadian Works: HAMILTON, ONT.

Brake Beams for all Classes of Cars, Locomotives and Electric Equipment



Westinghouse Portable Arc-Welding Outfit

Westinghouse Arc-Welding Outfits

Do More Electric Welding

Westinghouse Outfits cut and weld. Build, save, and salvage. They will contribute ever-increasing thousands of dollars a year to your earnings.

Arc Welding should be a highly-organized department in your shops.

It may be a simple, portable one-man unit that can be hurried to the repair of a locomotive on the rails, or anywhere it is needed.

Our engineers can supply you with both the knowledge that extends its profitable use, and with reliable welding outfits that economize operation.

Our nearest office will give you particulars.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Bank of Hamilton Bldg.
HALIFAX, 105 Hollis Street
CALGARY, Canada Life Bldg.

MONTREAL, 285 Beaver Hall Hill
FORT WILLIAM, Cuthbertson Block
VANCOUVER, Bk. of Nova Scotia Bldg.

OTTAWA, Ahearn & Soper, Ltd.
WINNIPEG, 158 Portage Ave. E.
EDMONTON, 211 McLeod Bldg.

Repair Shops:

MONTREAL—512 William St.
WINNIPEG—158 Portage Ave. E.

VANCOUVER—1090 Mainland St.

TORONTO—366 Adelaide W.
CALGARY—316 Third Ave. E.



THE STAR BRASS WORKS
— KALAMAZOO, MICH. —

The Star Brass Works

Largest Exclusive Trolley Wheel Makers in the World.

Kalamazoo

Michigan

Canadian Representatives:

Northern Electric Company, Limited

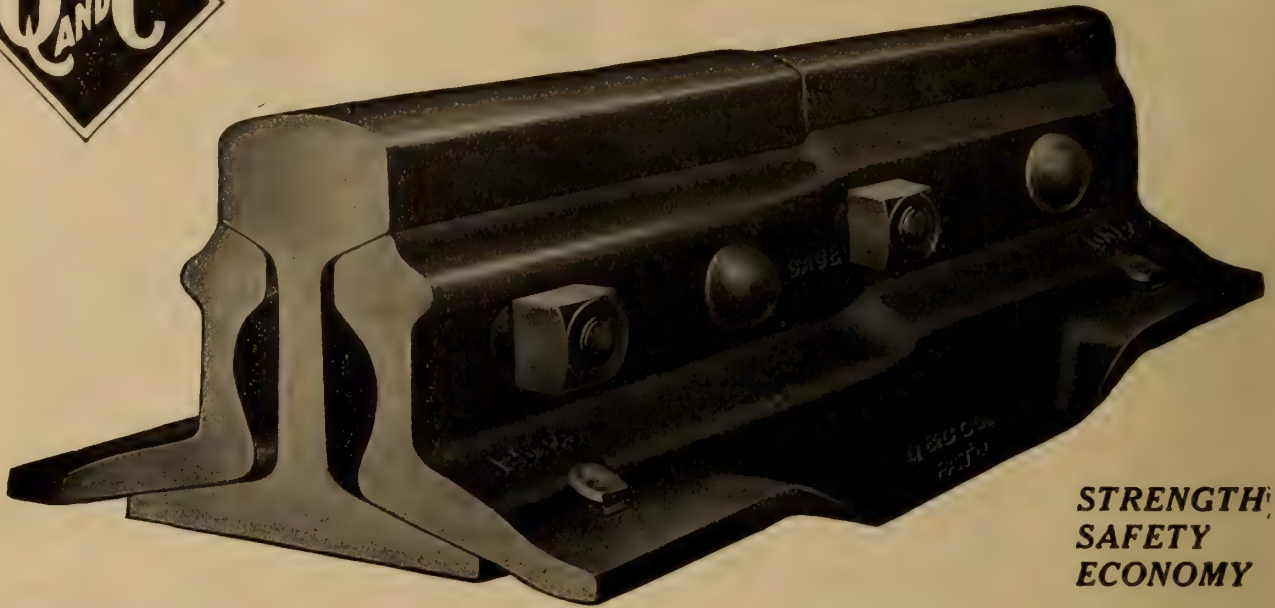
Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal
352 Donald St., Winnipeg**





Q & C Rolled Steel Step Joints



**STRENGTH
SAFETY
ECONOMY**

The General Supply Co. of Canada, Limited

356 Sparks Street, Ottawa

Montreal

Toronto

Vancouver

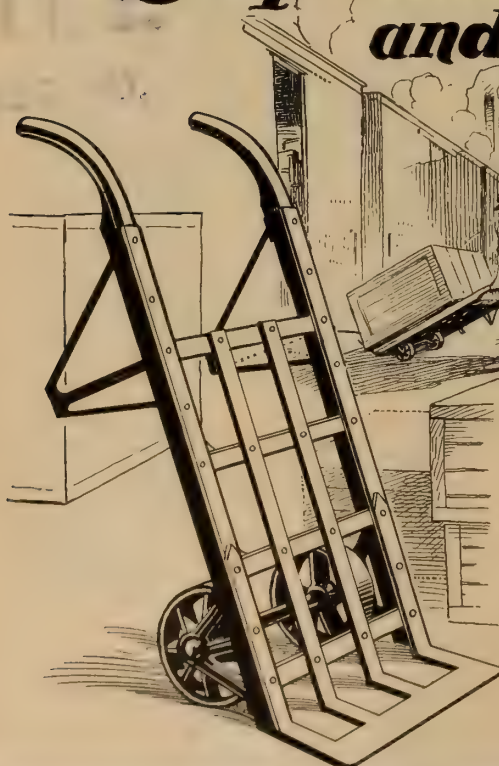
North Bay

Moncton

Winnipeg

*Supreme in Strength
and Wearing Qualities*

**FAIRBANKS-
MORSE
TRUCKS**



for all purposes.

Made of best materials and correctly designed to ensure ease of handling.

We also build trucks of special design at short notice.

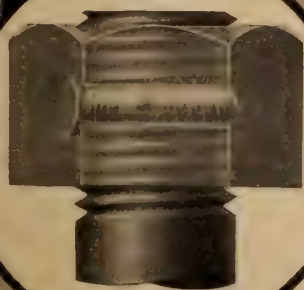
113

**The Canadian
Fairbanks-Morse
Company — Limited**

ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, WINDSOR,
WINNIPEG, REGINA, CALGARY, VANCOUVER, VICTORIA.



FLANNERY SPECIALTIES



INCLUDE

F. B. C. Welded Flexible Staybolts
 Tate Threaded Flexible Staybolts
 Forged Crown Stays (Taper or Button Head Type)
 Rigid Water Space and Radial Stays
 Realock Nuts—Realock Grease Cups

FLANNERY BOLT COMPANY
 Vanadium Bldg.—PITTSBURGH, PENNA.



Newfoundland Dockyards Limited

Proprietors

(REID NEWFOUNDLAND COMPANY LIMITED)
 St. John's

610 Feet Graving Dock

WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT
 DEEP WATER PIER

SHOPS EQUIPPED WITH MODERN
 MACHINERY

PNEUMATIC TOOLS, ELECTRIC AND
 ACETYLENE WELDING PLANT
 IN OPERATION

VESSELS PAINTED WITH ANTI-
 FOULING PAINTS

Rates on Application

**KILL
LAST AD.**



CLEARING THE ROAD

FIFTEEN miles per hour within the first train length is the acceleration attained by one road with Booster-equipped Mikados hauling 7,000 tons.

Consider the effect of this acceleration in keeping terminals free from the obstruction of slow-starting freights.

Consider the effect of this faster operation in keeping the long grades clear.

Consider the effect on schedules if this accelerating power is applied to passenger trains to compensate for station work. It will eliminate the danger of excessive speed to regain lost time.

Then you will appreciate why a thousand Boosters have been bought by railroads keen for improvements in operation and a better general average at the end of their year.

**FRANKLIN RAILWAY SUPPLY COMPANY
OF CANADA, LIMITED**

Transportation Bldg., Montreal

No maintenance for this 10-year old **THERMIT RAIL WELD**



Thermit weld installed 1912 on Shady Ave., Pittsburgh, between 5th and Penn Aves.

This Thermit rail weld is one of many installed in Pittsburgh over ten years ago. The running surface of this rail has been considerably worn down by years of traffic, but the condition of the rail at the Thermit weld is just as good as elsewhere.

Thermit welds absolutely eliminate the joint. "The first cost is the last cost."

METAL & THERMIT CORPORATION
15 Emily Street, Toronto

General Offices:
120 Broadway
New - York

Apply Thermic Syphons at the Next Shopping



Hauling capacity is often handicapped by lack of steam.

But how can steam-making ability be increased?

If the grates are being forced to their limit, only one thing remains—to quicken the circulation of water and thereby stimulate heat transfer.

This is the function of the Nicholson Thermic Syphon.

It not only speeds circulation but also adds firebox surface where it does the most good.

Apply Syphons to any engine and 10 to 20% greater steaming power results.

Here is the possibility of a large increase in earning power from every locomotive. Start it working at the next shopping period.

LOCOMOTIVE FIREBOX COMPANY

140 South Dearborn Street, Chicago, Illinois

THE HOLDEN COMPANY, LIMITED

Montreal

Toronto

Winnipeg

Vancouver

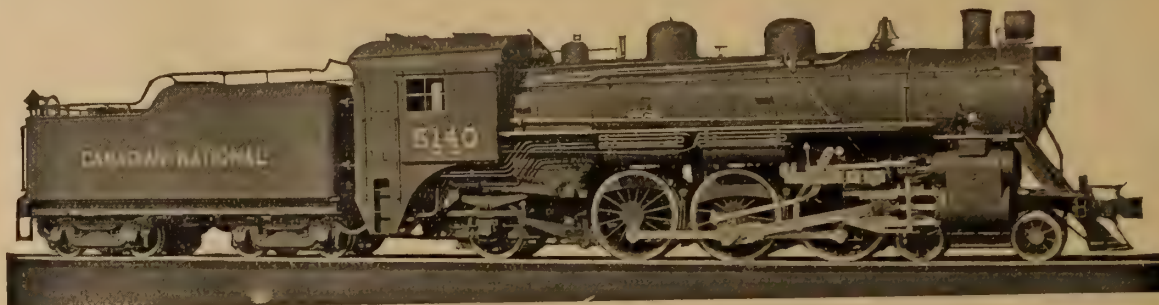


THE CANADIAN NATIONAL RAILWAYS, traversing the nine Provinces of the Dominion of Canada, serve the Federal and each of the Provincial capitals, and link up the great agricultural and industrial areas with distribution centres and seaports on the Atlantic and Pacific.

The finest sporting and resort territories are reached, including Jasper National Park and other resorts in the Canadian Rockies; Algonquin Park, Muskoka Lakes, Georgian Bay, Lake of Bays, Kawartha and Rideau Lakes, Timagami, Nipigon and Minaki, which have an unlimited appeal to the Tourist.

The Canadian National route through the Rockies skirts Canada's highest peaks at the easiest gradient and lowest altitude of any transcontinental route.

CANADIAN NATIONAL RAILWAYS



4-6-2 TYPE LOCOMOTIVE

Built for the Canadian National Railways

We are specialists in building locomotives.

We build all types and sizes, also all kinds of spare and repair parts for locomotives and tenders.

Our experience puts us in a position to give you expert advice as to what particular type and size of locomotive is best suited to your needs.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

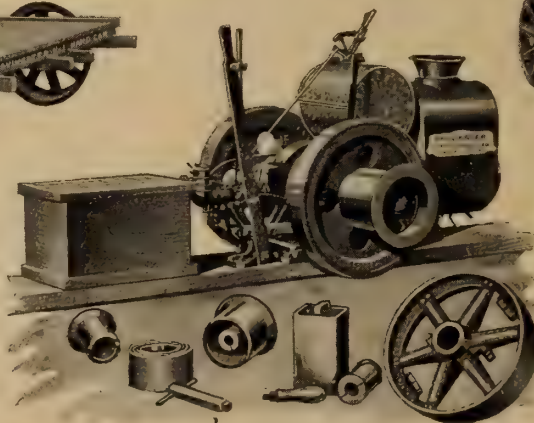


No. 1 Sylvester Standard Section Hand Car, fitted with Hyatt roller bearings or plain bearings and 20 in. pressed steel wheels.

Sylvester Manufacturing

Company Limited

LINDSAY - ONTARIO



No. 3 Sylvester Motor Car fitted with engine and Angle Iron Seats. This makes a complete outfit for Section Foremen, B&B Supervisors and for heavy duty. This car is very strongly braced and trussed and will handle heavy loads.



No. 4 Sylvester Standard Section Push Car. Fitted with extra large platform.

Change your hand car into a motor car by the use of a Sylvester Engine. Built in 4, 4 1/4 and 6 H.P. size.

Sold on Easy Payment Plan.

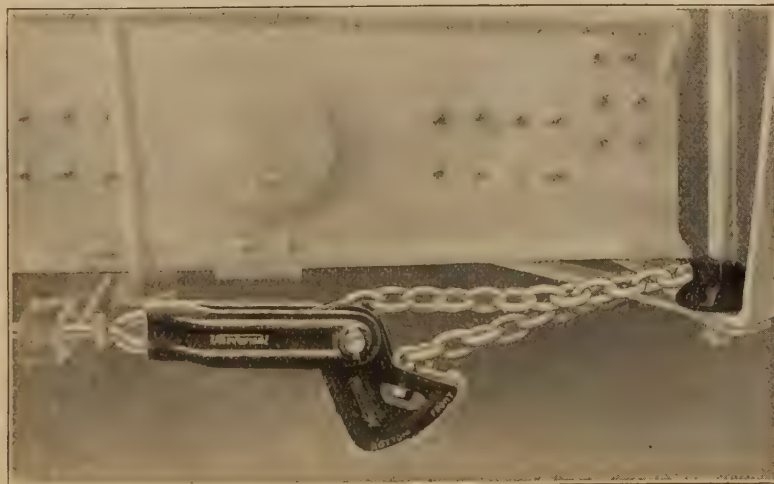
Write for prices and catalog today.



No. 7 Light Motor Car fitted with 4 H.P. Engine and seat. Weight 490 lbs. This is a new principle in motor car value and construction.

Universal

HAND BRAKE ATTACHMENT



DESIRABLE ON ANY CAR-A REAL NECESSITY ON MANY

MADE IN CANADA

WEBB G. KRAUSER

Transportation Bldg.

Montreal, Canada

PAGE-HERSEY TUBULAR POLES

MADE IN CANADA

FROM P&H PIPE



All sizes and weights
for the various purposes required and
to suit all styles of fittings.

NEAT — UNIFORM — ORNAMENTAL
DURABLE — STIFF — STRONG
ENDS CHAMFERED TO SHED
WATER

Ideal for
ELECTRIC LIGHT—POWER
TELEPHONE—TELEGRAPH
AND STREET RAILWAY LINES
AND FLAG POLES

PAGE-HERSEY TUBES, LIMITED Head Office: 100 Church Street - Toronto, Canada



Sold in eighteen different sets, in sizes to cut from 1/4 in. to 1 in. thread, and furnished to conform to U.S., S.A.E., and Whitworth thread standards.

PRATT & WHITNEY Screw Plate Sets

These reasonably-priced sets of standard P & W taps and dies, consist of our regular product made up in various combinations to meet the requirements of the small shop, garage, service station and general tool-room.

They are unequalled for fast, accurate threading of all metals and will be found invaluable whether used occasionally or for every-day work.

The taps and dies that go into P & W Screw Plate Sets are of a high quality unusual in such general purpose outfits.

The taps are all made with the famous "con-eccentric" land—an exclusive Pratt & Whitney feature—that permits their re-sharpening on the face of the cutting edge without change in size.

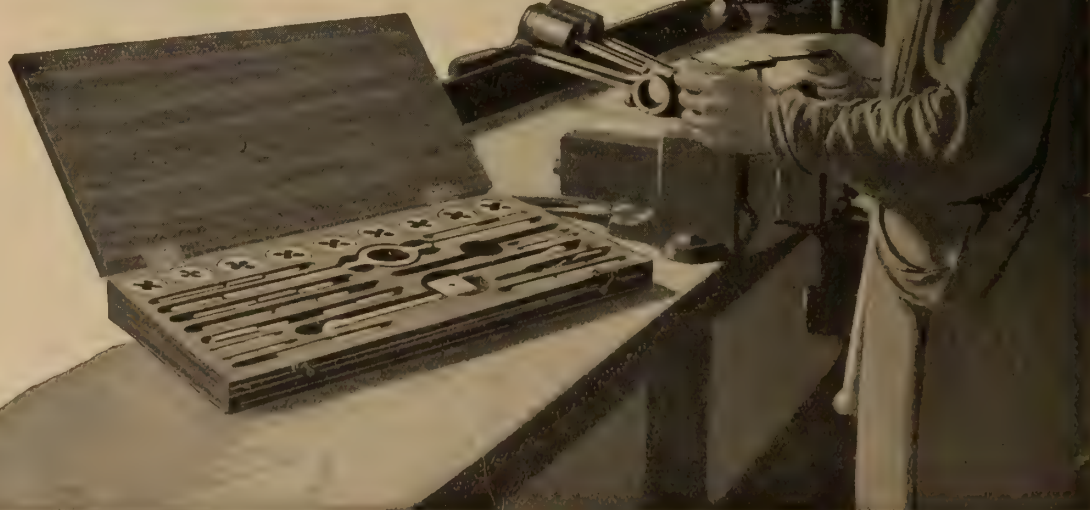
PRATT & WHITNEY CO. OF CANADA LIMITED

Works: Dundas, Ontario

MONTREAL
723 Drummond Bldg.
WALKERVILLE
103 1/2 Sandwich St.

HALIFAX
Roy Building
WINNIPEG
1205 McArthur Bldg.

TORONTO
32 Front St. West
VANCOUVER
B. C. Equipment Co.



Canadian Railway and Marine World

November, 1923.

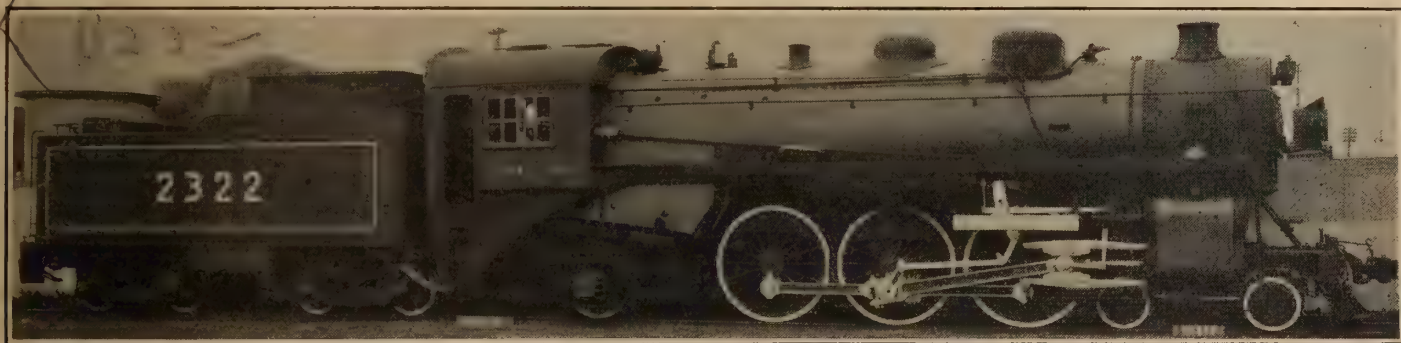
Pacific Type Locomotives, Canadian Pacific Railway.

For some years prior to 1919, the C.P.R. had two classes of Pacific type passenger locomotives in service, the designs being very similar except in driving wheel diameter. On one class these wheels were 75 in. in diameter, and on the other 70 in., the tractive power developed by the former being 32,200 lb. and by the latter 34,500 lb. With the increase in passenger train car weights, and in the number of cars per train, locomotives of greater tractive power became necessary, and, as a result, after extended study of all requirements and conditions, which included operation under severe weather conditions, and the limiting factors of bridge and right of way restrictions, the G-3 and G-4 Pacific type locomotives were introduced in 1919, they also having 75 and 70 in. driving wheels, respectively, but both having tractive power greatly in excess of that of the former Pacific type. The G-3 type locomotives had 25 x 30 in. cylinders,

particularly during winter, the desirability of adequate locomotive boiler capacity in relation to cylinder requirements cannot fail to be evident. Where fast schedules have to be adhered to with heavy trains, reserve boiler capacity is always of advantage, but with the temperature at zero or below, the coal often containing a percentage of snow, and being frozen together, the steam heat line supplying a dozen or more passenger cars making big demands on the boiler, the air compressor requiring more steam on account of greater train line leakage, and with train resistance materially increased, necessity arises for greater cut-off and more throttle opening than would ordinarily be required, and it is then that large boiler capacity demonstrates its true value. That the C.P.R. fully recognizes this is shown by the fact that its latest Pacific type locomotives have boilers of more than 100% capacity (the figure being 101.8%, Cole's ratio) in

tube sheets are 18½ ft. apart, the front and back sheets being of ⅝ and ½ in. plate, respectively, and the combustion chamber is approximately 26 in. deep. The entire boiler exhibits an application of study in its design which has been successful in producing a steam generating unit which is not only highly efficient, but which experience with the locomotives built in 1919 demonstrates is low in maintenance cost.

The firebox door ring, flanged to large radius, projects through the flange opening in the back head, and is riveted thereto, this type of construction closely adhering to previously used standards on the C.P.R., it being the experience that with this design expansion and contraction produce the minimum of deterioration in the sheets. The fire door is the Franklin no. 8, air operated, the locomotives being hand fired. The brick arch with which the fire box is equipped is carried on 5 arch tubes of 3 in. out-



Pacific Type Locomotive, Canadian Pacific Railway.

and tractive power of 42,600 lb., and the G-4 locomotives, with 24½ x 30 in. cylinders, had tractive power of 43,700 lb. Ten G-3 and 18 G-4 locomotives were built at the C.P.R. Angus shops, Montreal, from 1919 to 1921, the G-3 being numbered in the 2300 series, and the G-4 in the 2700 series. After both classes had been tested thoroughly in operation, under all conditions and on many divisions, the G-3, with 75 in. driving wheels, were decided on as the C.P.R. standard for Pacific type passenger power.

As stated in Canadian Railway and Marine World for February, the C.P.R. ordered 16 Pacific type locomotives from Montreal Locomotive Works, the chief dimensions of which were given in our March issue. These locomotives are of the G-3c class, and in the main the specifications are the same as those of the G-3 built in 1919 at Angus, the chief differences between the two lots being in details of tank construction, design of tank holding-down brackets, commonwealth cast steel cradle, and in some minor engine details. The latest locomotives have a total weight of engine and tender of 489,000 lb., weight of total engine 300,500 lb., weight on drivers 181,500 lb., tractive power 42,600 lb., driving wheels 75 in. diam., cylinders 25 x 30 in., and factor of adhesion 4.26.

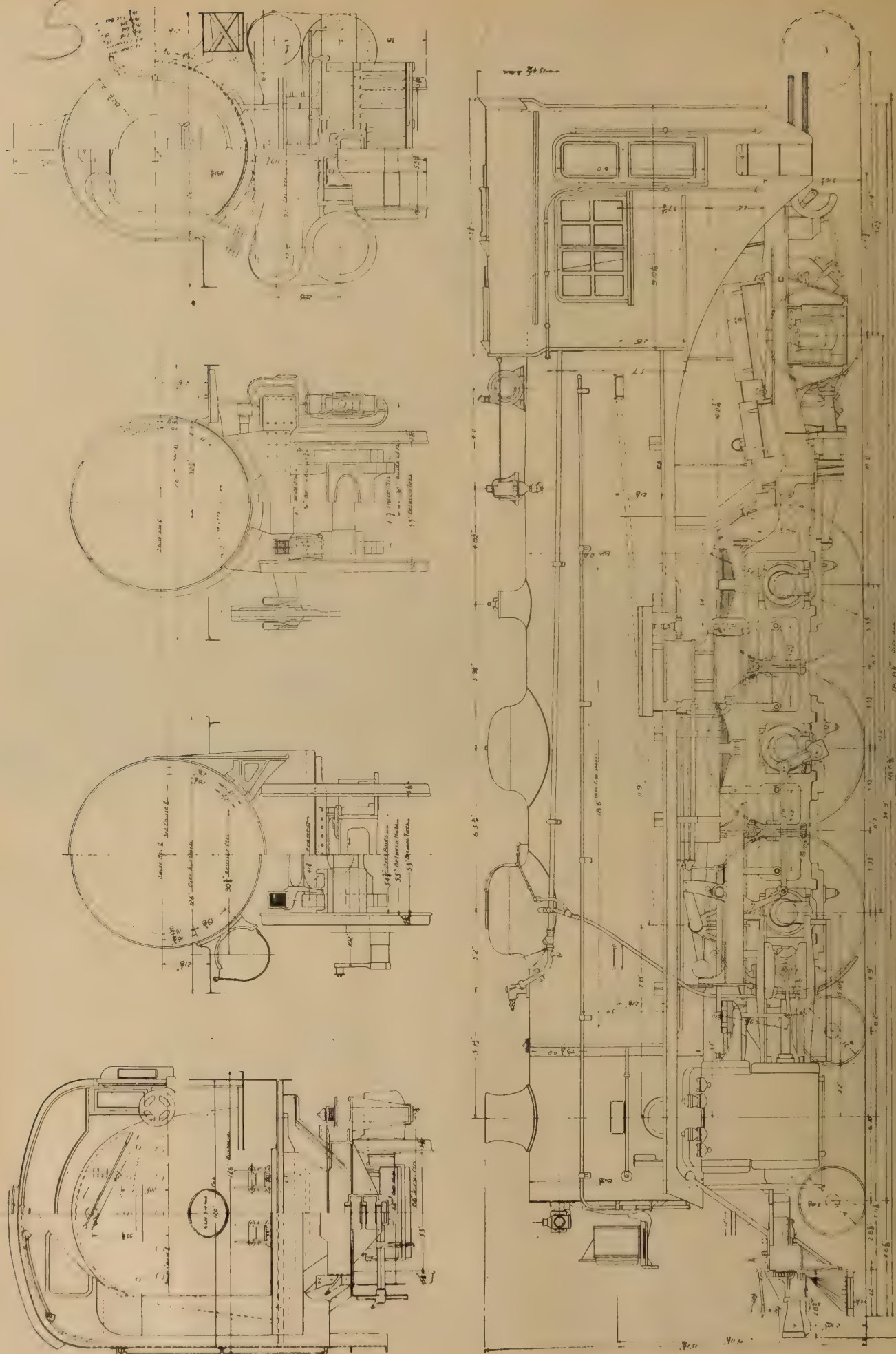
To anyone familiar with operating conditions on Canadian railways, par-

relation to cylinder requirements. The result of this relationship is that these locomotives are exceptionally free steamers, and there is no doubt that their steam making ability under adverse conditions will add greatly to the efficiency, not only of passenger train operation itself, but of operation on a complete division, by reason of trains of inferior class or right having their movements governed in such a great degree by passenger train schedules.

The boiler is of the extension waggon bottom type, with radial stayed firebox, and combustion chamber, and conforms closely to a design which has been standardized by the C.P.R. for locomotives equipped with trailing truck. With the dome located on the second course, not only has it been possible to simplify seam construction, but a shorter dry pipe has been made practicable, and increased steam storage space provided. The boiler is built in 3 courses, the back one being of ⅞ in. plate and 88 in. outside diameter, the taper one of ¾ in. plate and the front one of 11/16 in. plate and 79½ in. outside diameter. The exact location of the dome—one piece type and 33 in. inside diam.—on the second course is shown in the accompanying illustration of the right hand side of the locomotive. The boiler barrel opening is reinforced with a ¾ in. plate, flanged 3¾ in. deep all around. The

side diameter, the depth between arch and grates being such that firemen need not experience any of the difficulty in carrying a proper fire which is sometimes met with, particularly by inexperienced men, in arch-equipped locomotives with shallow fire boxes. The crown sheet, of ⅝ in. material, is continuous, extending to the end of the combustion chamber, and the side sheets, of 5/16 in. material, are welded to the crown sheet. The combustion chamber ring, of ¾ in. plate, is riveted to the back tube sheet, and, at its back edge, to the inside throat sheet, the sides of which are flanged. The wrapper sheet is of 9/16 in. material. The grates are of the butt finger type, and no dump grate is installed. The brackets used for supporting the grates are also used as ash pan supports. The superheater is type A, and there are 38 5½ in. superheater flues. The boiler is fed by two Hancock inspirators, type A, no. 10.

A feature of these locomotives is the rugged strength and solidity which have been built into the cylinder castings and their frame connections. In addition to the cylinders being double bolted through front and back flanges and saddle flanges, each cylinder casting is equipped with a flange at the back, through which pass bolts bolting the casting to a special lug created by a forward extension of the front end of the main frame. By



Elevation and Sections, Pacific Type Locomotive, Canadian Pacific Railway.

this means, great additional rigidity as between frames and cylinder castings is secured. The cylinders themselves are 25 x 30 in., and steam admission and exhaust is controlled by piston valves of 14 in. diameter and 7 in. travel, set so as to have $1\frac{1}{2}$ in. lap, $\frac{1}{4}$ in. lead and $\frac{1}{4}$ in. exhaust clearance, this setting producing exceedingly smart performance. The valves are actuated by Walschaert gear of compact and strong design. The cylinder castings are designed so that the horizontal distance between valve chest center lines is 10 in. greater than that between the center lines of the cylinders. Minimum resistance to steam flow in the casting admission and exhaust passages has been secured by making the passages of ample area and with easy bends. The cylinders are fitted with railway standard cock operating mechanism.

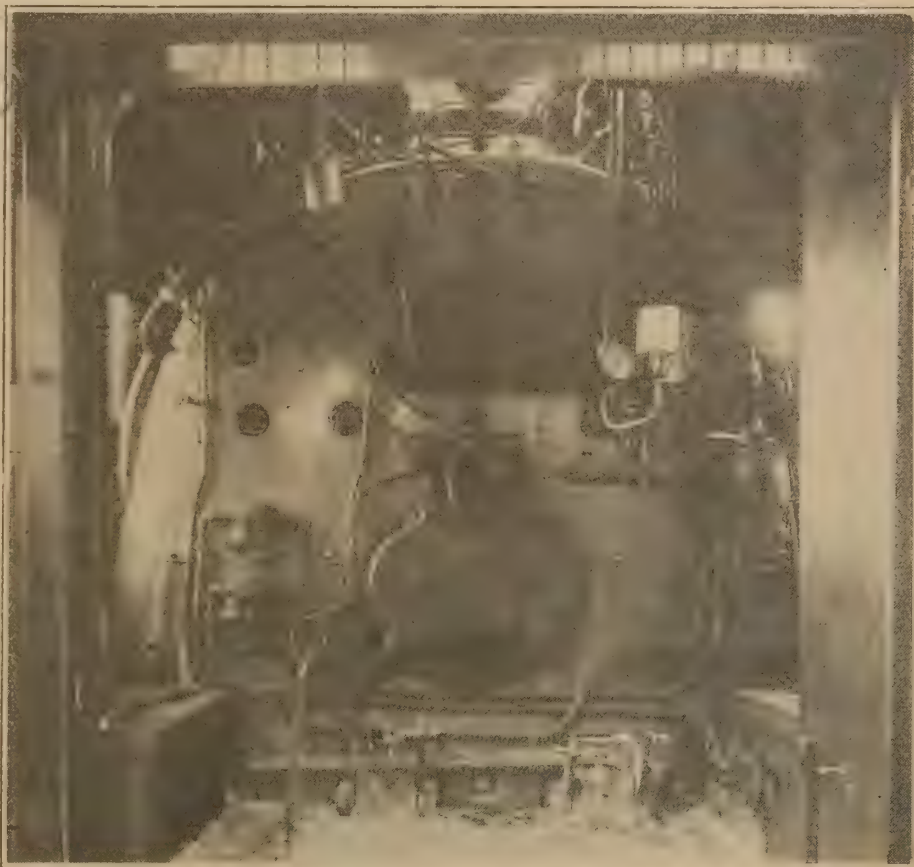
The frames of these locomotives are of vanadium cast steel, and of the single front rail type. They are 5½ in. deep between the pedestals, and 5¾ in. deep, the bottom rail being 4¼ in. deep. The lugs at the frame front ends, for bolting to back flanges on cylinder castings, have been mentioned above. At the back, the frames are designed to accommodate the Commonwealth cast steel cradle casting. The locomotives are equipped with the Vaughan trailing truck, and the cradle casting constitutes the first one-piece cradle to be used with a trailing truck of this type.

The good riding and tracking qualities which these locomotives exhibit are produced, in no inconsiderable degree, by the C.P.R. design of truck used, an illustration of which is given herewith. Its chief members are a center casting, and, bolted to it, 2 side frames of channel section, the journal box pedestals being cast integral with the latter. Each side frame has cast in it a spring seat, providing receptacles for the semi-elliptic springs, the ends of which rest on cast iron spring seats attached to the inner ends of the equalizers. The semi-elliptic springs are composed of 16 plates, 5 x 7/16 in. The equalizers are centered on the journal boxes, and the ends of the equalizers, removed from the semi-elliptic springs, support spring seats on which rest coil springs which transmit thrusts to the side frames. The hub faces of

the leading truck 60,000 lb., and on the trailing truck 59,000 lb. All 3 driving wheels on each side are joined in the same system of equalization with the trailing truck wheel, a long equalizer connecting the spring hanger at the rear of the no. 5 wheel with the spring hanger ahead of the trailing truck wheel. The extreme rear spring hanger, at the rear of the trailing truck wheel, is held in

which, in combination with the sharp slope of the ash pan sheets, and the absence of recesses in the pan to catch and hold ashes, makes fire cleaning easy. The ash pan doors are arranged to swing closed of their own weight, and the pan arrangement is such that the injector overflow may be easily directed into the pan for the summer months if desired.

The C.P.R. standard vestibule cab is

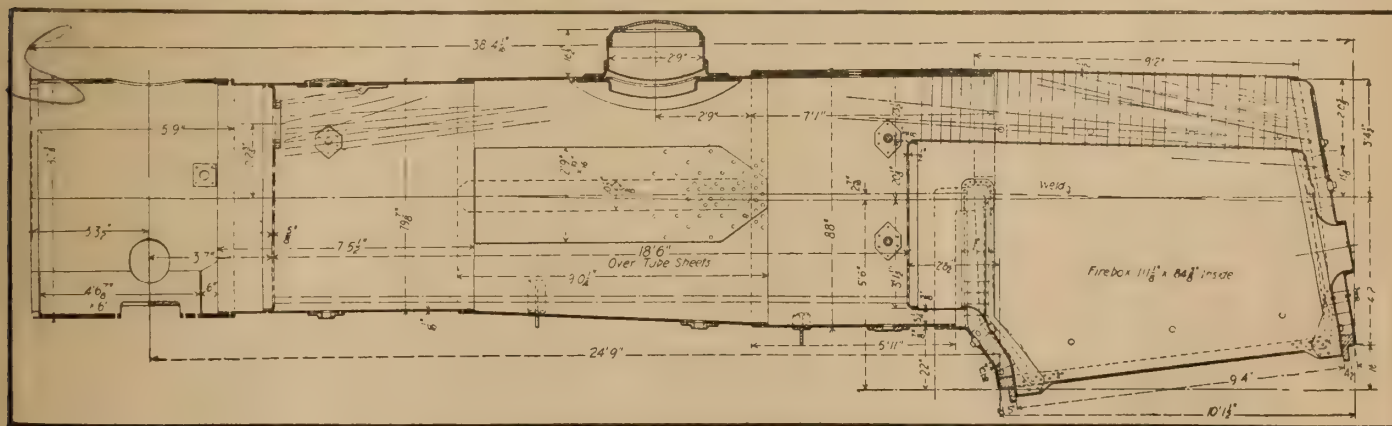


Back Head, Pacific Type Locomotive, Canadian Pacific Railway.

tension by a strong coil spring below the truck frame. The equalization employed produces exceptional riding qualities.

The Vaughan trailing truck which is

used, and the cab interior has been fitted with a view to not only efficient operation, but also to the crew's comfort. The illustration of the back head given herewith shows the way in which side boards



Boiler, Pacific Type Locomotive, Canadian Pacific Railway.

the truck boxes are equipped with double-faced cast brass liners. The leading truck journals are 7 x 13 in., and the wheels, which have cast steel centers, are 31 in. in diameter. The design of the leading truck, including coil and semi-elliptic springs in combination, has given every satisfaction.

The distribution of weight is such that the weight on drivers is 181,500 lb., on

used, has been long associated with C.P.R. motive power equipped with trailing truck wheels. A great advantage gained by the use of this truck, in combination with the Commonwealth cast steel cradle, is the large space provided for ash pan location. This space has been fully taken advantage of in equipping the locomotive with an ash pan of large capacity and good accessibility.

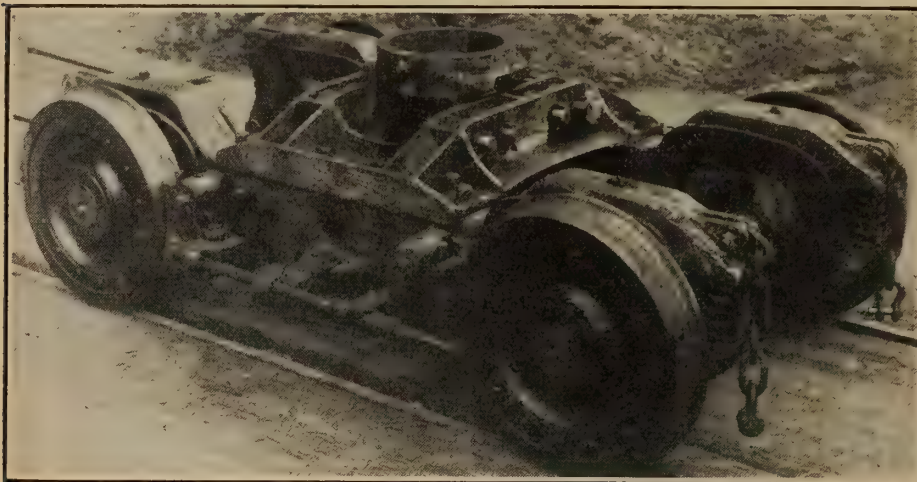
may be affixed for the winter, at the back of the locomotive man's and fireman's seats. Large lockers for the crew's use are also provided. All operating levers controlling the various devices are placed conveniently. The reverse gear is of the C.P.R. standard screw type, which provides for as finely graduated cut-off adjustments in both forward and reverse gear as are found

necessary in operation.

The tender, which weighs 188,500 lb. in working order, has a Commonwealth cast steel frame, and is supported on 4-wheel C.P.R. standard equalizer type trucks, equipped with cast steel bolsters and pedestals. The capacity of the rectangular style tank is 8,000 imperial gallons, and coal capacity 12 tons. The necessity of any mechanical means of passing the coal forward to within reach of the fireman is obviated by the design of the coal space, which is such that all coal gravitates to the shovel plate. The coal slope sheet is set at a 45 degree angle. The tanks of the last 16 of these locomotives have been changed somewhat in design from the ones built at Angus, and the holding down brackets used to secure the tank to the frame and prevent its movement in relation thereto have also been changed somewhat. The tender wheels, which have cast steel centers and steel tires, are 36 $\frac{1}{4}$ in. diameter, and the journals are 6 x 11 in.

A study of the illustrations given herewith and of the dimensions and equipment tabulated at the end of this article will convey the idea of a locomotive characterized by compactness, simplicity and rugged strength. While there is nothing radically different from any other modern locomotive about it,

Limiting height.....	15 ft. 5 in.
" width.....	10 ft. 8 in.
Weight in working order on drivers.....	181,500 lb.
Weight in working order on engine truck.....	60,000 lb.
Weight in working order on trailing truck.....	59,000 lb.
Weight in working order, total engine.....	300,500 lb.
Weight in working order, engine and tender.....	489,000 lb.
Wheelbase, rigid.....	13 ft. 2 in.
" engine.....	34 ft. 9 in.
" engine and tender.....	67 ft. 1 in.
Diameter of driving wheels.....	75 in.
Material driving wheel centers.....	Annealed cast steel
Leading truck.....	
wheels.....	31 in. diam., cast steel centers
Trailing truck.....	
wheels.....	45 in. diam., cast steel centers
Diam. and length main driving journals.....	11 $\frac{1}{2}$ x 21 in.
Diam. and length other driving journals.....	10 $\frac{1}{2}$ x 14 in.
Diam. and length engine truck journals.....	7 x 13 in.
Diam. and length trailing truck journals.....	9 x 14 in.
Boiler, type.....	Straight top, extended waggon bottom, radial stayed
Boiler, outside diam. first ring.....	79 $\frac{7}{8}$ in., third ring 88 in.
Boiler, working pressure.....	200 lb.
Tubes, no. and diam.....	205—2 $\frac{1}{4}$ in.
Flues, no. and diam.....	38—5 $\frac{1}{2}$ in.
Length of tubes.....	18 ft. 6 in.
Heating surface, firebox and arch tubes.....	298 sq. ft.
" tubes and flues.....	3232 sq. ft.
" total.....	3530 sq. ft.
Superheating surface.....	803 sq. ft.
Firebox length and width.....	111 $\frac{1}{8}$ x 84 $\frac{3}{4}$ in.
Grate area.....	65 sq. ft.
Valves, type.....	Piston travel
" travel.....	7 in.



Leading Truck, Pacific Type Locomotive, Canadian Pacific Railway.

it is evident that all details have been planned with both efficient performance and low maintenance cost in view. With a rigid wheelbase of 13 ft. 2 in., total wheelbase of 67 ft. 1 in., and weight on drivers of 181,500 lb., the tractive power which can be developed is 42,600 lb., and the weight per cylinder horsepower 133.4 lb. With simplicity predominant in all boiler and running gear details, with ample strength apparent wherever it is required, and with a boiler more than capable of meeting the cylinder demands upon it, the value of these locomotives in meeting the requirements of the present day standard of passenger service is apparent.

All of the 16 locomotives of this type have been delivered to the C.P.R. by the Montreal Locomotive Works, and assigned to service on various divisions. They are numbered 2310 to 2325, inclusive. One of them, no. 2324, was exhibited at the Canadian National Exhibition in Toronto recently. Following are the principal dimensions and the special equipment:

Type.....	Pacific
Gauge.....	4 ft. 8 $\frac{1}{2}$ in.
Type of cab.....	Vestibule
Fuel.....	Bituminous coal
Service.....	Passenger

" diam.	14 in.
" lap and lead.....	1 $\frac{1}{8}$ in. lap, $\frac{1}{4}$ in lead
" exhaust clearance.....	$\frac{1}{4}$ in.
Cylinders, stroke.....	30 in.
" diam.	25 in.
Tractive effort.....	42,600 lb.
Factor of adhesion.....	4.26
Weight per cylinder horsepower.....	133.4 lb.
Boiler evaporation: steam requirements.....	101.8%

Tender.

Weight of tender in working order.....	188,500 lb.
Capacity of tank.....	8,000 imp. gall.
Style of tank.....	Rectangular, water bottom
Coal capacity.....	12 tons
Trucks, type.....	C.P.R. standard equalizer type with cast steel bolsters and pedestals
Tender frame.....	Commonwealth, cast steel
" wheels, type.....	Steel tired, cast steel centers
" wheels, diam.	36 $\frac{1}{4}$ in.
Journals, diam. and length.....	6 x 11 in.

Equipment.

Valve gear.....	Walschaert
Superheater.....	Type A.
Reverse gear.....	C.P.R. Standard Screw
Injectors.....	Hancock inspirators, type A, no. 10
Headlight equipment.....	Pyle National, type E2
Engine truck.....	C.P.R. swing link type
Trailing truck.....	Vaughan
Safety valves.....	World type
Air brakes.....	Westinghouse no. 6 E.T.
Frames, material.....	Vanadium steel
Fire door.....	Franklin no. 8
Driving box wedges.....	Franklin automatic
Driving boxes.....	Cast steel; main box, Cole extended type
Oilers.....	Driving boxes, Franklin grease cellars. All others oil lubricated
Crosshead adjustment device.....	Removable side liners.
Wearing blocks, cast iron, with habbitt inserts	
Sanders.....	Never clog

Steam heat reducing valve.....	Leslie, 1 $\frac{1}{2}$ x 2 in., type AK.
Packing.....	King metallic
Radial buffer.....	Franklin
Steam heat connection.....	Gold, rear of tender; Barco between engine and tender
Air bell ringer.....	Canadian
Blow off cocks.....	Baco

We are indebted to C. H. Temple, Chief of Motive Power and Rolling Stock, C.P.R., and his staff, for supplying the dimensions and figures used in this article, which was prepared in Canadian Railway and Marine World's office, and for the photographs and blueprints from which the accompanying illustrations were made.

The Minister of Railways on Imperial Communications.

Hon. G. P. Graham, Dominion Minister of Railways and Canals, responded to the toast "Imperial Communications" at a dinner given in the Mansion House, London, Eng., by the London Chamber of Commerce, on Oct. 3. A press cablegram reports him as having said, in part, as follows:—"As far as transportation of freight and passengers is concerned, Canada is probably better equipped than any other country in the world per head of population. He described what Canada was doing in regard to aerial navigation and the wireless, remarking that care had to be taken that government-owned wireless systems, where they existed, and the ones being operated privately, should work in harmony. The great usefulness of the cable, though some might think it old-fashioned, must not be forgotten. After all, it was a powerful means of communication between the different parts of the Empire and had been a pioneer in welding the links of communication more firmly. He suggested that the majority of people were looking forward anxiously for the time when communication by mail could be carried on at a lower rate. It was not unreasonable to hope that further development would take place in long-distance telephonic service. Speaking generally, the idea of binding the Empire more closely in its everyday life was not only practical, but such a step would probably tend more than anything else to a better understanding of each part regarding the particular conditions of the other."

Freight Car Location Statistics.

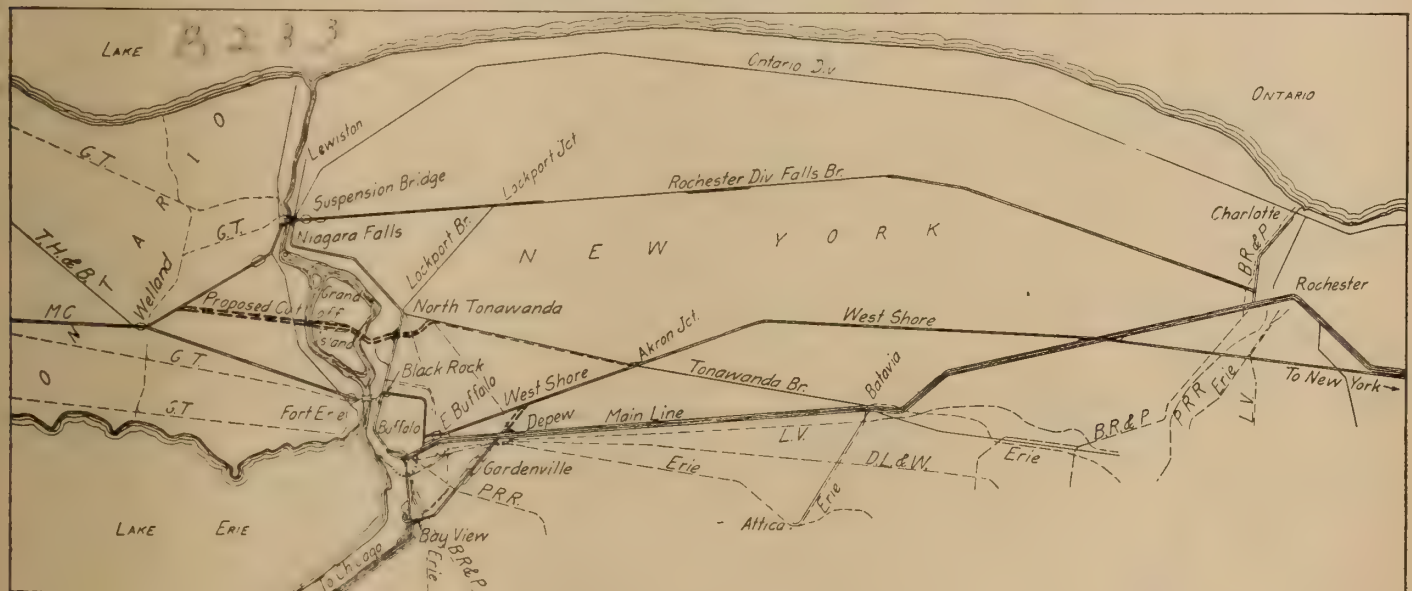
The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on Oct. 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National (including Grand Trunk Pacific); Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Kettle Valley; Napierville Jct.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, as follows: number of cars owned, 211,700; home cars on Canadian foreign lines, 10,317; home cars on U.S. lines, 35,659; home cars on home roads, 165,724; Canadian-owned foreign cars on home lines, 8,182; U.S.-owned foreign cars on home lines, 28,086; total cars on lines, 201,974; per cent. on lines to total owned, 95.4; deficiency on lines to total owned, 9,726; home cars in bad order, 11,489; foreign cars in bad order, 369; total cars in bad order, 11,858; per cent. in bad order, 5.8; privately-owned U.S. cars on lines, 2,354; privately-owned Canadian cars on lines, 1,581.

Another Connection Across the Niagara River for Canadian Pacific Railway and New York Central Lines.

A project for the construction of a double-track railway about 20 miles long, including a new crossing of the Niagara River about midway between Buffalo and Niagara Falls, is the latest step to be announced by the New York Central System in its plans to meet the requirements of its rapidly growing traffic. It is being undertaken jointly by the New York Central and the Canadian Pacific, and extends from a connection with the Michigan Central Rd.'s existing line near Welland, Ont., crossing the east and west branches of the Niagara River and Grand Island to a connection on the United States side with the New York Central's Niagara Branch and Tonawanda Branch, near Tonawanda, N.Y. Two corporations have been created to carry out the project, the Canadian Niagara Bridge Co. for the section of approximately 9 miles in Canada, and the American Niagara Bridge Co. for the 11 miles on the U.S. side of the International Boundary. The last named

from the west has to be made over the congested Niagara Branch, either from Suspension Bridge or Black Rock. The Niagara Branch, a double track line between Buffalo and Suspension Bridge, carries a heavy traffic. From North Tonawanda to Suspension Bridge it carries the Lehigh Valley traffic in addition to the N.Y.C. business, and has an average daily movement of about 50 passenger trains and about 30 freight trains. From Black Rock to Tonawanda it has an average daily movement of about 48 passenger trains and about 14 freight trains. The capacity of the Niagara Branch is also limited by an awkward connection with the bridge over the gorge at Suspension Bridge, which requires all trains passing from the bridge to the branch, or vice versa, to back around a wye. In addition to the routes mentioned above, there is the West Shore, extending from East Buffalo, with a double track line that is not now used to capacity on account of the lack of suitable

this bridge has become extremely heavy and has increased to a point beyond efficient and economical operation. During periods of heavy traffic, as many as 98 passenger trains and about 90 freight trains cross the structure daily. This traffic moves between the New York Central; the Delaware, Lackawanna & Western; the Erie, and the Pennsylvania on the east, and the Michigan Central, the Pere Marquette, the Grand Trunk, and the Wabash on the west. The large industrial development at Black Rock makes it impossible to expand the yards there beyond their present limits, and their operation is hampered by the existence of three street grade crossings, so that serious delays occur in handling traffic. Frequently, during times of heavy traffic, over 2,300 cars are handled per day at the various railways' Black Rock yards, which have a standing capacity for only approximately 1,600 cars. Buffalo and the Niagara frontier constitute the bottleneck through which the



Proposed New Crossing of Niagara River.

company will also be responsible for the construction of a large classification yard on Grand Island.

At present the traffic for the N.Y.C. moving through the Niagara and Buffalo gateways is carried to Welland over the Michigan Central main line and over the Toronto, Hamilton & Buffalo Ry., which is owned jointly by the N.Y.C., the Michigan Central and the Canadian Pacific. From Welland the Michigan Central has two lines, a double track one running northeasterly and crossing the Niagara River at Suspension Bridge, and the other crossing the Niagara River on the Grand Trunk Ry. international bridge, connecting with the railways on the U.S. side at Black Rock, near Buffalo. On the U.S. side of the river a large part of the traffic crossing at Suspension Bridge moves east over the N.Y.C., Rochester Division, Falls Branch, to a connection with the N.Y.C. main line at Rochester. The Rochester Division's Tonawanda Branch also extends from a connection with the Niagara Branch, at North Tonawanda, to a connection with the West Shore Rd. at Akron Jct., but this branch is little used, because, among other reasons, connection with it to and

through connections to it. These various N.Y.C. arteries of traffic are in addition to its 4-track main line which passes through Buffalo and carries a heavy traffic. On the portion west of the Buffalo gateway the daily average is about 50 passenger trains, with about 50 freight train movements, and on the portion east of Buffalo it is about 68 passenger trains and about 40 freight train movements.

At present two railway bridges are available to the N.Y.C. lines crossing the Niagara River between the U.S. and Canada. One is the Michigan Central cantilever bridge at Suspension Bridge, now being replaced by a steel arch double track structure, over which a heavy traffic moves between the N.Y.C., the Erie and the Lehigh Valley on the east, and the Michigan Central and Pere Marquette on the west, the daily movement being about 16 passenger trains and about 30 freight trains. The other is the international bridge owned by the Grand Trunk, which crosses the Niagara River between Black Rock, in the northerly part of Buffalo, and Bridgeburg. This is an old bridge, part of which has only a single track. The traffic crossing

great volume of the N.Y.C. freight must pass between the west and New York and Ontario and the Canadian Northwest. In addition to the N.Y.C.'s freight movement, there is a heavy interchange between that system and other railways, and also between the N.Y.C. and the lake steamship lines. In 1919, over 31,000,000 bush. of eastbound grain were transferred from ships to the N.Y.C. rails at Buffalo.

With the above facts before them, the N.Y.C. authorities have been endeavoring, for a long time, to develop a programme to relieve its busy main line through New York State by the construction of detour lines, for the by-passing of through movements around important gateways, to facilitate handling traffic at the large centers, and by the construction of connecting lines, to obtain greater use of the double track West Shore Rd. An important part of this programme is the construction, now under way, of the Hudson River Connecting Rd., forming a connecting link, south of Albany, between the main line and the West Shore west of the Hudson River and the Boston & Albany's Hudson

Division to the east. The situation has been met to a degree at Buffalo by the construction of the Buffalo Terminal Rd., extending from Blasdell, on the main line southwest of the city, to Depew on the main line east of the city, and consisting of a double track detour line about 10 miles long, with large classification yards at Gardenville, designed to handle the through movements around the city. Another part of the general programme is a connection now contemplated from the main line at Depew to the West Shore, involving the construction of a line about 2 miles long, making the West Shore Rd. available for the movement of some of the through traffic received over the Buffalo Terminal Rd.'s detour line.

The construction of the American Niagara Rd. is another natural part of this programme, in order to pass through business to and from the Michigan Central around the congested portion of the Buffalo gateway. This will be accomplished by routing the traffic over the new line and bridge to Tonawanda Jct. and over the Tonawanda branch to Akron Jct., and thence to the West Shore, making that double track line available for a heavy tonnage, whereas it now carries but little traffic. The Tonawanda Branch will be double tracked and the grade reduced to 0.25% eastbound for the handling of this traffic. The new line can also be used to advantage for certain traffic now moving on a roundabout route over the Suspension Bridge crossing, including the Lehigh Valley traffic, which moves over the N.Y.C. under a trackage arrangement, and perhaps also the Erie traffic, by means of a connection that may be made with the Erie just south of Tonawanda. The distance over the new line will be about 6½ miles shorter between Tonawanda Jct. on the east and Welland on the west than over the route via Suspension Bridge. Operations between the east and west will also be expedited by the new line, because its use in conjunction with the Tonawanda Branch and the West Shore will afford a route for heavy tonnage movements on a lower grade than via the present routes. The maximum grade on the new route will be 0.3% eastbound, compared to existing grades of 1.0% eastbound

on the present routes between Welland, Ont., and Rochester, N.Y.

The new line will relieve the N.Y.C. main line of a considerable amount of freight traffic, and will, in connection with the distribution and assembling of freight traffic in the new yard to be provided on Grand Island, improve the movement at Black Rock and East Buffalo, and shorten the time for the transportation of freight between the east and the west. To the extent that the new line will relieve the existing railway facilities, they will be more capable of serving the local needs of Buffalo, with its constantly increasing industrial development. The portion of the new route on the U.S. side will consist of a double track railway 10.36 miles long, the maximum grades on which will be 0.43% westbound and 0.25% eastbound, compensated, with a maximum curvature of 3 degrees.

While the plans for the bridge structure are in the course of preparation and are only preliminary, subject to the U.S. Secretary of War's approval, it is planned to carry the new line over the Niagara River's easterly branch by means of a 9-span steel structure of through Warren truss design. Eight of the spans are to be fixed, and each 205 ft. long, with a movable span over the channel 190 ft. long, of a direct vertical lift type, allowing 156 ft. of clear channel and 110 ft. vertical clearance. The substructure will consist of concrete piers on pile foundations, except for the lift spans, the substructure for which will be carried to rock. The bridge will provide for two railway tracks on a timber deck, designed for Cooper's E-70 loading, with a vehicular roadway of concrete floor construction on one side, designed for 15-ton trucks and 50-ton trolley loading, and with a walkway for pedestrians. The new line will cross all highways and existing railways at separated grade. The development in the large hump classification yard on Grand Island contemplates receiving, classification and departure yards of an ultimate capacity of 10,000 cars. The yard improvement will include two modern locomotive houses, with about 32 stalls each, with machine shop, blacksmith shop and repair facilities, together with a 1,000-

ton reinforced concrete coaling plant, sanding and ash handling facilities, the latter the circular wet ash pit type. The ultimate yard layout for eastbound movement will consist of 10 tracks of 110 cars capacity for the receiving yard; 32 tracks of 50 to 100 cars capacity for the classification yard, and 10 tracks of 110 cars capacity in the advance yard. A similar and symmetrical layout is planned for the westbound movement. The part of the new route incorporated as the Canadian Niagara Bridge Co. will consist of a double track railway extending from a connection with the American Niagara Rd., at the international boundary, westerly for 8.85 miles, to a connection with the Michigan Central a short distance east of Welland, Ont., with a tangent alinement for the entire distance and a maximum grade of 0.25% in each direction.

With the exception of the bridge over the westerly branch of the river, the construction work on this line will be comparatively light. The preliminary plans for the bridge over the Niagara River's west branch contemplate a main steel superstructure of 15 main spans. It is being planned to consist of 12 spans of semi-through Warren type trusses of 160 ft. each; 2 through truss spans of 205 ft. each, and a direct vertical lift span over the channel of 196 ft., providing a vertical clearance of 110 ft. The bridge will be designed the same as the one on the U.S. side over the easterly branch, for two railway tracks on a timber deck, designed for Cooper E-70 loading with a roadway for vehicular and trolley traffic.

Enabling legislation for both the Canadian and the U.S. Niagara railway corporations has been passed by the respective governments and applications for permission and approval to exercise the franchise of the U.S. corporation and for a certificate of public convenience and necessity have been filed with the New York State Public Service Commission and with the Interstate Commerce Commission. The Public Service Commission has recently granted that certificate. It will also be necessary for the bridge plans to be submitted to the Secretary of War and for financing to be arranged.—Railway Age.

Birthdays of Transportation Men in November.

Many happy returns of the day to:—

J. O. Adams, General Eastern Freight Agent, Canadian National-Grand Trunk Rys., New York, born at London, Ont., Nov. 21, 1872.

J. O. Apps, General Agent, Mail, Baggage and Milk Traffic, C.P.R., Montreal, born at Tara, Ont., Nov. 9, 1877.

H. E. Beasley, General Superintendent, Esquimalt & Nanaimo Ry., Victoria, B.C., born at Hamilton, Ont., Nov. 10, 1862.

J. R. Beck, District Passenger Agent, Canada Steamship Lines Ltd., Toronto, born at Gaspé Cove, Que., Nov. 4, 1829.

W. C. Blake, Auditor of Payrolls, Western Region, Canadian National Rys., Winnipeg, born at Liverpool, Eng., Nov. 28, 1865.

C. C. Bonter, Assistant Passenger Traffic Manager, Canada Steamship Lines, Montreal, born at Toronto, Nov. 13, 1884.

G. B. Burchell, Managing Director, Bras d'Or Coal Co., Little Bras d'Or, N.S., born Nov. 1, 1877.

J. R. Cameron, Assistant General Manager, British Columbia District, Western

Region, Canadian National Rys., Vancouver, B.C., born at Truro, N.S., Nov. 5, 1865.

F. H. Clendenning, Foreign Freight Agent, C.P.R., Vancouver, B.C., born at Montreal, Nov. 9, 1881.

F. Conway, City Freight and Passenger Agent, C.P.R., Kingston, Ont., born at Ernestown, Ont., Nov. 19, 1850.

W. L. Crighton, Assistant Manager, Advertising Bureau, Canadian National Rys., Montreal, born at Derby, Eng., Nov. 9, 1871.

E. C. P. Cushing, Purchasing Agent, C.P.R., Calgary, Alta., born at Ottawa, Ont., Nov. 13, 1886.

W. R. Davidson, General Superintendent, Montreal District, Central Region, Canadian National Rys., Montreal, born at Everton, Mo., Nov. 8, 1871.

W. R. Devenish, C.E., General Superintendent, Northern Ontario District, Central Region, Canadian National Rys., Toronto, born in County Tipperary, Ireland, Nov. 21, 1882.

A. C. Douglas, Assistant General Purchasing Agent, C.P.R., Montreal, born

there, Nov. 10, 1881.

W. Downie, ex-General Superintendent, Atlantic Division, C.P.R., now of Whitby, Ont., born at Rock Currie, Ireland, Nov. 12, 1850.

Jos. Dubrule, President, Prescott & Ogdensburg Ferry Co., and General Manager Canadian Pacific Car & Passenger Transfer Co., Prescott, Ont., born at Spencerville, Ont., Nov. 14, 1872.

R. L. Fairbairn, Manager, Passenger Service Bureau, Canadian National Rys., Montreal, born at Stillwater, Minn., Nov. 24, 1880.

W. Fulton, District Passenger Agent, Ontario District, C.P.R., Toronto, born at Ballinderry, County Antrim, Ireland, Nov. 13, 1870.

J. E. Gibault, Division Engineer, Canadian National Rys., Levis, Que., born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887.

G. N. Goad, Superintendent, Nipissing Division, Northern Ontario District, Central Region, Canadian National Rys., Capreol, Ont., born at Toronto, Nov. 26, 1884.

Grant Hall, Vice President, C.P.R., Montreal, born there, Nov. 27, 1863.

G. L. Hodge, Chief Special Agent, Central Vermont Ry., St. Albans, Vt., born at Lowell, Mass., Nov. 3, 1879.

J. McMillan, General Manager of Telegraphs, C.P.R., Montreal, born at Liverpool, Eng., Nov. 2, 1866.

H. R. Mallison, Purchasing Agent and Secretary to President, Montreal Tramways Co., Montreal, born at Toronto, Nov. 14, 1873.

Oscar Masse, Trainmaster, Cornwall Subdivision, St. Lawrence Division, Montreal District, Central Region, Canadian National Rys., Montreal, born at Coteau, Que., Nov. 7, 1884.

R. C. Morgan, Superintendent, Winnipeg Terminals Division, Manitoba District, C.P.R., Winnipeg, born at Missisquoi Bay, Que., Nov. 12, 1864.

C. Murphy, General Manager, Western Lines, C.P.R., Winnipeg, born at Prescott, Ont., Nov. 20, 1865.

G. H. Nowell, Master Mechanic, Lethbridge Division, Alberta District, C.P.R., Lethbridge, born at Montreal, Nov. 13, 1885.

G. Pelletier, Assistant Superintendent, Canadian National Rys., Levis, Que., born at Isle Verte, Que., Nov. 28, 1872.

W. J. Quinlan, District Passenger Agent, Canadian National Rys., Winnipeg, born at Montreal, Nov. 21, 1883.

dian National Rys., Edmonton, Alta., born at Clinton, Ont., Nov. 29, 1880.

John Whitsell, Manager, Winnipeg Electric Ry., Winnipeg, born in Iowa, Nov. 30, 1868.

H. E. Whittenberger, General Man-

ager, Grand Trunk Western Lines, Canadian National Rys., Detroit, Mich., born at Peru, Ind., Nov. 9, 1869.

W. A. Whyte, Division Freight Agent, Canadian National Rys., Vancouver, B.C., born at Hornsey, Eng., Nov. 24, 1890.

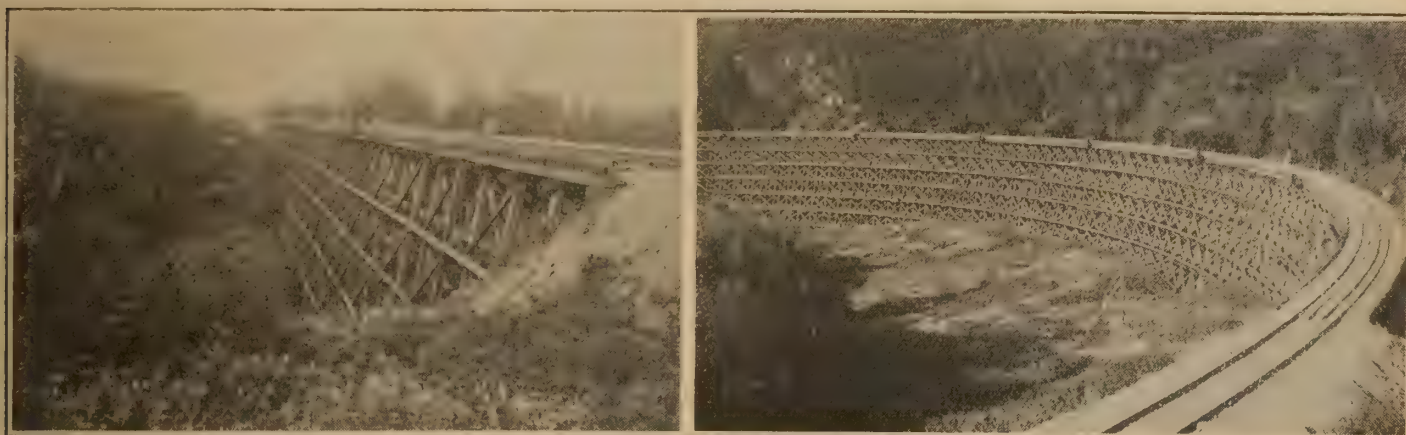
Algoma Central & Hudson Bay Railway Line Revision.

The Algoma Central & Hudson Bay Ry. extends from Sault Ste. Marie, Ont., to a junction with the National Transcontinental Ry. at Hearst, 296 miles, crossing the C.P.R. transcontinental line at Franz, mile 195; and the Canadian Northern Ry. at Oba, mile 246. At miles 104.09 and 104.67 there are 2 large frame trestles, which are shown in the accompanying illustrations. They are of standard construction, built in 1911-12. The first one, at mile 104.09, is 1,050 ft. long and 75 ft. high and is built on a 12 degree curve; the second one, at mile 104.67, is 520 ft. long, 65 ft. high and is mostly on tangent. Both trestles span coulees high up on a range of hills fronting Agawa Bay, the main line there being 750 ft. above Lake Superior and 4 miles from the shore. The maintenance of these trestles is very costly, and after considering the cost of filling them in, the management decided that it would

being done under the direct charge of B. E. Barnhill, Construction Engineer, with L. C. Maxwell, Engineer Maintenance of Way, under the general supervision of R. S. McCormick, General Superintendent and Chief Engineer, Algoma Central & Hudson Bay Ry., to whom we are indebted for the information on which the foregoing is based.

Freight Car Condition and Supply.

Any delay or congestion in the handling of the 1923 grain crop which may occur, will certainly not be caused by the condition of the Canadian railways' freight cars, as is evidenced by a report issued by the Railway Association of Canada, which shows that, on Oct. 1, there were only 5.8% of the total freight cars on lines in bad order, there being only 11,858 in need of heavy repairs out of a total on line of 201,974. The report



Trestles on Algoma Central & Hudson Bay Ry. which are to be eliminated. The trestle on the left is 104.67, looking south. The one on the right is 104.09, looking north.

J. W. Reid, Inspector of Railway Safety Appliances, Board of Railway Commissioners, Calgary, Alta., born at Harvey, N.B., Nov. 12, 1892.

J. L. Roberge, General Manager, Levis Ferry Ltd., Quebec, Que., born at Burlington, Vt., Nov. 25, 1874.

J. J. Rose, Passenger Department, Robert Reford Co., General Agents, Cunard, Anchor and Anchor-Donaldson Steamship Lines, Toronto, born there, Nov. 22, 1878.

G. H. Shaw, ex-General Traffic Manager, Canadian Northern Ry., Toronto, born at Smiths Falls, Ont., Nov. 25, 1859.

P. D. Sutherland, General Passenger Agent for the Orient, C.P.R., Hong Kong, China, born at Toronto, Nov. 2, 1879.

L. C. Thomson, Chief of Stores, Canadian National Rys., Montreal, born at Kingston, Ont., Nov. 25, 1882.

H. P. Timmerman, ex-Industrial Commissioner, Eastern Lines, C.P.R., Montreal, born at Odessa, Ont., Nov. 6, 1856.

Guy Tombs, ex-Assistant Freight Traffic Manager, Eastern Lines, Canadian National Rys., now of Guy Tombs Ltd., transportation agents, Montreal, born near Lachute, Que., Nov. 22, 1877.

T. D. Utley, Car Foreman, C.P.R., Hardisty, Alta., born at Leytonstone, London, Eng., Nov. 1, 1890.

T. W. White, District Engineer, Cana-

be more economical to eliminate these structures by building a deviation, the plans for which were approved by the Board of Railway Commissioners on Sept. 29.

The revised location is from mile 103.80 to mile 104.79. It will shorten the line about 500 ft., and will cut out five 12 degree curves, totalling 201 degrees 42 minutes of curvature. The revised line starts on an 8 degree curve, increasing to a 12 degree one, at the site of the first trestle, then a 6 degree curve, and will regain the present line on a 6 degree curve. The grading will be principally solid rock, in 3 big cuts, the estimated quantities being 18,000, 50,000 and 20,000 cu. yd., respectively, the excavated material being used in the fills, which aggregate about 120,000 cu. yd. The contractors for the grading are McNamara Bros. and Thornton, Sault Ste. Marie, Ont. The tracklaying will be done by the company's forces, and it is expected to have the revision completed and in operation in June, 1925. The old track and trestles will then be taken up. The complete work is estimated to cost \$187,000, which is approximately the same as it would have cost to fill in the trestles on the old line. The work is

states that there was, on Oct. 1, a car shortage of 502, compared with a shortage of 553 on Sept. 1; 543 on Aug. 1; 750 on July 1; and 350 on June 1. These figures show that traffic is so heavy as to tax the railways' facilities to handle it, and that the railways are handling it with only a minimum of car shortage present.

The American Railway Association's Car Service Division reports that, out of 2,256,765 freight cars on line on Sept. 15, there were 165,284, or 7.3%, in bad order, compared with 7.7% on Sept. 1. Out of 1,036,566 box cars, 73,621, or 7.1%, were in bad order, compared with 7.4% on Sept. 1; out of 45,098 refrigerator cars, 4,111, or 9.1%, were in bad order, compared with 9.6% on Sept. 1; out of 958,151 gondolas, 71,856, or 7.5%, were in bad order, compared with 8% on Sept. 1; out of 81,421 stock cars, 6,608, or 8.1%, were in bad order, compared with 8.6% on Sept. 1, and out of 91,381 flat cars, 6,704, or 7.3%, were in bad order, compared with 7.7% on Sept. 1. The U.S. class 1 railways are successfully handling the largest traffic in their history without car shortage. Total loadings have been running at a million cars a week or over for some time, and continue to do so.

Railway Operating Revenues, Expenses and Other Statistics for Six Months Ended June 30, 1923.

Canadian Railway and Marine World for October published a comparative table for the 6 months ended June 30, 1922 and 1923, which had been prepared from information supplied by the Dominion Bureau of Statistics, Transportation Branch. We have since been advised by the Bureau that "a corrected report has been received from the Canadian National Rys. for the 6 months, January-June, which also affected the data for all railways." We have, therefore, prepared another table, which is given below.

The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are

not in all cases the same as reported in 1922.

The column headed "Canadian National" gives the figures for the combined steam railways in Canada, under the Canadian National Ry. Co.'s directors' management, including the former Canadian Northern System; the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Province Line Ry., 9.77 miles, and Black Rock terminal. It does not include the Central Vermont, other lines in New England, nor lines west of the Detroit and

St. Clair Rivers.

The column headed "Canadian Pacific" includes also the Montreal & Atlantic and Esquimalt & Nanaimo Rys.

The first six items under the heading "Operating revenues" include rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train mile includes only rail line revenue. Average passenger train revenue per passenger train mile includes revenue from passenger, mail, express, baggage, parlor cars, etc.

	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
Operating Revenues						
Freight	\$147,901,893.78	\$134,201,178.09	\$70,919,889.11	\$63,264,296.42	\$54,819,215.70	\$52,226,120.83
Passenger	35,286,171.26	33,421,705.29	14,763,621.35	13,464,478.02	15,241,708.73	15,162,104.66
Mail	3,549,239.26	3,741,731.48	1,521,428.70	1,665,751.31	1,757,550.70	1,803,012.72
Express	8,790,550.04	7,523,984.47	5,441,493.61	5,472,286.07	2,710,141.88	2,689,282.46
Other freight train.....	28,331.86	28,337.82	8,700.00	Dr. 794.65	14,069.93	27,317.31
Other passenger train.....	2,951,572.11	2,843,188.26	1,116,098.75	1,017,201.36	1,717,762.05	1,681,825.11
Water line	818,195.12	766,772.08			632,095.21	614,416.81
All other	8,165,754.53	7,021,082.99	3,754,839.29	3,370,362.16	3,476,558.52	3,282,861.62
Total railway operating revenues.....	\$207,491,707.96	\$189,547,980.48	\$97,526,070.81	\$88,253,580.69	\$80,369,102.72	\$77,486,941.52
Operating Expenses						
Maintenance of way and structures.....	\$35,471,926.92	\$33,187,188.58	\$18,438,590.27	\$17,713,483.54	\$12,526,858.72	\$11,691,211.23
Maintenance of equipment.....	44,883,475.86	43,319,057.86	23,062,118.39	22,662,949.15	16,744,164.54	15,393,806.89
Traffic	6,395,081.03	6,052,736.33	2,109,639.93	2,070,861.11	3,864,152.04	3,517,104.39
Transportation	98,540,606.03	88,821,543.57	51,957,240.86	46,461,064.68	36,061,018.39	33,765,230.15
Miscellaneous operations	3,235,900.28	3,083,148.23	1,782,293.84	1,845,409.37	1,207,941.19	1,262,158.04
General	5,982,316.96	5,647,886.49	3,314,267.26	2,962,868.03	1,824,778.00	1,808,578.41
Transportation for investment.....	Cr. 152,636.26	Cr. 363,587.68	Cr. 139,498.04	Cr. 362,170.98		
Total railway operating expenses.....	\$194,356,670.82	\$179,747,973.10	\$100,524,652.51	\$93,354,464.90	\$72,228,912.98	\$67,438,089.11
Operating Income						
Net operating revenue.....	\$13,135,037.14	\$9,800,007.38	Dr. \$2,998,581.70	Dr. \$5,100,884.21	\$8,140,189.84	\$10,048,852.41
Railway tax accruals.....	3,293,196.25	3,173,508.01	1,187,142.16	1,210,014.85	1,577,189.63	1,480,936.88
Uncollectable revenues	35,187.98	27,762.79	28,982.59	20,297.58		
Hire of equipment	Cr. 3,339,929.34	Cr. 1,945,317.78	Cr. 2,068,455.70	Cr. 2,102,779.84	Cr. 3,102,098.85	Cr. 1,367,214.64
Joint facilities rents.....	Dr. 719,950.42	Dr. 526,742.23	Cr. 111,580.76	Cr. 114,639.75	Cr. 51,638.10	Cr. 127,708.71
Operating income	\$12,426,631.83	\$8,017,312.13	Dr. 2,034,669.99	Dr. 4,113,777.05	9,716,737.16	10,062,838.88
Operating Statistics						
Average miles of road operated.....	38,544	38,485	20,461.91	20,406.03	13,919.9	13,877.2
Number of tons carried (revenue freight).....	53,100,220	41,696,925	22,375,682	16,580,945	14,309,643	12,633,595
Number of tons carried one mile (revenue freight).....	14,168,181.253	11,623,193.230	7,197,633.106	5,748,825.069	5,201,030.634	4,518,450.580
Number of tons carried (all freight).....	62,809,446	49,085,427	27,196,137	20,557,234	18,550,930	15,330,068
Number of tons carried one mile (all freight).....	16,169,974.342	12,940,881.877	8,278,765.161	6,517,218.153	6,063,926.466	5,023,371.448
Number of revenue passengers carried.....	20,174,739	19,929,232	10,368,879	10,282,611	7,064,093	6,948,706
Number of revenue passengers carried one mile.....	1,203,784.489	1,145,965.023	510,844.318	485,648.386	534,943.780	516,444.314
Freight train miles.....	29,551,589	25,157,121	15,256,929	13,184,810	10,927,063	9,198,966
Passenger train miles.....	22,165,117	21,101,028	10,097,954	9,598,758	9,431,717	9,411,116
Total train miles (revenue and non-revenue).....	53,913,425	47,574,282	26,611,608	23,756,288	21,117,873	18,928,752
Freight car miles—loaded.....	643,912,353	530,503,620	323,758,416	266,190,548	235,846,349	200,183,036
Freight car miles—empty.....	286,913,068	240,854,835	157,092,325	127,944,112	93,527,697	76,644,460
Passenger train car miles.....	147,150,620	141,343,784	63,797,483	62,231,698	65,008,495	63,718,954
Total amount of pay roll.....	\$115,034,798.75	\$105,764,054.52	\$62,704,333.57	\$57,948,291.48	\$42,301,263.62	\$38,805,299.98
Number of employees.....	158,225	145,895	87,392	80,559	58,499	54,171
Daily Averages Per Mile of Road Operated						
Operating revenues	\$29.74	\$27.21	\$26.33	\$23.89	\$31.90	\$30.85
Operating expenses	\$27.86	\$25.80	\$27.14	\$25.28	\$28.67	\$26.85
Number of tons moved one mile (revenue freight).....	2,031	1,669	1,943	1,556	2,064	1,799
Number of tons moved one mile (all freight).....	2,318	1,858	2,235	1,765	2,407	2,000
Number of revenue passengers carried one mile.....	173	165	138	131	212	206
*Averages Per Freight Train Mile						
Freight revenues	\$5.01	\$5.34	\$4.65	\$4.80	\$5.02	\$5.72
Number of tons of freight (revenue freight).....	479.4	462.0	471.8	436.0	476.0	494.4
Number of tons of freight (all freight).....	547.2	514.4	542.6	494.3	554.9	549.7
Loaded freight cars.....	21.8	21.1	21.2	20.2	21.6	21.9
Empty freight cars.....	9.7	9.6	10.3	9.7	8.6	8.4
*Averages Per Passenger Train Mile						
Passenger train revenues.....	\$2.28	\$2.25	\$2.26	\$2.25	\$2.27	\$2.27
Passengers carried	54.3	54.3	50.6	50.6	56.7	54.9
Passenger cars	6.6	6.7	6.3	6.5	6.9	6.8
Average operating expenses per train mile.....	\$3.60	\$3.78	\$3.78	\$3.93	\$3.42	\$3.56
Average length of haul (revenue freight), miles.....	266.8	278.8	321.7	346.7	363.5	357.7
Average passenger journey, miles.....	59.6	57.1	49.3	47.2	75.7	74.3
Average tons per loaded freight car.....	25.1	24.4	25.6	24.5	25.7	25.1
Average freight receipt per revenue ton mile.....	1.044c	1.155c	.985c	1.100c	1.054c	1.156c
Average passenger receipt per passenger per mile.....	2.931c	2.916c	2.890c	2.772c	2.849c	2.936c
Ratio of pay roll to operating revenues.....	55.4%	55.3%	64.3%	65.7%	52.6%	50.1%
Ratio of pay roll to operating expenses.....	59.2%	58.8%	62.4%	62.1%	58.6%	57.5%
Ratio of operating expenses to revenues.....	93.67%	94.83%	103.07%	105.78%	89.87%	87.03%

*Contains a proportion of mixed train miles.

Railway Operating Revenues, Expenses and Other Statistics.

All Railways, First Half of 1923.—Canadian Railway and Marine World for October contained, on page 465, a comparative table, prepared in its office from information supplied by the Dominion Bureau of Statistics, Transportation Branch, showing the operating results of all Canadian railways, and of the Canadian National and Canadian Pacific separately, for the first half of 1923 and 1922. The Bureau has since advised us of the receipt of a corrected report from the Canadian National Rys., which also affected the data for all railways, and we have, therefore, prepared a revised table, which is given on page 520. A comparison of this table with the one published in October, of course, shows that the great majority of the changes are in the Canadian National figures, which also affected the figures for "all railways." The changes made in the C.P.R. figures are only in connection with daily averages per mile of road operated, being evidently necessitated on account of an error in calculation.

A comparison of the two tables shows that the changes in the figures are not such as necessitate any change in the opinion expressed in our last issue as to the progress Canadian railways are making in their uphill fight to get revenues and expenses on a proper basis, nor do they affect the accuracy of the statement in our October issue, that Canadian railways furnished a lot more transportation service in the first half of 1923 than in the first half of 1922, and charged less per unit for it; that, notwithstanding this, due to better train and car loading, and to efficient handling of the traffic offered, the railways secured much larger net earnings than in the first half of 1922, furnished employment to a greater number, and paid out much more in wages, and that, finally, the comparison between the first halves of 1923 and 1922 furnishes a practical demonstration of the almost axiomatic proposition that the movement of a large volume of traffic at reasonable rates is far better for all concerned than the movement of a restricted volume at high rates.

All Railways in July.—The Bureau of Statistics statement shows that Canadian railways as a whole obtained freight traffic in July which was 17% greater than in July 1922, and passenger traffic 7% greater. Due to rate reductions, however, freight revenue was only 11% greater, and passenger revenue 6% greater. Total revenues were 8.2% greater, but operating expenses were only 4% greater, with the result that net earnings increased from \$2,530,761 in July 1922 to \$4,195,732 in July 1923. This meant a reduction in the operating ratio of from 92.92 in July 1922 to 89.15 in July 1923. The number of employees in July this year was 181,408, against 167,248 in July 1922, while the pay roll was \$21,277,752 in July this year, against \$19,478,009 in July 1922. Freight train loading showed some betterment, the average revenue trainload being 449.7 tons in July 1923, against 435.5 tons in July 1922. Car loading was also better, the average carload in July this year, 24.2 tons, being 1.9 tons better than in July 1922. Despite the increased trainload, the earnings per freight train mile in July 1923, \$5.39, were 8c less than in July 1922, due to freight rate reductions. The average receipt per revenue ton mile

was 1.198c in July 1923, against 1.256c in July 1922. The lowered rates on grain came into effect on July 6, 1922, so that that decrease is only partly applicable as between the two months, but as the decrease in general commodity rates did not apply until Aug. 1, 1922, it was fully applicable in reducing the average rate as between the two months. The same remarks as are applied to the railway earnings for the first 6 months of 1923, compared to the first six months of 1922, can also be applied to a comparison between July 1923 and July 1922. The railways carried more freight and passengers; the public paid lower unit charges, but the railways derived better net earnings, and work was furnished an increased number of employees.

Canadian National Rys. in July.—According to information furnished by the Dominion Bureau of Statistics, Transportation Branch, the Canadian National Railways Canadian lines, which include the Canadian Northern, Intercolonial, Prince Edward Island, National Transcontinental and other Government railways, the Hudson Bay Ry., the Grand Trunk Ry. in Canada, the Grand Trunk Pacific Ry., and 36.16 miles of the G.T.R. in the U.S., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Province Line Ry., 9.77 miles, and the Black Rock Terminal, but not other U.S. Grand Trunk lines, or the Central Vermont Ry., earned net operating revenue in July this year of \$765,743. In July 1922 they had an operating deficit of \$57,781. This improvement was responsible for decreasing the operating ratio from 100.35 to 95.70. This is the group of lines covered by the heading "Canadian National Railways" in the table on page 520, giving the results for the first 6 months of this year, compared with the first 6 months of 1922, and as shown therein, these lines had an operating deficit for the first 6 months this year of \$2,998,582. July was the fourth successive month in which this group had net earnings, but the operating deficits of the first 3 months of the year were larger than the net earnings of the last four. As pointed out in our October issue, the Canadian National Rys. as a whole would have had an operating deficit for the first half of the year if it had not been for the Grand Trunk Western Lines, and the July results show that the latter lines earned more in that month than did the Canadian group as detailed above, the Grand Trunk Western Lines' net for July being \$863,809. The New England Lines lost \$169,018 in July, while the Duluth, Winnipeg & Pacific had net earnings of \$11,694. For the entire Canadian National system, viz., the Canadian lines as specified above, Duluth, Winnipeg & Pacific, New England Lines and Grand Trunk Western, July gross earnings were \$21,002,849; operating expenses were \$19,530,619, and net earnings were \$1,472,229.

Canadian National Rys., Jan. 1 to July 31.—The Bureau of Statistics report shows that the Canadian National Rys. Canadian lines had a net operating deficit of \$2,232,839, compared with a deficit of \$5,158,665 in the first 7 months of 1922, while the Grand Trunk Western, Duluth, Winnipeg & Pacific and New England Lines had net earnings of \$5,217,299, compared with \$2,955,673 in the same period of 1922, making net

earnings for the whole system, for the 7 months, \$2,984,460, compared with a deficit of \$2,202,993 in the same period of 1922.

Canadian Pacific in July.—The Bureau of Statistics report shows gross earnings \$1,193,488 greater than in July 1922, operating expenses \$1,101,427 greater, and net earnings \$92,061 greater. Freight traffic increased 21%, but freight traffic revenue increased only 12%, due to rate reductions. The payroll increased \$631,592, or 8.5% over July 1922, and the number of employees increased 5,187, or 8.2%. Passenger traffic increased 7%.

Canadian Pacific Ry., January to July 31.—As pointed out in our October issue, C.P.R. net earnings to the end of July this year were not so good as for the same period of 1922. The net for the first seven months of 1923 was \$133,585 less than for the same period this year.

Canadian National Rys. in August.—Page 522 of this issue contains a table prepared from figures furnished by the Canadian National Rys. management, which shows that in August the system as a whole, including express and hotel departments, and a number of subsidiary companies, but not the Central Vermont Ry. and car ferries and steamboats, had gross earnings of \$21,968,294, an increase of \$1,566,123, or 7.7%, over Aug. 1922; expenses were \$19,940,909, an increase of \$575,632, or 3%, over Aug. 1922, and net earnings were \$2,027,385, an increase of \$990,491, or 95.5%, over Aug. 1922.

The Canadian National Rys., from Jan. 1 to Aug. 31, for the system as a whole, as specified above, is reported by the management to have had gross earnings of \$159,749,815, an increase of \$17,242,068, or 12.1%, over the same period of 1922; and operating expenses, \$154,737,970, were \$11,064,125, or 7.7%, greater, so that net earnings, \$5,011,845, compared with a deficit of \$1,166,098 in the first 8 months of 1922, show an improvement of \$6,177,943.

The Canadian Pacific Ry. in August, as shown by the table on pg. 000, had larger gross earnings than in Aug. 1922, and a smaller proportionate increase in expenses, with the result that net earnings, \$3,117,058, were \$170,621 more than in Aug. 1922.

The Canadian Pacific Ry. in the first 8 months of 1923, as shown by the table referred to above, had gross earnings \$6,263,210 greater than in the same period of 1922; operating expenses \$6,232,174 greater, and net earnings \$31,037 greater. The increase in net in August brought the net for the first 8 months of this year above that for the same period last year, this being the first time since the end of April that C.P.R. 1923 net has been better than that of 1922 for corresponding periods.

General.—As pointed out in our October issue, the Canadian National Rys. have accomplished a large improvement over 1922, the greater part of it being brought about on the Grand Trunk Western Lines. As also pointed out, U.S. railways have secured improvements in their earnings in the last year which have not been duplicated in Canada. There is no doubt that the rate reductions now in effect in Canada are cutting into railway earnings very heavily. While the C.P.R. had a better month in Aug. 1923 than in Aug. 1922, it has a long way to go before results are as good as in pre-war years, as evidenced

by the following comparison of C.P.R. net earnings for the first 8 months of each year back to 1910, viz.: 1923, \$14,753,452; 1922, \$14,722,416; 1921, \$17,580,621; 1920, \$15,248,484; 1919, \$18,961,349; 1918, \$20,085,627; 1917, \$28,574,094; 1916, \$29,086,612; 1915, \$20,143,767; 1914, \$22,256,095; 1913, \$27,192,655; 1912, \$27,094,096; 1911, \$21,861,720; 1910, \$20,946,372. The results in the first 8 months of 1923 were, with the exception of those of the

same period of 1922, the most unfavorable since 1910. From this comparison it is evident that, while some small improvement was effected, compared with last year, more must be effected if the railways are to be maintained in a position to provide needed future improvements, and it is for that reason that a greater population and more traffic are things greatly to be desired if present low rates are to remain in force.

Canadian National Railways' Earnings and Expenses Detailed.

Canadian Railway and Marine World for October published a table containing figures issued by the Dominion Bureau of Statistics, Transportation Branch, showing the Canadian National Rys. steam lines operation results, both in Canada and the United States, for June, 1922 and 1923, and for the 6 months ended June 30, 1922 and 1923. Since its publication the Bureau has issued a notice stating that a corrected report has been received from the Canadian National Rys., the revised figures of which are given below.

The Canadian lines include the combined steam railways in Canada, under the Canadian National Ry. Co.'s directors' management, embracing the former Canadian Northern System, the former Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes

all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles; Vermont & Province Line Ry., 9.77 miles, and Black Rock Terminal. It does not include other lines in New England, or lines west of the Detroit and St. Clair Rivers. The New England lines include the portion of the Montreal-Portland, Me., line from Norton Mills, Que., on the Sherbrooke Subdivision, Portland Division, Montreal District, 132.11 miles from Montreal, to Portland, 165.15 miles, and the Lewiston and Norway Subdivisions, Portland Division, in Maine, 6.68 miles, a total of 172.01 miles. They do not include the Champlain & St. Lawrence Ry., 1.21 miles; United States & Canada Ry., 22.18 miles, and Vermont & Province Line Ry., 9.77 miles, a total of 33.16 miles, which are included under the C.N.R. Canadian lines.

Operating Revenues	Month of June		Six Months to June 30	
	1923	1922	1923	1922
Canadian lines	\$17,182,563.50	\$15,365,723.08	\$97,526,070.81	\$88,253,580.69
Duluth, Winnipeg & Pacific.....	176,673.58	194,909.44	1,311,286.33	972,665.92
Grand Trunk Western lines.....	2,891,840.00	2,576,259.80	16,039,104.86	11,853,144.60
New England lines.....	224,071.49	171,823.00	1,902,210.79	1,491,243.00
Totals.....	\$20,475,148.57	\$18,308,715.32	\$116,778,672.79	\$102,570,634.21
Operating Expenses	Month of June		Six Months to June 30	
	1923	1922	1923	1922
Canadian lines	\$16,878,248.26	\$16,262,083.82	\$100,524,652.51	\$93,354,464.90
Duluth, Winnipeg & Pacific.....	173,566.07	147,522.35	1,080,923.43	891,372.47
Grand Trunk Western lines.....	1,993,272.49	1,823,641.69	11,540,589.92	9,759,948.96
New England lines.....	309,590.67	199,279.51	2,120,275.20	1,490,845.05
Totals.....	\$19,354,677.49	\$18,432,527.37	\$115,266,441.06	\$105,496,631.38
Net Operating Revenues	Month of June		Six Months to June 30	
	1923	1922	1923	1922
Canadian lines	\$ 304,315.24	\$ 896,360.74	\$ 2,998,581.70	\$ 5,100,884.21
Duluth, Winnipeg & Pacific.....	3,107.51	47,387.09	230,362.90	81,293.45
Grand Trunk Western lines.....	898,567.51	752,618.11	4,498,514.94	2,093,195.64
New England lines.....	Dr. 85,519.18	Dr. 27,456.51	Dr. 218,064.41	397.95
Totals.....	\$1,120,471.08	\$1,238,812.05	\$1,512,231.73	\$1,295,997.17

Montreal-Toronto Locomotive Runs.—Particulars of the Canadian National Rys. management's intention to operate the mountain type passenger locomotives through between Montreal and Toronto, and vice versa, were given in Canadian Railway and Marine World for September, when it was stated that the crews would be changed at Belleville, 208.4 miles from Montreal. That decision has been changed, and crews are being changed at Brockville, 125.64 miles from Montreal, and also at Belleville. Six of the mountain locomotives are in service between Montreal and Toronto, and are performing very satisfactorily on the long runs. No trouble is experienced in making the trip without having to take coal en route.

Extraordinary Action Against the C.P.R.—The executors of the late J. R. Cowell, formerly clerk of the Alberta Legislature, have filed a writ in the British Columbia Supreme Court to recover \$15,000 from the C.P.R. Co. The allegation is that Mr. Cowell's death, which occurred April 16, was caused by food eaten by him in the railway restaurant in Vancouver.

C.P.R. St. John's Ambulance Association.—C.P.R. employees in Montreal who have passed examinations in first aid under the St. John's Ambulance Association's direction, were given medallions and labels at the Windsor St. station, Oct. 5, by F. L. Wanklyn, General Executive Assistant, who presided in the absence of Grant Hall, Vice President. Fifty-nine men received medallions, having passed the third year examination, and 34 received labels, having passed the fourth and subsequent years' examinations. Inspector Monsell, who has had charge of the classes, was given an illuminated address of appreciation by the members of the classes. The C.P.R. commenced its first aid classes in 1909, since when about 20,000 employees have received instruction.

A Boy's Derailing of Canadian National Rys. Train.—A Campbellford, Ont., high school boy was arrested there, Sept. 26, and pleaded guilty on the following day to placing an obstruction on the track which brought about the derailment of a C.N.R. train on Sept. 22. On paying the costs and promising to be of good behaviour for the future, he was released on suspended sentence.

Railway Earnings and Expenses.

Canadian National Railways.

The following table was compiled by Canadian Railway and Marine World from statements supplied by the Canadian National Rys. management. We are officially advised that the figures show the earnings and expenses of the Canadian Northern Ry. system, including Duluth, Winnipeg & Pacific Ry.; Canadian Government Rys., including Intercolonial and Prince Edward Island Rys., and various local lines in the Maritime Provinces and Quebec which have been acquired by the Dominion Government; Grand Trunk Pacific Ry.; Grand Trunk Ry. lines both in Canada and the United States, but not Central Vermont Ry. or electric lines. They also include the express and hotel departments and a number of subsidiary companies, the names of which are not given, but not car ferries and steamboats, nor the telegraph department.

	Earnings	Expenses	Net	Increase or decrease
Jan.	\$18,765,458	\$19,362,197	\$* 596,739	\$1,273,039
Feb.	"16,193,823	"18,903,510	"*2,709,687	"*1,310,437
Mar.	19,460,560	19,773,916	*313,356	*733,755
Apr.	20,890,911	18,779,726	2,111,185	*3,039,973
May	20,992,772	19,092,414	1,900,358	925,126
June	20,475,149	19,354,678	1,120,471	1,244,283
July	21,002,849	19,530,620	1,472,229	749,224
Aug.	21,968,294	19,940,909	2,027,385	990,491
	\$159,749,816	\$154,737,970	\$5,011,846	\$6,177,944
Incr.	17,242,069	11,064,125	6,177,944	

*Deficit or decrease.			
Operating ratios—			
	1923	1922	
January	103.17	111.63	
February	116.73	108.84	
March	101.61	97.74	
April	89.89	106.08	
May	90.94	94.72	
June	94.52	100.67	
July	92.90	96.30	
August	90.77	94.92	
Eight months to Aug. 31.....	96.86	100.82	

The C.N.R. Publicity Department has issued a statement, from which the following figures are taken:—The gross earnings for August increased \$1,566,123, or 7.7%, over Aug. 1922. After deducting operating expenses, \$19,940,909, the net operating revenue for Aug. 1923 was \$2,027,385, compared with \$1,036,894 for Aug. 1922. The August net was \$555,157 more than for July 1923, and \$95,500 more than for Aug. 1922. The net earnings for the first 8 months of 1923 were \$5,011,846, compared with a deficit of \$1,166,098 for the first 8 months of 1922.

The C.N.R.'s Publicity Department further states that gross earnings from Jan. 1 to Sept. 30, 1923, were \$181,558,228.49, an increase of \$17,175,882.62, over the corresponding period of 1922. Gross earnings for September, \$21,808,412, were \$66,187 less than for Sept. 1922. Gross earnings from Oct. 1 to 7 were \$5,566,728, an increase of \$80,433 over the same period last year.

The C.N.R. corrected official figures, as reported to the Dominion Bureau of Statistics, for six months to June 30, for practically Canadian lines only, are given on pg. 520 of this issue and for the whole system on pg. 522.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross	Expenses	Net	Increase or decrease
Jan.	\$13,148,914	\$12,428,888	\$ 720,026	\$ 236,549
Feb.	"11,159,865	"10,664,371	"495,494	"*158,994
Mar.	13,585,763	11,606,049	1,979,714	*440,793
April	13,651,494	11,700,615	1,950,879	402,107
May	14,355,539	12,357,292	1,998,247	*346,266
June	14,943,919	12,521,918	2,422,001	59,687
July	15,677,836	13,607,802	2,070,034	108,126
Aug.	16,417,124	13,300,066	3,117,059	170,622
	\$112,940,453	\$98,187,000	\$14,753,453	\$31,037
Incr.	\$6,263,210	\$6,232,173	\$31,037	

*Decrease.
C.P.R. approximate gross earnings for September were \$17,125,000, a decrease of \$705,000 from Sept., 1922.

Tampering With a Switch Punished.—Edward Barby, 19 years of age, was sentenced to 3 years in Kingston penitentiary, by the Tweed, Ont., Police Magistrate, Sept. 15, for tampering with a C.P.R. switch at Hungerford, Ont. Prior to that offence he had broken out of the Tweed jail, and had previously been detained in the Mimico Industrial School for placing a poker on C.P.R. tracks at Smiths Falls, Ont.

Board of Railway Commissioners' Judgments on Grain Rates from Prairie Points to Pacific Coast Ports, for Export.

Canadian Railway and Marine World for October contained, on page 486, Dominion order in council 1848, passed Sept. 12, respecting export grain rates from points in Alberta, Saskatchewan and Manitoba to Vancouver and other British Columbia coast points, stating that the Privy Council's committee considered that, as the movement of grain is of the utmost and pressing importance, an enquiry as to the rates should be made by the Board of Railway Commissioners, and that the matter be referred to the Board for immediate consideration and such effective action as it might deem necessary. The Privy Council's committee made a further report, which was approved by the Governor-General on Oct. 2 and passed as order P.C. 2007, as follows:—The committee of the Privy Council having had under consideration a certain petition to the Governor in council by the Attorney-General of British Columbia, acting on behalf of that province, and by the Attorney-General of Alberta, acting on behalf of that province, by way of appeal from the Board of Railway Commissioners general order, dated June 30, 1922, made as the result of a general investigation and enquiry as to railway rates in Canada, directed by order in council 2434, dated Oct. 6, 1920, upon hearing counsel for the petitioners, for the Manitoba Government and the Winnipeg Board of Trade, and for the railway companies interested; and it appearing that the question as to the rates on grain from points in Saskatchewan and Manitoba to Vancouver and other British Columbia coast points for export was not specifically dealt with in the Board's said judgment, the committee, therefore, recommends that the subject of export grain rates from points in the said provinces to Vancouver and other British Columbia coast points be referred to the Board for immediate determination and such effective action as it may deem necessary. The committee further recommends that the order in council 1848 of Sept. 12, 1923, be rescinded.

The principal portion of order in council 2007, as given above, is practically the same as order in council 1848, which it rescinded, the only important variation being that order 1848 stated that "the committee of the Privy Council considers that, inasmuch as the movement of grain is of the utmost importance, an enquiry as to the said rates on grain should be made by the Board," while order 2007 omits that and states that "the committee recommends that the subject of export grain rates from points in the prairie provinces to Vancouver, and other British Columbia coast points, be referred to the Board for immediate determination and such effective action as may be necessary." The Board's judgment was given on Oct. 9, being concurred in by Hon. F. B. Carvell, Chief Commissioner; S. J. McLean, Assistant Chief Commissioner; Hon. W. B. Nantel, Deputy Chief Commissioner; and Messrs. A. C. Boyce and C. Lawrence. After reciting order in council 2007, as given above, it is as follows:—

In Oct. 1920, this Board was directed by the Governor in council, by order in council 2434, to enter into an investigation as to whether or not discrimination in the general rates of the railway companies existed as against western

Canada, as compared with those in existence in eastern Canada. The Board started an immediate investigation, and some time thereafter the Province of British Columbia asked to be heard, claiming that their domestic rates, based upon the mountain scale then existing, were discriminatory as compared with prairie rates, and asking generally that mountain rates be abolished and prairie rates substituted in lieu thereof. Incidentally, on two or three occasions, during the hearing and the argument, reference was made to export rates on grain, but the Board did not feel they had been sufficiently developed to justify any special finding thereon; but as the judgment referred to in the said order in council was issued within a couple of days after the enacting the Statutes of the Parliament of Canada, chap. 41, 1922, being the statute referring to the Crowsnest rates on grain, so-called, for that year, the Board realized there would be complaints against the size of the spread between eastbound and westbound movements of grain, if there were no reduction made in the export rates on grain to Vancouver, and so informed the representatives of both the Canadian Pacific and Canadian National Railways. As a result of these conferences, the railway companies voluntarily made a general reduction in export rates between prairie points and Pacific coast points of 20%. Later on, the Province of Alberta joined with the Province of British Columbia in an appeal to the Governor in council, in which they asked not only that local rates between the two provinces be placed upon the prairie rate basis, but that Crowsnest rates be applied on all grains to be shipped from prairie points to Vancouver and other Pacific ports for export; and this is the real question which the Governor in council has referred to this Board for decision; and, as under the Railway Act, sec. 38, the Governor in council has this right, the Board is now taking the earliest steps possible, in order to comply with such request.

The export rate situation in the United States has an intimate relation to the export rate situation in Canada. Taking grain as a characteristic commodity, and taking Chicago as a common point, grain, for export to Europe, may find its export points at Montreal, Portland, Boston, New York, Baltimore, Philadelphia, and Newport News. In connection with the movement through New York, the rate from Buffalo is exceedingly important, and has a controlling effect as a maximum on the movement from Canadian Georgian Bay ports. In addition to the movement easterly and southeasterly, which has been referred to, the effect of the southbound movement to the Gulf of Mexico should be borne in mind. For example, there is an extensive corn movement from Milwaukee to Georgian Bay ports for export, via Montreal. There is also a movement from Milwaukee, for export, by route combined of water to Buffalo and rail to New York; and there is also a water route by way of the lakes and the St. Lawrence. Milwaukee ships wheat to Georgian Bay ports and also by the St. Lawrence route. At times, it draws from as far south as Kansas, and may also draw from eastern Colorado; but if there is a large volume of tonnage offering for ports in the

Gulf of Mexico, for example, Galveston, the result is that a combination of the lower ocean rate and the rail rate works farther north, thus coming closer to the lakes and taking traffic southbound which ordinarily might move either by way of Buffalo or by way of Georgian Bay ports and through Canada. The situation, then, is that in the easterly half of the United States, taking a line drawn south from Chicago, say, to Galveston, thus embracing a dense traffic territory, there is a range of ports, from Galveston and New Orleans on the south, to Montreal on the north, all in a competitive situation; and the rate adjustment which affects one affects the others.

Further, as bearing upon the effect of the southbound movement, it may be said that if a point is taken, say, about Superior, Wis., and a line drawn southeasterly, swinging down along the west shore of Lake Michigan on to Savannah, Georgia, all points west of this line would be closer by direct rail mileage to the Gulf ports and South Atlantic ports than to New York. This, again, is a factor which has a bearing upon the rate combinations working through Buffalo. The effect of the port competition has been recognized in many decisions of the Interstate Commerce Commission. A brief reference to these may be made: It has recognized the justifiability of differentials existing at the North Atlantic ports. For example, in dealing with flour and grain rates from western ports to Boston, Philadelphia and Baltimore, it has held that the inland rates should be so adjusted as to enable each port according to its advantages to compete for export traffic.—*Re-Differential Freight Rates* (1905) 11, I.C.C.R., 13.

Again, in dealing with the question of the movement of grain, flour and provisions from western points to Atlantic seaports, it said in 1898 that the principle upon which the differentials were based was legitimate, viz.: competition between inland carriers; and it held that the existing differentials were not lawful.—*New York Produce Exchange vs. B. & O. Rd. Co. et al*, 7 I.C.C.R., 612.

It was stated that the export rate is really a portion of the through rate which must vary according to the cost of water transportation from the port to the foreign country.—*Hecker-Jones-Jewell Milling Co. vs. B. & O. R.R. Co.*, 14 I.C.C., 356-360.

Whether export and import traffic will move through a particular port depends upon the combined rail and water rate to a foreign destination.—*New England Investigation*, 27 I.C.C., 560 and 615.

In dealing with the differential system already referred to, it has been said that it is intended to adjust on a practicable basis the rivalries of the northern seaports on export, import and domestic traffic.—*Scott Paper Co. vs. P.R.R. Co.*, 26 I.C.C., 601-602.

Referring to the Gulf rates, of which mention has already been made, it has said that export rates to the Gulf are based on established differentials under the through rates to the North Atlantic ports, the Baltimore rates being taken as a standard.—*Chicago Board of Trade vs. I.C.R.R. Co.*, 26 I.C.C., 545-546.

In a case of involving export rates on steel from Chicago to Pacific ports, as compared with rates from Pittsburg to Pacific ports, it was said, on behalf of

the Director-General of Railroads, that the export rates were not made upon any consideration of reasonableness of rates in and of themselves, and length of haul and cost of transportation were not controlling factors; but that the rates were established to effect a better distribution of export tonnage between ports.—*Inland Steel Co. et al vs. Director-General of Railroads*, 55 I.C.C., 462, 464.

It was recognized in this case that there was a water route available to Pittsburg on the east; that is to say, a combination of the rail-haul to the Atlantic seaports with a water route to the Pacific was available. The following language was used: "The distance from Chicago to its nearest port from which ocean routes to the Orient operate is considerably greater than the distance from Pittsburg to its nearest port, and whatever disadvantage industries at Chicago may operate under is not attributable to the defendant in this case; and in our view of the situation the cancellation or increase of the rate from Pittsburg to Pacific coast ports would not remove such disadvantage."

In dealing with export rates on cotton, the following language was used: "The export cotton rate adjustment as set out is the result of many years of tariff construction based on experience. The rate from a common point to each port is made with relation to the rate to some other port, so that a reduction in a rate to any one port entails the readjustment of the rates to all other ports, and a consequent reconstruction of this whole rate adjustment."—*Mobile Chamber of Commerce et al vs. Mobile & Ohio Rd. Co. et al*, 32 I.C.C., 272, 275.

The mileage factor is not the dominating one. This is seen, for example, in the fact that prior to the establishment of Federal control in the United States, San Francisco, Cal., and Seattle, Wash., were on a rate parity as to export traffic.—*Mitsui & Co. vs. Director-General et al*, 64 I.C.C., 4.

In dealing with the matter of import rates, this Board has had to recognize the situation arising out of port competition. The rate from Montreal is governed by the rate available from U.S. ports. If it exceeds this, the traffic will move by U.S. ports. In dealing with import rates, the Board has had to recognize that any change in a rate schedule which would advance the railway import rate, which represents part of the through movement, would simply mean that the business that is today done at the Canadian port would move through New York or some other port in the U.S., unless similar advances were made by U.S. carriers.—*Canada China Clay Co. vs. G.T., C.P. and C.N. Rys. Cos.*, 18 Can. Ry. Cases, 347, 349. The references made to the Interstate Commerce decisions are concerned with setting out from official documents the practice which exists in the U.S.

In the export movement by way of Montreal, there is, as has been pointed out, the necessity of interaction between the rates from the North Atlantic ports in the U.S. and the rate that can be charged from Montreal. Further, the rates from the North Atlantic ports are keyed into a rate structure in which are included the South Atlantic ports and the Gulf of Mexico. Back of all this rate adjustment is the fact that the commodities concerned are being exported to a common market, and the ability of the product produced in one section to compete in a common market with the product produced in another section is

affected by the total rate combination by land and by water. This is especially recognizable in the case of grain, and the interaction of rates on the eastern section of North America, to which reference has been made, has been concerned with an endeavor to allow the portions of the commodity produced in different sections to compete on as even a keel as possible in a common market. The rate adjustment so arrived at, taking these facts into consideration, are rate adjustments in a territory where the volume of traffic is the most dense per mile of line on the North American continent; and, further, is concerned with the movement to ports where there is a large and established volume of ocean tonnage much in excess of that offering to Pacific ports; that is to say, the existing rate adjustment is effected and modified downward by volume of traffic and volume of ocean tonnage.

In the Western Rates Case, a decision which was the outcome of a lengthy investigation dating back in its inception to Nov. 14, 1911, and decided April 6, 1914, an exceedingly comprehensive study of Canadian rate structure was made. Since then, on account of increases in costs, rates have been increased by percentages, but the Board has been more than glad when from time to time it has been possible to reduce somewhat the increases which conditions had rendered necessary. Subject to the changes so made, including a reduction in British Columbia standard rates, the rate structure today is the one which was sanctioned and directed under the Western Rates Case.

The Western Rates judgment said, under the heading of "Grain to Vancouver for export": "A tariff designated 'Special Proportionate,' is on file containing the rates charged from Alberta and Saskatchewan to Vancouver on grain and grain products for export to all countries, except the United States and Alaska. These rates are lower than those to Vancouver on the same commodities for domestic consumption referred to above as having been disproportionately depressed by the stress of competition. Comparatively, then, this export schedule cannot be criticized as being excessive. Counsel for the province attempted to show that unjust discrimination existed to the extent that the local rates exceed the export. But this Board, as well as the Interstate Commerce Commission, has frequently ruled that a lower rate on export traffic is, in itself, no evidence of unjust discrimination, provided that the local rate is a reasonable one. It is quite conceivable that a carrier would prefer to withdraw from co-operation in seeking the foreign market rather than sacrifice its legitimate revenue on the local traffic to the port of exportation, and, perhaps, to its intermediate interior points also. Counsel sought to show that the comparison of the export rates to Vancouver should be with the company's rates to the Lake Superior ports; but, if any comparison be useful, it should be between the Pacific port on the one hand and the Atlantic ports on the other. Fort William is an intermediate transfer point on the way to the eastern destination, and the rates to that port are, as described in the tariffs, proportionals of through rates from the grain fields to the eastern consumer. It is true that a negligible fraction of the entire cost may find its way into the local Fort William or Port Arthur market; but an exceptional tariff for this fraction is

hardly possible, seeing that the railway company loses control once the grain is delivered to the terminal elevators."

The principle laid down above is based on the principle of competition of ports which have developed in the U.S., and which of necessity have been accepted in Canada. In dealing with the competition of ports on export traffic, conditions arise which are entirely different from those affecting domestic traffic. It has been recognized both by the Interstate Commerce Commission and by this Board that there is no necessary relation whatever between domestic rates and export rates. In dealing with export rates on traffic moving through a number of competing ports, the factor of mileage has in many cases to be almost entirely disregarded. Given a certain movement through a port favorably situated in regard to mileage, another port with a longer mileage must meet that rate or go out of business. It must be recognized that on export movements the rail rate to the point of export is only one factor in getting the product to its destination. The other factor, so far as transportation is concerned, is the cost of ocean carriage. Wherever a product like grain, affected by world competition, is concerned, it is impossible to take mileage as a final criterion of the rate adjustment. Having this in mind, and having further in mind the care which was taken in arriving at the decision in the Western Rates Case, the opinion is justified that in arriving at a revised basis for grain for export by way of Vancouver, it is proper to take into consideration the export rate basis by way of Montreal. Summarizing what has already been said, there is reflected in the rate basis by way of Montreal the effect of the larger rail tonnage; the effect of the control exercised by export rates through U.S. ports; and, the greater volume of ocean grain tonnage offering from Montreal. The basis of adjustment so recommended goes further than has been laid down in any specific case in which the Interstate Commerce Commission has been concerned. At the same time it is justifiable, not only from the standpoint of principle, but from the standpoint of the particular needs involved.

It was claimed before the Governor in council, by representatives of the two provinces hereinbefore mentioned, that the Crowsnest rates should be applied upon all grains for export, moving from prairie points westward, as well as eastward, and that brings the Board to a consideration of the Crowsnest rates, their origin, and to what extent they should be and are binding upon this Board in arriving at just and reasonable rates, as between the transportation companies and the public. In 1897, by the Statutes of Canada, chap. 5, an agreement made between the Canadian Pacific Ry. and the Government was ratified, by which the Government agreed to grant the company a subsidy of \$3,630,000, to help to build a railway through the Crowsnest Pass, extending from Lethbridge, Alta., to Nelson, B.C., and in consideration thereof, the C.P.R. agreed that there should be a general reduction of 3c per 100 lb. in the then existing rates on grain and flour, eastward, from the most westerly point of the prairie production to Fort William; one-half of the reduction to take place immediately, and the other half the next year. In addition, there was a somewhat lengthy list of other commodities from Fort William and points east thereof, to

western Canada, to which fixed rates were applied, and the agreement provided that at no time in the future should these respective rates be increased.

These rates were not increased, but so far as grain was concerned, they were somewhat decreased a few years after, as a result of the Manitoba agreement, which was entered into between the Manitoba Government and the Canadian Northern Ry.; but, in 1918, by this Board's order, the rates were brought back to the Crowsnest Pass basis, and by order in council 1863, in Aug. 1918, the restrictive provisions of the Crowsnest agreement were for the time suspended, and the Board was given full power to make whatever rates it considered just and reasonable under the then existing conditions, regardless of the agreement. This continued during the continuance of the War Measures Act, and when the Railway Act was codified, effective July 6, 1919, an amendment was added to sec. 325, which provided in substance that, notwithstanding any previous legislation, this Board would have the power to regulate rates for three years from the date thereof. Just prior to the expiry of the three years, or on June 28, 1922, Parliament passed an Act to Amend the Railway Act, chap. 41 of the statutes of that year, which reads as follows: "1. Subsection 5 of section 325 of the Railway Act, 1919, shall, notwithstanding the proviso thereof, remain in effect until July 6, 1923, and may be continued in force for a further period of one year by order of the Governor in council published in the Canada Gazette; provided that notwithstanding anything herein or in said subsec. 5 contained, rates on grain and flour shall, on and from July 6, 1922, be governed by the provisions of the agreement made pursuant to the Statutes of Canada, 1897, chap. 5." The effect of which was, that the rates on grain and flour, after July 6, 1922, were governed by the provisions of the agreement made in 1897; and, therefore, so far as rates on grain and flour from all C.P.R. points in western Canada to Fort William are concerned, there can be no question that they are, and must be, governed by the provisions of the Crowsnest agreement, and as a matter of railway policy, as the Canadian Pacific and Canadian National Rys. are so intertwined in different parts of western Canada, the Canadian National is, as a matter of business, practically compelled to adopt whatever rates have been applied by Parliament to the C.P.R., and, therefore, Crowsnest rates become universal from prairie points to the head of the lakes.

It is significant as showing the intention of Parliament, when passing the Crowsnest Pass Act of 1897, to limit its rate-fixing legislation to the exact terms of the contract between itself and the railway company, that by the same act, sec. 1, ss. (c), it was stipulated that the agreement should provide that all other rates and tolls on the railway and its connections as therein mentioned, as well as on its steamboats in British Columbia, should be first approved by the Governor in council (this Board not being then in existence) "or by a railway commission if and when such commission is established by law." Apart from the very plain reading of the act itself, and of the provisions of the Railway Act, the intention is clear that the rates established by Parliament for particular reasons, and under special conditions, were not to be taken as the basis or standard of other rates, especially

so with regard to the westbound Crowsnest Pass Ry. to British Columbia, and also that the powers of the Governor in council, or of this commission (if and when established), should not in any way be affected or restricted by the special rate-fixing clauses of the act, under the special circumstances named. The effect, therefore, of the legislation was that, solely in respect of the specific articles and products to be included in the agreement, and as to which, by the agreement and for the consideration of subsidy in the act mentioned, the railway company reduced its rate, within the specified territory, but that as to other tolls and rates, they were to be fixed by the rate-fixing tribunal in the fullest and widest exercise of its jurisdiction to fix just and reasonable rates upon all other traffic upon all railways within its jurisdiction.

The Crowsnest Pass agreement was not binding upon any other railway then or subsequently operating in that territory, although its provisions affected them, neither is there anything in the act or agreement which defines those rates, within that territory, as just and reasonable, having regard to general traffic conditions, or which could limit, or restrict this Board in the establishing of such rates on other railways within the same territory which to this Board might, from time to time, appear to be just and reasonable. Then the legislation of 1922 simply provides, after an interruption of the currency of the agreement by its suspension as hereinbefore mentioned, that the provision of the agreement governing such rates, as an incident of the transaction of 1897, should remain in force. That is, that the terms of the agreement of the railway company made in 1897 should continue to govern these rates. If, therefore, the contention of the two western provinces were concurred in, rates on grain and flour made 26 years ago, as the result of a special agreement, for a valid consideration, in specific territory, and in a certain direction, should be the basis of all other rates from the same territory westward, as well as eastward and in territory not included in the agreement. It would hardly seem that such an argument would be tenable and, therefore, the Board should proceed by some other method to arrive at "just and reasonable rates" for the transportation of these particular commodities to the Pacific coast. If we exclude the Crowsnest rates as the proper basis, we must then look for some other method of arriving at what would be considered a just and reasonable basis, and perhaps no better method could be adopted than to go to other parts of the continent where grain is moved in very large quantities under competitive conditions, both as to other railways, and as to water carriers. If we do, we find the following as being some of the outstanding rates answering to these conditions:

From	To
Edmonton	Vancouver
Buffalo	New York
Bay Ports	Montreal
Fort William	Montreal
Fort William	Quebec
Minneapolis	New York
Duluth	New York
Morse, Sask.	Vancouver
Windsor	Montreal
Morley, Alta.	Vancouver

It should be mentioned in passing that no reference has been made to the rates on grain and grain products to St. John and Halifax, which, if figured on the basis of the rate per ton per mile, would be very much lower than any rates men-

tioned above, but these rates are compelled by the fact that as all rates on grain from lake ports to the Atlantic seaboard are governed by the rate from Buffalo to New York, it therefore follows that the rate from Canadian Georgian Bay ports to St. John and Halifax must be the same as the rate from Buffalo to New York, otherwise none of the commodities would move through these ports, and while the distance is much greater, the rate is the same; and therefore is no criterion of what would be a just and reasonable rate in any portion of the country in which there are no such compelling factors to determine the rates. An examination of the Crowsnest rates shows that they again are based upon no fixed principle in arriving at the rate per ton per mile; but, generally speaking, the rate is reasonable at Winnipeg, tapering to an extremely low rate from Moosejaw west to Calgary, as compared with other rates hereinbefore quoted. Following out the same method of rates per ton per mile, we find the same to be about as follows:

		Rate in cents	
To Fort William	Miles.	Rate.	per ton per mile
Winnipeg	419	14c	.666
Brandon	552	16c	.577
Broadview	684	18c	.526
Regina	777	20c	.514
Swift Current	929	22c	.475
Medicine Hat	1076	24c	.446
Calgary	1243	26c	.418

Following up the principle hereinbefore quoted, as laid down in the Western Rates Cate, we must consider the export point to be Montreal, or some other Atlantic coast port, and as the Montreal rate is practically 1c lower than the rate to New York, Portland, St. John, Halifax, etc., therefore it would be the most favorable point upon which to make a comparison. Taking the mileage from Port McNicoll to Montreal with its existing water and railway compelled rate of 14.34c, and add to that the mileage and rates from a number of points west of Fort William, we would have the actual rail rate from these specific points to Montreal, of course, eliminating the lake movement, as follows: Winnipeg to Fort William, 419 miles, rate 14c; Port McNicoll to Montreal, 371 miles, rate 14.34c; total mileage 790, rate 28.34c, which figures out at a rate of .717c per ton per mile, and the mileage is not very different from that of Edmonton to Vancouver. Take next, Brandon to Fort William, 552 miles; Port McNicoll to Montreal, 371 miles; total mileage 923, with a total rate of 30.34c, which figures out at a rate of .675c per ton per mile. Thirdly, Broadview to Fort William, 684 miles; Port McNicoll to Montreal, 371 miles; total mileage 1,055, with a total rate of 32.34c, or a rate per ton per mile of .613c. It will, therefore, be seen that the present rate from Edmonton to Vancouver, 771 miles, with a rate per ton per mile of .648c, is lower than both the rate from Brandon and Winnipeg computed on this basis, and slightly higher

Miles	Rate	Rate per ton per mile
771 (C.N.)	25	.648c
396 (shortest)	15.17	.766c
410 (average)	14.34	.699c
997 (C.P.)	34½	.692c
1145 (C.P.)	31½	.602c
1330 (shortest)	35½	.533c
1378 (shortest)	35½	.515c
994	29	.58c
568	23½	.83c
600	24	.80c

than the rate from Broadview. The Board would not obtain much information by making comparison with grain rates to the Pacific coast in the U.S., because they are invariably higher than the present prairie point rates to Vancouver,

and, of course, the same is true to a greater degree when we compare all Canadian prairie point rates to Fort William and Port Arthur with U.S. prairie point rates to Duluth and Minneapolis.

Having thus given a large number of actual rates, both in eastern and western Canada, it will be seen that no absolute rate can be chosen as the measure of what would be a just and reasonable rate from prairie points to the Pacific coast; but, perhaps, the fairest method would be to take a point midway between Fort William and Vancouver and establish therefrom to Vancouver a rate based on the rail-haul eastbound to Montreal. Taking Cantuar, on the C.P.R., 942 miles from Fort William, and 944 miles from Vancouver, the all-rail rate eastbound gives the following figures: 942 miles to Fort William, 23c; 997 miles, Fort William to Montreal, 34.5c; total 1,939 miles, 57.5c, equals a rate per ton per mile of .593c. Applying this rate per ton per mile for the shorter distance, Cantuar to Vancouver, produces a rate of 27.98c. The present rate is 28c. A large percentage of the Canadian haulage of grain from the prairies is by rail to the head of the lakes, thence by water to Georgian Bay ports, thence by rail to Montreal. Eliminating, therefore, the water-haul and taking the rail-haul eastbound from Cantuar, via the shortest route, the C.P.R., being that portion of the haul over which this Board has jurisdiction, the figures are: 942 miles to Fort William, 23c; 371 miles, Port McNicoll to Montreal, 14.34c, which equals a rate per ton per mile of .568c. By applying this basis from Cantuar to Vancouver, Vancouver obtains all the advantages of the Crownsnest basis to Fort William, plus the advantage of a water and Buffalo-New York compelled rate from eastern Canadian Georgian Bay ports to Montreal. This basis would make the rate, Cantuar to Vancouver, with its shorter haul, of 27c per 100 lb. By adopting this 27c rate as basis, Cantuar to Vancouver, 942 miles, and then computing rates from other points of less or greater distance from Vancouver by applying the same rate difference as now exists in the rates to Fort William for equivalent mileages from points on the C.P.R. main line, rates would be produced to Vancouver as per the following examples:

From	Miles	Present Rate	Proposed Rate
Calgary	642	25c	22c
Bassano	721	26c	23c
Edmonton	771	25c	24c
Medicine Hat	818	27c	24c
Vegreville	844	27c	25c
Cantuar	944	28c	27c
Swift Current	957	29c	27c
Moose Jaw	1067	31c	28c

By the above method, the Edmonton to Vancouver rate shall be 24c, compared with 22c from Calgary, and on a strictly mileage basis the Edmonton rate would be about 20% higher than the Calgary rate; yet in practice both rates have been built on the basis of the shorter mileage. If the above described method were pursued, it will, therefore, be seen that it will amount to a reduction in some cases of slightly over, and in other cases slightly under, 10% of the existing rates, and in order to preserve the present rate structure, probably the fairest rates could be obtained by making a general reduction of 10% in those existing at the present time.

While the order in council made no reference to grain products, yet, as they have always been connected together, it is the Board's opinion that grain products

should be treated the same as grain, including milling-in-transit privileges at 1c per 100 lb., and all railways subject to the Board's jurisdiction engaged in this traffic should file rates, effective not later than Oct. 22, making a general reduction of 10% in the existing rates on grain and grain products, to Pacific coast ports for export; also grant the milling-in-transit privilege of 1c per 100 lb., as at present contained in the tariffs. In applying these rates, fractions shall be disposed of as provided for in Privy Council order 1863. An order should be issued accordingly.

Commissioner Oliver's Dissenting Judgment.

Hon. Frank Oliver, the newly appointed commissioner, from Edmonton, Alta., gave the following dissenting judgment on Oct. 10:—The Commission is sitting to consider a reference by the Railway Committee of the Privy Council of an appeal made by the Provinces of British Columbia and Alberta for an equalization of rates on grain from prairie points to Vancouver with those on grain from prairie points to Fort William, over the same mileage. The rates on grain, as they stand from prairie points to Vancouver, are the result of a general decision of this Board dated June 30, 1922. From the rates so fixed, the Government of British Columbia, and jointly that of Alberta, appealed to the Privy Council. The Privy Council has taken no action on the appeal as to rates on other commodities, but has referred the subject of export grain rates to B.C. coast ports to the Board "for immediate determination and such effective action as may be necessary." I am compelled to assume that the Privy Council saw special merit in the appeal for equalization of export grain rates, or it would have either disallowed the appeal, as a whole, or deferred further consideration of grain rates, as it did of the other rates in regard to which equalization was applied for.

The present eastbound grain rates from prairie points to Fort William were made effective by a statute passed in 1922. As the present rates are substantially lower than those formerly prevailing, it must be assumed that in the judgment of Parliament, they were suitable to the conditions then and still existing, having due regard both to the cost of the service and the requirements of the trade in transporting prairie grain to its nearest point of export. The present grain rates eastbound to Fort William are the same as were established by the Crownsnest Pass agreement, but that agreement is not now in effect, and its enforcement has not been insisted on by either of the parties to it. It fixed rates on many commodities other than grain. The 1922 statute gives force and effect to rates on articles other than grain, which rates differ from and are greater than those provided in the Crownsnest Pass agreement. Parliament having exercised its right to vary the rates of the agreement in one set of particulars, must accept equal responsibility for the single provision which continues the rates of the original agreement. Therefore, I respectfully contend that the rates on eastbound grain now in force on the prairies, as long as they continue, are entitled to be considered without regard to the agreement by which they were first brought into force, and as having been fixed by the Parliament which sat in 1922, on its sole responsibility.

The British Columbia Government argues that the proper standard of comparison for westbound rates on the trans-continental railways, is the eastbound rates, as established by Parliament from common points for like distances over the same railways. I dissent from this, to the extent of suggesting that only where the operating conditions are on an approximately equal basis, should this comparison hold. As I understand the Board's duty, it is to prevent discrimination, and I recognize that cost of railway service depends upon other factors, as well as mileage. The operating conditions on the Canadian National Rys. between the prairies and the Pacific ports of Vancouver and Prince Rupert are not more costly or difficult than those existing on the same system, or on the C.P.R. between the mountains and the lake ports of Fort William and Port Arthur. I am entirely in agreement with the contention of the provinces of British Columbia and Alberta that the grain producer of the prairies, the bulk of whose product must find an export market, has the right to an equal per mile rate over the National Railways westward to the ocean ports of Vancouver and Prince Rupert, as has been given him by Parliament over the same system to the lake ports of Fort William and Port Arthur.

At one time Fort William and Port Arthur were merely points on the Canadian line of transportation extending to Montreal. That condition no longer exists. Practically two-thirds of the western grain crop, exported by the eastern route, is transferred to ships at these lake ports, and passes absolutely and finally out of Canadian hands and out of rate control by this Board. Of the part that follows the all-Canadian line of transportation to Montreal, the conditions of lake shipping, as to service and rates, are such as to preclude effective control of the through rate to Montreal by this Board. For all practical purposes, and particularly as to control of rates of transportation by this Board, Fort William and Port Arthur are export ports, as well as Vancouver and Prince Rupert, and therefore there is no justification for instituting a comparison between export grain rates east of the lakes and those west of the lakes.

The operating conditions on the C.P.R., between the prairies and the Pacific, are more difficult than those which exist on that railway between the mountains and Fort William. Therefore, the comparison made in regard to the Canadian National Rys. does not hold in regard to the C.P.R. Because of this condition, it has been the practice, in making rates in the past, to concede a higher rate in the mountains than on the prairies. So long as the C.P.R. was the only railway through the mountains, that was, in my opinion, a perfectly sound principle, and should be continued, with such adjustments as may be proper from time to time, as far as that railway is concerned. But I cannot admit, that because mountain rates are proper on the C.P.R., which has to surmount high altitudes, by means of difficult grades, that, therefore, they are warranted on the Canadian National lines, which were conceived and built for the express purpose of avoiding these conditions, as they in fact do avoid them.

Under the 1922 statute, the railways are compelled to convey the total grain crop of the prairies to Fort William as required. The rate for that service has been fixed by the highest authority. If we order the railways to render the

same service at the same rate per bushel, and per mile (making due allowance for a mountain rate on the C.P.R.), when called upon to transport a part of that grain to the Pacific coast, we are not putting a cent of extra burden on the railways, and we are adjusting a discrimination against the prairie producer that is a serious bar to the further development of the more westerly portion of the prairie area, which is approximately two-thirds of the whole. The haul from the railway centres of Edmonton and Calgary, the first important points east of the mountains, to the head of the lakes, is approximately 1,250 miles. The eastbound rates at present in force diminish the charge per mile of haul with increase of distance from the lake ports. From Fort William to Vancouver, by the National line, is approximately 2,000 miles. The point of middle distance on the Canadian National main line is about Scott, Sask. Grain hauled eastward from points west of Scott, that is to say, from the western part of Saskatchewan and the whole of Alberta, to Fort William, pays a lower per mile rate to the railway, under present conditions, than it would if it were hauled westward at the rates which now apply for the like distances on the eastbound haul. In other words, if the eastbound rates from Scott easterly to Fort William were applied to westbound traffic from Scott westerly to Vancouver, the railways would earn an increased rate per mile on every car of grain produced in Alberta and western Saskatchewan, over the rate they now receive on the haul of that grain to Fort William. The maintenance of a higher rate westward than eastward, with the diminishing scale of rates on the longer haul, has the effect of placing a higher gross charge against the grain of Alberta and western Saskatchewan, and requiring the railways to haul it eastward at a less remunerative rate.

In regard to westbound rates over the C.P.R. from prairie points to Vancouver, it is not necessary, in discussing this reference, to exactly define what they should be. Such definitions should follow an expert enquiry as to what would be a fair mileage or percentage allowance in computing a mountain rate, according to the conditions that are entitled to be considered. The wording of the portion of the British Columbia appeal, which has been referred to this Board, is as follows:—"To cease from making and charging higher tolls, for the transportation of wheat, corn, oats and other grains, flour and other mill products, hay, straw, flax, and other agricultural products from points in Alberta, Saskatchewan and Manitoba, to points in British Columbia, than are charged for the transportation of such wheat, corn, oats and other grains, flour and other mill products, hay, straw, flax and other agricultural products from points in Alberta, Saskatchewan and Manitoba and Ontario, and as far east as, and including, Fort William and Port Arthur, over the same or similar distances."

The importance of the application to the producers of Alberta and western Saskatchewan can only be clearly understood by a comparison of the westbound with the eastbound rates now prevailing:

	Rate per cwt.	Distance miles
Edmonton to Vancouver.....	25c	771
Regina to Fort William.....	20c	777
Tofield to Vancouver.....	27c	811
Moose Jaw to Fort William.....	20c	818
Chauvin to Vancouver.....	28c	931
Swift Current to Fort William.....	22c	929
Landis to Vancouver.....	29½c	1016

Maple Creek to Fort William....	23c	1013
Saskatoon to Vancouver.....	31½c	1098
Asquith to Vancouver.....	31c	1073
Medicine Hat to Fort William....	24c	1076
Watrous to Vancouver.....	33c	1187
Bassano to Fort William.....	25c	1165
Jasmine to Vancouver.....	33½c	1244
Calgary to Fort William.....	26c	1243
Edmonton to Fort William (distance approximately same as Calgary to Fort William).....	26c	

For the reasons above given, I feel compelled to support the application of the provincial governments regarding export grain rates, and therefore dissent from the Board's majority judgment.

General Order 384, issued Oct. 10, in conformity with the Board's majority judgment, is given in full under "Traffic Orders by Board of Railway Commissioners" on another page of this issue.

Passenger Traffic Officials' Duties, Canadian National Railways.

H. H. Melanson, General Passenger Traffic Manager, C.N.R., has issued a circular defining officials' duties, as follows:—

W. S. Cookson, Manager, Passenger Tariff and Ticket Bureau: Will supervise issuance and distribution of passenger tariffs, tickets, ticket supplies and accessories, for the system. In co-operation with passenger traffic officials of the regions affected, and Legal Department will deal with railway commissions and other public bodies, in connection with questions relating to passenger tariffs. Will issue and receive passenger concurrences from other transportation lines. Will handle passenger division matters for the system. In co-operation with passenger traffic officials of the regions, will deal with the Accounting Department regarding interpretation of tariffs, agents' discrepancies, etc.

R. L. Fairbairn, Manager, Passenger Service Bureau: Will, in co-operation with Transportation Department and passenger traffic officials of each region, arrange regular passenger schedules and co-ordinate them as between the different regions. Will generally supervise the handling of government and railway business mails. Will have general supervision of baggage traffic matters. Will compile and distribute public time table folders and announcements of changes in schedules, in co-operation with the Advertising Bureau. Will act for the Passenger Traffic Department at hearings of the railway boards and other public bodies, in connection with regular passenger train schedules; co-operating with Transportation Department, passenger traffic officials of regions affected, and the Legal Department. Will handle the correspondence relating to regular passenger train service, and keep necessary records of passenger train statistics.

H. R. Charlton, Manager, Advertising Bureau: Will supervise the issuance and distribution of all advertising publications, maps and other literature. Will arrange for all forms of direct advertising, such as newspapers, magazines and other publications, exhibitions, office window and other displays, etc., also supervise regional advertising, in co-operation with system and regional passenger traffic officials. Will arrange for lectures, moving pictures, photographic work, advertising write-ups, and other authorized passenger traffic advertising; also co-operate with the freight, express, telegraphs, sleeping and dining car and publicity departments, hotels and other branches of the system, in respect to their advertising matter.

Toronto Union Station Contractors' Suit.

The Toronto Terminals Ry. Co. was sued in the Quebec Superior Court by Peter Lyall & Sons Construction Co., general contractors for Toronto union station, in warranty, to compensate them to the extent of \$72,316 in the event of judgment being given against the Lyall company in an action brought by R. H. Clarke & Sons, Ltd. The Lyall company let a sub-contract to the Clarke company for lathing and plastering to the amount of \$85,126, and additional contracts, bringing the whole up to \$128,668. There were considerable delays in the execution of the work, the sum finally involved being \$196,965, of which the Lyall company paid \$124,248, leaving \$72,317 due. The Lyall company alleged that the delays which caused the loss to the Clarke company were brought about by the Toronto Terminals Ry. Co., for which the station was being erected, in not supplying within a reasonable time documents and instructions to enable the work to be proceeded with, and finished within the times set in the contracts. The railway company replied by an inscription in law submitting that the contract entered into with the Lyall company did not hold it responsible in damages for any such delay as that complained of. Mr. Justice McLennan gave judgment Oct. 9, finding that the delay alleged by the Lyall company, under the contract, gave a right to an extension of time for the work, but did not entitle them to any further claim, or to any compensation by way of damages. The Toronto Terminals Ry. Co.'s inscription is well founded and maintained. The Lyall company's action was dismissed with costs, except the cost of the first contestation, which are against the railway company.

U.S. Railways' Financial Results.

The U.S. class 1 railways' net operating income in August was \$98,381,200, representative of an annual return of 4.94% on tentative valuation, compared with net operating income of \$51,475,400 in Aug. 1922, representative of an annual return of 2.64%. Operating revenues for Aug. 1923 were \$561,456,700, an increase of 19% over Aug. 1922, while operating expenses, \$424,751,400, were 10% greater than those of Aug. 1922. Net operating income for the first 8 months of 1923 was \$625,634,900, representative of an annual return of 5.4% on tentative valuation, compared with net operating income of \$466,447,100 in the first 8 months of 1922, representative of an annual return of 4.11% on tentative valuation.

Class 1 railways in the eastern and southern districts continue to enjoy better net earnings than those in the western district. In August, the eastern roads earned at the annual rate of 5.61% on tentative valuation; southern roads at the rate of 5.38%; and western roads at the rate of 4.6%. Freight traffic on the eastern roads was nearly 50% greater in Aug. 1923 than in Aug. 1922, on account of the miners' strike last year, while Aug. 1923 traffic on the southern roads was about 25% heavier than in Aug. 1922. On the western roads, freight traffic was about 15% heavier than in Aug. 1922. Car loadings on all lines continue to run at a large figure, and good earnings throughout the autumn and winter are anticipated.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

34,147. Sept. 6.—Approving plan showing specifications of work to be done on drain no. 1, under C.P.R. in Lot 35, Con. 8, and under Canadian National Rys. in Lot 68, Con. D, and Lot 24, Con. 12, Minto Tp., Ont.

34,148. Sept. 7.—Authorizing C.P.R. to build its Leader Southeasterly Branch across certain highways between mile 44.65 and 49.23, Sask.

34,149. Sept. 7.—Approving Canadian National Rys. right of way and station grounds at Roe, Sask.

34,150. Sept. 8.—Declaring that for the present Canadian National Rys. crossing south of Bradford, Ont., is protected to Board's satisfaction.

34,151. Sept. 7.—Authorizing Niagara, St. Catharines & Toronto Ry. to build spur for Davis Lumber Co., St. Catharines, Ont.

34,152. Sept. 8.—Authorizing Canadian National Rys. to take, without consent of owners, certain land for a yard in Lots 36, 35 and 37, east of Niagara St., St. Catharines, Ont.

34,153. Sept. 8.—Authorizing Oshawa Ry. to build spur to Lakeview Park, across Nonquon Road, Oshawa, Ont.

34,154. Sept. 7.—Approving agreement, Aug. 17, between Bell Telephone Co. and South Bruce Rural Telephone Co.

34,155. Sept. 8.—Authorizing Nipissing Central Ry. to build across highway at station 351—20, in Label Tp., Ont.

34,156. Sept. 7.—Approving agreement, Aug. 1, between Bell Telephone Co. and Lake of Bays & Haliburton Telephone Co.

34,157. Sept. 10.—Approving location of Canadian National Rys. standard freight and passenger shelter at Pattee, Sask.

34,158. Sept. 10.—Authorizing Canadian National Rys. to build extension of passing track east of Keene station, Ont., on and across public road allowance between Cons. 5 and 6, Otonabee Tp.

34,159. Sept. 10.—Rescinding order 14,996, Sept. 15, 1911, authorizing Midland Ry. of Manitoba (G.N.R.) to connect with Canadian National Rys. in lot 55, St. Boniface Parish, Winnipeg.

34,160. Sept. 10.—Authorizing Canadian National Rys. to build sidings to serve its Express Department's temporary shed on St. James St., Montreal, across Richmond St.

34,161. Sept. 8.—Authorizing Nipissing Central Ry. to build across Argonaut Road, at station 879—29.8, Gauthier Tp., Ont.

34,162. Sept. 11.—Authorizing C.P.R. to build highway crossing on road running north and south between Secs. 1 and 2, Thessalon Tp., Ont.

34,163. Sept. 11.—Approving installation of a Bryant autoflag or wigwag signal at crossing of Victoria Ave., Hamilton, Ont., by Toronto, Hamilton & Buffalo Ry.

34,164. Sept. 12.—Approving location of Canadian National Rys. 4th class station building at Browning, Sask.

34,165, 34,166. Sept. 12.—Declaring that for the present, C.P.R. crossings at mile 21.9, St. Guillaume Subdivision, near St. Hyacinthe station, Que., and at Eglinton Ave., near Tremont, Ont., are protected to Board's satisfaction.

34,167, 34,168. Sept. 12.—Authorizing C.P.R. to build spurs for Brayden & Johnston, Salmon Arm, B.C., and Quaker Oats Co., Saskatoon, Sask.

34,169. Sept. 14.—Authorizing C.P.R. to build extension to spurs for Canadian Insulation Co., Selkirk, Man.

34,170. Sept. 12.—Declaring that for the present, C.P.R. crossing of Main St., Almonte, Ont., is protected to Board's satisfaction.

34,171. Sept. 14.—Authorizing C.P.R. to remove stop boards at Tichborne, Ont., trains to be governed by automatic signals.

34,172. Sept. 14.—Authorizing Canadian National Rys. to remove station agent at Warden, Alta.

34,173. Sept. 14.—Approving the revised location of portion of C.P.R. Archive to Wymark Branch from mile 71.71 in Sec. 36, to mile 77.36, in Sec. 31, Tp. 13, Range 9, West 3rd Meridian.

34,174. Sept. 14.—Ordering C.P.R. to rebuild bridge across Belvidere St., Sherbrooke, Que.

34,175. Sept. 14.—Authorizing the British Columbia Public Works Department to build highway crossing over Canadian National Rys., at McBride.

34,176. Sept. 15.—Recommending to Governor in council for approval, agreement of June 1, between Pere Marquette Ry. and Lake Erie & Detroit River Ry.

34,177. Sept. 14.—Ordering Canadian National Rys. to install improved type of automatic bell and wigwag signal at crossing immediately west of Mille Roches, Ont., and that grade of south approach to crossing be improved to 7% and trees be removed to improve view.

34,178. Sept. 15.—Approving Canadian National Rys. bylaw authorizing General Manager and Assistant General Manager, Express Department, to prepare and issue tariffs of every descrip-

tion of express tolls.

34,179. Sept. 17.—Authorizing Canadian National Rys. to build across highway between Sec. 13, Tp. 36, Range 24, and Sec. 18, Tp. 36, Range 23, West 1st Meridian, Man.

34,180. Sept. 15.—Authorizing Canadian National Rys. to build across public road at Girard, Que.

34,181. Sept. 15.—Permitting free transportation to Lady Fuller, her son, and daughter, wife and children of the Prime Minister of New South Wales, Australia, over Canadian National Rys., from Ottawa to Vancouver.

34,182. Sept. 17.—Ordering Canadian National Rys. to install wigwag signal in addition to bell at crossing of Cannifton Road, Belleville, Ont.

34,183. Sept. 17.—Authorizing London & Port Stanley Ry. to build spur for A. J. McInnis Coal Co., London, Ont.

34,184. Sept. 17.—Approving revised location of C.P.R. Archive-Wymark Branch from mile 52.62 to 54.24, and authorizing crossing of a number of highways.

34,185. Sept. 18.—Approving Canadian National Rys. plan R.I.U.-1-1 Standard Clearance Diagram, showing clearances of certain existing and future structures.

34,186. Sept. 17.—Approving revised location of portion of C.P.R. Lanigan Northeasterly Branch (Naicam to Melfort), mile 67.14 to 81.48, and authorizing crossing of a certain number of highways.

34,187. Sept. 18.—Declaring that for the present, C.P.R. crossing at Brock Road, Puslinch, is protected to Board's satisfaction.

34,188. Sept. 18.—Extending to Aug. 31, 1924, time within which Canadian National Rys. shall commence widening cut at crossing east of Rivers, Man.

34,189. Sept. 17.—Approving C.P.R. plan showing diversion of highway at mile 83.4, Winchester Subdivision, Ont.

34,190. Sept. 18.—Authorizing C.P.R. to cross highway at mile 67.25 and 68.26, Archive-Wymark Branch, Sask.

34,191. Sept. 18.—Dismissing application of Village of Innisfree, Alta., for order rescinding order 33,058, authorizing building of 2 crossings over Canadian National Rys. east and west of existing crossing.

34,192. Sept. 18.—Authorizing Canadian National Rys. to open for traffic, connection with Canadian Northern Alberta Ry. from Lac Ste. Anne, mile 62.87 to Grand Trunk Pacific Wabamun Subdivision, mile 63.62, a distance of 0.82 mile.

34,193. Sept. 12.—Authorizing C.P.R. to divert highway in n.e. ¼ Sec. 8, Tp. 17, Range 9, West 3rd Meridian, Sask.

34,194. Sept. 18.—Ordering New York Central Rd. to provide improved train service on its Adirondack Subdivision between Montreal and Valleyfield, Que.

34,195. Sept. 18.—Authorizing Hamilton Radial Electric Ry. to build spur for Hydro Electric Power Commission of Ontario, crossing Beach Road, Saltfleet Tp., Ont.

34,196. Sept. 17.—Approving supplements to connecting agreement between Bell Telephone Co. and Wallacetown & Lake Shore Telephone Association.

34,197. Sept. 20.—Declaring that for the present, London & Port Stanley Ry. crossing at stop 22, near Port Stanley, Ont., is protected to Board's satisfaction.

34,198. Sept. 17.—Approving supplements to connecting agreement between Bell Telephone Co. and Campbell's Bay Rural Telephone Co.

34,199. Sept. 20.—Approving revised location of portion of C.P.R. Lanigan Northeasterly Branch (Naicam to Melfort), mile 49.55 to 55.63, and authorizing crossing of a number of highways.

34,200. Sept. 20.—Approving change in location of Chatham, Wallaceburg & Lake Erie Ry. between Park Ave. and Mercer St., Chatham, Ont.

34,201. Sept. 20.—Authorizing Belgian Industrial Co. and Canadian National Rys. to operate over crossing near Van Brussels, Que., without first stopping.

34,202. Sept. 20.—Dismissing application of McArthur Engineering & Construction Co. for order for farm crossing near junction of Inkerman St. and Beechwood Ave., Guelph, Ont.

34,203. Sept. 20.—Authorizing C.P.R. to divert highway in Secs. 22 and 26, Tp. 12, Range 12, West 1st Meridian, Man.

34,204. Sept. 20.—Authorizing Canadian National Rys. to divert Monocree Road, Long Lake Indian Reserve no. 5, Yale Dist., B.C.

34,205. Sept. 20.—Recommending to Governor in council for sanction, Lake Erie & Northern and Grand River Rys. general train and interlocking rules.

34,206. Sept. 20.—Approving supplement to connecting agreement between Bell Telephone Co. and James McLaren Co.

34,207. Sept. 20.—Approving service station agreement between Bell Telephone Co. and Petawawa Rural Telephone Co.

34,208. Sept. 22.—Approving location of Canadian National Rys. third class station at Mecheche, Alta.

34,209. Sept. 22.—Authorizing C.P.R. to build passing track (third track) across road allowance

at Burnside, Man.

34,210. Sept. 22.—Dismissing application of residents of Sclanders, Sask., and vicinity, for an elevator siding on the C.P.R.

34,211. Sept. 22.—Amending order 34,174, re C.P.R. crossing of Belvidere St., Sherbrooke, Que., by inserting in recital, Aug. 13, 1923, as date of city's resolution.

34,212. Sept. 21.—Ordering Toronto, Hamilton & Buffalo Ry. to install improved automatic bell with wigwag signal at crossing of West Governor's Road, Lots 33 and 34, Con. 1, Ancaster Tp., Ont.

34,213. Sept. 21.—Dismissing Broadview Ratepayers Association's application for order reducing fares on British Columbia Electric Ry. Burnaby Lake line.

34,214. Sept. 22.—Approving supplement to connecting agreement between Bell Telephone Co. and West Garafaxa Telephone Co-operative Association.

34,215. Sept. 22.—Dismissing application of Willow Creek rural municipality, no. 458, Sask., for order directing Canadian National Rys. to build siding about half way between Whittome and Brooksby sidings.

34,216. Sept. 24.—Rescinding order 22,963, Dec. 4, 1914, respecting certain minimum carload provisions applicable to the carriage of brick, crushed stone, and other construction materials.

34,217. Sept. 24.—Authorizing C.P.R. to divert highway on east and north boundaries of n.e. ¼ Sec. 36, Tp. 31, Range 11, West 2nd Meridian, Sask.

34,218. Sept. 24.—Declaring that for the present, Canadian National Rys. crossing of Sixth Ave., Pointe aux Trembles, Que., is protected to Board's satisfaction.

34,219. Sept. 25.—Approving changes and alterations in Canadian National Rys. located line n. ½ Sec. 27, n.e. ½ Sec. 28 and s. ½ Sec. 33, Tp. 11, Range 28, West 2nd Meridian, Sask.

34,220. Sept. 25.—Approving location of Interprovincial & James Bay Ry. station at Angliers, mile 69.05.

34,221. Sept. 25.—Authorizing Essary Timber Co. to build logging railway under Esquimalt & Nanaimo Ry. on Lot 36, Newcastle District, Vancouver Island, B.C.

34,222. Sept. 25.—Authorizing Etobicoke Tp., Ont., to build three highway crossings over Toronto Suburban Ry. at Joppling, Johnston and Greenwood Aves.

34,223. Sept. 25.—Approving C.P.R. plan of proposed standard tunnel linings.

34,224. Sept. 24.—Authorizing C.P.R. to build temporary highway crossing over its station grounds at Naicam, Sask.

34,225. Sept. 24.—Authorizing Canadian National Rys. to open for traffic, portion of its revised eastbound main line, mile 35.35 to 26.56, Kashabowie Subdivision, also the connection between revised line at mile 36.56, Kashabowie Subdivision, and mile 30.52, Graham Subdivision, 0.66 mile.

34,226, 34,227. Sept. 25.—Authorizing Winnipeg Electric Ry. to cross C.P.R. and Midland Ry. of Manitoba, on Academy Road, Winnipeg.

34,228. Sept. 20.—Authorizing Canadian National Rys. to build two additional passing tracks across Verulam Road, Lindsay, Ont.

34,229. Sept. 25.—Authorizing Winnipeg Electric Ry. to cross Canadian National Rys. on Academy Road, Winnipeg.

34,230. Sept. 25.—Approving agreement between Bell Telephone Co. and J. and L. Davis (Rankin Telephone Co.).

34,231. Sept. 24.—Authorizing C.P.R. to build extension to spur for Bishop Lumber Co., at mile 86.8, Thessalon Subdivision, Lefroy Tp., Algoma District, Ont.

34,232. Sept. 25.—Ordering Canadian National Rys. to pay \$125 to A. E. Hancock, \$125 to Mrs. Burns, and \$100 to F. E. Walker, as compensation for damages for encroachment of easements for sight lines at crossing of Ingersoll Road, Woodstock, Ont.

34,233. Sept. 26.—Approving location of Interprovincial & James Bay Ry. station at Laniel, Que.

34,234. Sept. 26.—Authorizing C.P.R. and Canadian National Rys. to operate over crossing of C.P.R. Sussex St. Branch, and two tracks of C.N.R. at Hurdman, Ont., without first stopping.

34,235. Sept. 24.—Amending order 34,119, authorizing Hydro-Electric Power Commission of Ontario to build permanent power development canal and construction railway under Canadian National Rys. in Lots 57, 59 and 60, Stamford Tp., Ont.

34,236. Sept. 27.—Dismissing complaint of L. Perrin & Co., Vancouver, B.C., against express rates on crabs in ice, from Vancouver, B.C., to Toronto, Hamilton and Fort William, Ont.

34,237. Oct. 1.—Authorizing Canadian National Rys. to make highway crossing at Biggar, Sask.

34,238. Sept. 29.—Authorizing Canadian National Rys. to close station at Blair, Ont.

34,239. Oct. 1.—Dismissing application of Town of Estevan, Sask., for reapportionment of rental costs of C.P.R. spur.

34,240. Sept. 29.—Approving Algoma Central & Hudson Bay Ry. deviation as built between mile 103.80 and 104.79, Algoma District, Ont.

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TORONTO, CANADA, NOVEMBER, 1923.

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The Inland Water Freight Rates Act, 1923, Should be Repealed.

This is the third issue of Canadian Railway and Marine World in which the Inland Water Freight Rates Act, 1923, has been discussed editorially, and as our comments have been in critical vein, we preface further discussion by stating that our criticisms are not designed to be destructive, but are, on the contrary, decidedly constructive. Among the functions of a technical newspaper identified with and serving any industry or group of industries, as Canadian Railway and Marine World is identified with, and serves, Canadian land and water transportation industries, is that of freely offering opinions having for their object the improving of conditions under which those industries render their service to the public, and, in addition, of preventing undesirable conditions from prevailing. Our criticism of the act is based on the fact that we are strongly of the opinion that it has introduced a most undesirable condition, as concerns both the industry and the public, in the Great Lakes transportation industry.

If anything were needed, in addition to the proof afforded by the developments as recorded in our October issue, to demonstrate the undesirability and unworkability of the act, it is furnished by the development of Oct. 19 recorded in the Marine Department of this issue, wherein the Board of Grain Commissioners gave notice that the requirements of clause 3 of the act could be met through the shipper, instead of the ship owner, filing a statement of the rate agreed upon, and if actual proof were needed that the act is harmful in an economic sense to prairie farmers and the grain trade, it is furnished by a mere comparison of the level to which shippers have bid rates for lake carriage this year, as compared with preceding years.

That the act is unworkable and impracticable, as we have contended from the first, is practically admitted by the Government through its action in sanctioning the evasion of its most important requirement. Permission to ship owners to evade the act by filing statements of charter agreements already entered into, instead of filing tariffs in advance of the making of contracts, as the act requires, constituted the first admission of the act's impracticability, and permission to ship owners to evade the act by not being required to file either tariffs, or statements of carriage contracts made, confirmed that admission. The Government's action in sanctioning, or more likely originating, the evasion procedure, is, in a measure, in line with the recommendations made in our last editorial discussion of the matter, but we are of opinion that the Government would have done better by frankly stating that it had concluded that the act is impracticable, unworkable and undesirable, and that violations of its terms would be winked at, rather than by adopting the course of allowing the law to be evaded by the provision of "generous and liberal interpretations."

As pointed out in the Marine Department of this issue, the act has not been able, by reason of the crop's lateness, the grain's dirty condition, the lightness of export demand, and a certain tendency to hold grain for better prices, to create the mischief it otherwise would have done. It is probable that more or less continuance of the effects of these conditions will, in combination with the supply of a more adequate number of ships than would have been forthcoming if the act's evasion had not been sanctioned,

restrain the sky-high bidding for cargo space which the act was beginning to bring about, and thus prevent this ill advised legislation from exacting a heavy toll from the prairie farmers. But surely the experiences of the last two months should have convinced the Government that free and open competition is a better regulator of rates charged the public by a purely competitive industry than all the interfering legislation which could be crammed into a law library. And surely the Government, in recognition of this fact, will make no delay at the next parliamentary session in undoing its folly by repealing the act.

As before stated, we are of opinion that the business of Great Lakes transportation should have as its basis, as it had for a century or so prior to the Inland Water Freight Rates Act's passage, free and open competition, the unrestricted action of the law of supply and demand, and full opportunity for individual ambition, initiative and industry to reap its just reward. We support government regulation of railways, and realize that it is necessary and desirable, because a railway is often a complete monopoly, and naturally a quasi-monopolistic institution, but we condemn government regulation applied to Great Lakes transportation, for the reason that a ship owning business is not a monopolistic institution, and is about as far from being such as can be imagined. A Great Lakes ship owning business is no more a monopoly than a grocery store, or a business deriving its income from the operation of drays and trucks in a large city, and the Government might as reasonably undertake to regulate the grocery store industry, or the cartage industry, as the Great Lakes transportation industry. The ship owners' action in getting together last year to discuss their problems, their best means of serving the public, and the reasonableness of charges for their services, was no more an offense against the public welfare than are the periodical meetings of manufacturers', wholesalers' and retailers' associations throughout the country. We believe that the best regulator in any industry, in which many people compete on an even basis, is competition in service, wherein the individual who puts forth the best and most sincere effort, and furnishes the best service, gets the best reward. We believe, further, that the whole industrial and commercial structure of this country is based on competition in service, and that the character of the people has been formed largely by that competition, through the absence of undue governmental paternalism, and through people being taught to think for themselves, instead of looking to a government to do their thinking for them. The Government's attempt to interfere in the Great Lakes transportation industry by the passage of the Inland Water Freight Rates Act, was certainly a long step in the wrong direction economically, and just as certainly it was not a step in the right direction socially.

Southern New England Ry.

The Toronto Globe says that "the Boston Transcript gives details of the construction of 85 miles of new railway by the Canadian National Rys., to secure entrance to the port of Providence, R.I.," to which the Globe adds: "This is not a branch line banned by the Senate." It might interest the Globe to know that

Canadian Railway and Marine World is officially advised that no such construction is going on, and we do not see how it could without an appropriation being voted by the House of Commons, which would, of course, require the Senate's assent.

Figures Respecting Express Companies' Earnings.

Figures issued by the Dominion Bureau of Statistics, Transportation Branch, respecting the express business in Canada in 1922, show that the Canadian National Express Co., now the Canadian National Rys.' Express Department, gross receipts from operations were \$12,618,670.65; that it paid \$5,974,981.64 for express privileges, leaving operating revenues of \$6,643,689, and that operating expenses were \$6,173,148, leaving net operating revenue of \$470,540.04. The same report shows that the Dominion Express Co.'s gross receipts in 1922 from operations were \$13,575,532.63; that it paid \$6,855,532 for express privileges, leaving operating revenues of \$6,719,999.68; that operating expenses were \$6,758,189.68, leaving a deficit of \$38,190, and that revenue from outside operations, \$36,156.11, reduced this to a net operating deficit of \$2,033.89.

But, according to the statement presented to the Board of Railway Commissioners at the recent hearing on the express rate increase application, it appears that the Canadian National Express Co.'s gross receipts from operations in 1922 were \$13,085,941; that its expenses outside of express privileges, or payments to the railway, were \$6,513,655, and that if the railway had been paid for furnishing express service at cost, 43.93c a car mile, the cost of express privileges would have been \$10,022,995, which would have made the total cost of furnishing the service \$16,536,650, which, in turn, would have left a deficit on the year's operations of \$3,450,709.

At the time the Bureau of Statistics issued the figures referred to, many newspapers commented on them, pointing out that the Canadian National Express Co. was making good net earnings, while the Dominion Express Co. was incurring deficits. The statements furnished the Board of Railway Commissioners show that both companies have been incurring deficits. It would seem that the figures submitted to the Bureau covering the Canadian National Express Co. earnings were based on an insufficient payment to the railways for the service afforded the express company, or as it now is, department. It is regrettable that the figures published should have represented one company as doing so much better than the other, when such was not the case, and it hardly seems necessary to state that figures should not be made public unless they are compiled on an accurate basis and really do portray the situation, because if they are based merely on some feature of an organization's internal accounting, they are certainly very misleading.

Halifax Grain Elevator.—The Trade and Commerce Department will receive tenders to Nov. 7 for building a grain elevator and conveyor galleries at Halifax, N.S., for the Railways and Canals Department. It is stated that the elevator, which will have a capacity of 1,000,000 bush., will be located on the Dartmouth pier, and that the conveyor system will be located so as to serve the adjacent piers.

Transportations Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Board of Railway Commissioners.—The appointment of Hon. FRANK OLIVER, of Edmonton, Alta., as a member of the Board, which was foreshadowed in previous issues of Canadian Railway and Marine World, was officially announced in the Canada Gazette of Oct. 6, the appointment being dated Sept. 21.

Canadian National Rys.—W. J. BLACK, formerly Deputy Minister, Dominion Colonization and Immigration Department, Ottawa, has been appointed Manager, Colonization and Development Department, C.N.R. Office, 17 Cockspur St., London, Eng.

J. O. CAMERON, heretofore Yardmaster (night), has been appointed Yardmaster, Danforth, Toronto, vice J. Cloughesy, whose appointment as Assistant Superintendent of Terminals, Montreal District, Central Region, Montreal, was announced in our last issue.

S. J. FAUGHT, heretofore Coal Supervisor, Key Harbor, Ont., has been appointed Assistant Superintendent, Nipigon Division, Northern Ontario District, Central Region, succeeding J. W. Nicholson, deceased. Office, Hornepayne, Ont.

C. D. GLASS, heretofore Assistant Superintendent, Port Arthur Division (portion of), Manitoba District, Western Region, at Rainy River, has been appointed Assistant Superintendent, Minaki and Quibell Subdivisions, Port Arthur Division, vice S. McElroy, transferred to Port Arthur, Ont. Office, Sioux Lookout, Ont.

R. P. GOUGH, Toronto, who is Vice President of the Home Bank of Canada, which suspended payment recently, has resigned from the C.N.R. directorate. The following official statement was issued in Ottawa, Oct. 13, by the acting Prime Minister, Mr. Fielding:—"Richard P. Gough, who is one of the directors of the Home Bank, has resigned his position as member of the board of directors of the Canadian National Rys. Mr. Gough, in communicating with the acting Prime Minister, said that he had consulted professional advice and that he was afraid that perhaps a resignation might imply an acknowledgment of wrongdoing, which he did not wish to make, and for that reason he had hesitated in sending in his resignation. He was quite satisfied that investigation of the affairs of the bank would vindicate him. Nevertheless he had concluded that rather than allow any embarrassment to the Government or the Canadian National Rys. board, he should send in his resignation, and he has done so. The resignation has been accepted."

An Ottawa press dispatch of Oct. 18 said that a successor to Mr. Gough will probably not be appointed until the Prime Minister and the Minister of Railways return from England, the position being looked on as an Ontario one.

J. M. GRIEVE, formerly General Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, who has been granted three months sick leave, in August, has been appointed Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, Central Region. Office, Toronto.

W. LUCAS has been appointed acting Roadmaster, Brule Subdivision, Edson Division, Alberta District, Western Region, vice W. H. Fleming. Office, Edson, Alta.

C. H. LUNDGREN was mentioned in

Canadian Railway and Marine World for October as having been appointed Night General Yardmaster, Lakehead Division, Manitoba District, Western Region, with office at Fort William, Ont., but we have since been advised that his office is at Port Arthur.

J. H. McDIARMID, heretofore Yardmaster at Transcona, Man., has been appointed Assistant Superintendent, Fort Frances and Sprague Subdivisions, Port Arthur Division, Manitoba District, Western Region, vice C. D. Glass, transferred to Sioux Lookout.

S. McELROY, heretofore Assistant Superintendent, Port Arthur Division (portion of), Manitoba District, Western Region, at Sioux Lookout, Ont., has been appointed Assistant Superintendent, Graham, Kashabowie and North Lake Subdivisions, Port Arthur Division, vice C. D. Glass, transferred to Sioux Lookout. Office, Port Arthur, Ont.

D. A. McINNIS, heretofore Roadmaster, Wabamun Subdivision, Edson Division, Alberta District, Western Region, Edson, Alta., has been appointed Roadmaster, Lovett, Luscar and Mountain Park Subdivisions, Edson Division, Alberta District, Western Region, vice J. A. Leslie. Office, Coalspur, Alta.

W. J. McNABB was mentioned in Canadian Railway and Marine World for October, as having been appointed General Yardmaster, Lakehead Division, Manitoba District, Western Region, with office at Fort William, Ont. We have since been advised that his office is at Port Arthur.

YOILLAND MOODY, heretofore acting Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, Central Region, has been appointed Assistant Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, Central Region. Office, Toronto.

J. F. PENFOLD has been appointed Yardmaster at Transcona, Man., vice J. H. McDiarmid, appointed Assistant Superintendent at Rainy River, Ont.

R. C. RENNIE, who has been acting Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, Central Region, while Y. Moody has been acting Superintendent, has been re-appointed to his former position as Chief Clerk, Sleeping, Dining, Parlor Cars and Railway Restaurants, Central Region. Office, Toronto.

E. W. SMITH, heretofore acting General Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants, has been appointed General Superintendent, Sleeping, Dining, Parlor Cars and Railway Restaurants. Office, Montreal.

W. WALLACE, heretofore assistant night yardmaster, Mimico, Ont., has been appointed Yardmaster (night), Danforth, Toronto, vice J. O. Cameron, appointed Yardmaster there.

F. E. WHELPLEY, heretofore acting Treasurer, Atlantic Region, has been appointed Treasurer, Atlantic Region. Office, Moncton, N.B.

Canadian Pacific Ry.—J. D. CALLAHAN, heretofore Yardmaster (day) at Medicine Hat, Alta., has been given extended leave of absence on account of illness, and has been succeeded by P. N. Stewart, heretofore Yardmaster (night).

A. P. VILLAIN, City Ticket Agent, San Francisco, Cal., has resigned, and has been appointed District Passenger Agent there for United States Lines, Managing Operator for United States Shipping Board, his territory consisting of California and Nevada.

Self Propelled Cars on Steam Railways.

Canadian National Railways.—The accompanying illustration shows the storage battery car converted from a gas-electric car at the Niagara, St. Catharines & Toronto shops at St. Catharines, Ont., as described in Canadian Railway and Marine World for October. The car, as rebuilt, is 57½ ft. long and seats 96 passengers. It has a smoking compartment, but no lavatory. It is equipped

National Rys. management is considering the possibility of placing a storage battery car in service between Toronto union station and Weston, 8.41 miles northwest of Toronto, to operate on the original G.T.R. line from Weston to Parkdale and Toronto union station, making morning and evening trips.

The Peterborough, Ont., City Council asked Sir Henry Thornton, President,

have seating accommodation for 25, and also baggage and express space. It will be capable of hauling cars of freight, and will also be suitable for use in switching service. It is intended to run it during this winter between Williams Lake and Quesnel. Williams Lake is 277.8 miles from Squamish dock, and the distance from Williams Lake to Quesnel is 70.7 miles. We are advised that the car will be suitable for service on the North Shore Branch, should traffic conditions warrant it, and it is believed that this type of car will enable the railway to give a service where the traffic is light without subjecting the public to a reduced train service.

Foreign.—A remarkable increase has taken place lately in the use of Diesel-electric self-propelled cars in Sweden. Since 1913, several Swedish railways have been operating cars of this type, with engines rated at from 75 to 120 h.p., but several cars have been introduced recently which are equipped with engines of 160 and 250 h.p. Some of these high-powered cars are more in the nature of locomotives, being fitted with only a baggage space, the passengers being carried in trailers. The complete power installation for these cars, which have Diesel engines with electrical transmission to the driving wheels, is as follows, the apparatus being of similar nature for all sizes: one Diesel engine of the 4-stroke cycle type, with 6, 8 or 12 cylinders, according to capacity. The size of generators and other electrical equipment is also increased to accord with increased engine capacity. They have one direct-coupled direct-current generator of the 8-pole type, with commutating poles. The generator is shunt wound, but has a separate series winding, the latter being connected to the circuit only when the generator is driven from the storage battery in starting. The generator voltage



Storage Battery Car Frame, Canadian National Railways.

with 250 Edison A-12-H storage batteries, and 4 G.E. type G-261 ball bearing motors of 25 h.p. each. On completion of the conversion, the car was returned to Winnipeg in a freight train, with gears disconnected, and placed in service between Winnipeg and Transcona, where it was operated formerly as a gas-electric car.

As stated in our October issue, the Canadian National Rys. are having another battery car built at the N., St. C. & T. R. shops at St. Catharines. An illustration of its frame is given herewith. C.N.R. mechanical officials are developing plans for a standard frame for all future battery cars to be acquired, and it is expected that the frame to be adopted as standard will be somewhat similar to that shown herewith. It has side sills of 6 in. channels, center sills of 6 in. I-beams, platform sills of 5 in. I-beams, alternated with open truss supports as shown. The car for which this frame was built will be 58 ft. long and 9 ft. wide, and will be equipped with 260 A-12-H Edison batteries and 4 G.E. G-261 motors of 25 h.p. each. It will have a baggage compartment at the front, a smoking compartment to seat 20 passengers in the central portion, and a main compartment seating 40 passengers. Good progress is being made with construction.

In addition to the cars mentioned above, the Canadian National Rys. have invited tenders, in alternative form, for 6 more storage battery cars. In view of the success which the C.N.R. have had with storage battery cars during the two years they have been operated, which is emphasized by the management's intention to augment considerably the number now on the lines, it is evident that this type of car has definitely established a place for itself in self-propelled car service on steam railways. The absence of complicated mechanical features, making for minimum maintenance cost, is a most desirable feature, and in districts where electrical power is cheap, operating costs are low.

We are advised that the Canadian

C.N.R., recently, to put on gasoline or electric self-propelled cars in that district. He replied that they would not give better service than is being supplied by steam trains, and that their operation would not be economical, as it would be necessary to run steam trains to serve places in the territory not contemplated in the self-propelled cars' operation.

We are officially advised that the Canadian National Rys. management is considering placing an electrically operated self-propelled car in service between



Storage Battery Car, Canadian National Railways.

Quebec and Loretteville, Que., 8.6 miles, on the Batiscan Subdivision, Saguenay Division, Quebec District, Central Region.

The Pacific Great Eastern Ry. is adding a gasoline motor car to its rolling stock. The engine and trucks will be supplied by the Four-Wheel Drive Auto Co., Kitchener, Ont., and the body and furnishings will be made at Vancouver. The car will be equipped with standard railway appliances to comply with the British Columbia Railway Act. It will

can be varied, within wide limits, up to 550 volts. They have two electric motors of star series-wound railway type, with commutating poles. Power is transmitted to the axles by spur gearing. A storage battery of alkaline Jungner type, suspended beneath the car, furnishes current for starting, lighting and auxiliary apparatus. It is charged automatically while the car is in motion, and a special switch is provided for charging when the car is standing.

Canadian Railway and Marine World has expressed itself as hoping to see a Diesel-engined self-propelled car tried in Canada. The economy and efficiency of Diesel engines are well known, and a combination of Diesel engine and electrical transmission would appear to hold out prospect of great possibilities in self-propelled car service.

The Right Hon. Lloyd George on Canadian Railways.

The Canadian National and Canadian Pacific Railways managements, having been authorized by the Board of Railway Commissioners to issue free transportation to the Right Hon. David Lloyd George, M.P., members of his family, dependent members of his household, and members of his staff, between such places in Canada as were included in his itinerary, did everything possible to make his Canadian trip a pleasant one. The Canadian National had its business car Ottawa equipped with a radio receiving set, and sent it to New York. Mr. Lloyd George, his wife, daughter and party, together with a number of newspaper correspondents, etc., left New York on Oct. 6, by special train, consisting of business car Ottawa; President Sir Henry Thornton's business car; business car Canada; compartment observation, library, buffet and sleeping car Fort Ellice; standard sleeping car London; and a combination car for the crew. Sir Henry and Lady Thornton, J. E. Dalrymple, Vice President, Traffic Department, and G. T. Bell, Assistant to Vice President, Traffic Department, C.N.R., were also on the train, which, on its arrival in Montreal on Oct. 7, was met by a very large number of people, among whom Lord Shaughnessy and Senator L. C. Webster were prominent.

Shortly after noon, accompanied by his wife and daughter, Mr. Lloyd George visited the C.P.R. Angus shops, conducted by F. L. Wanklyn, General Executive Assistant, C.P.R., and accompanied by C. H. Temple, Chief of Motive Power and Rolling Stock, and J. Burns, Works Manager. Owing to the short time at his disposal, it was only possible to make an inspection of the locomotive erecting shop, where an exhibition of first aid work was also seen. The party then proceeded to the midway, where over half of the 8,400 shop employees had congregated, and gave the war premier a most enthusiastic reception, which he acknowledged in a brief speech, highly complimenting the efficiency of those who had demonstrated their skill at first aid work.

Ottawa, Toronto and Niagara Falls were visited subsequently, by Canadian National special train, and on returning to Toronto, late on Oct. 12, the car Ottawa was transferred to the Canadian Pacific, which attached it to a special train, which ran as the second section of train no. 3, leaving Toronto at 10.20 p.m. on the block of the first section. The rest of the consist of the train was compartment cars Glen Otter and Glen Sutton; standard sleeping car Newcastle; dining car Wardour; and a baggage car. J. J. Scully, General Manager, Eastern Lines, accompanied the train from Toronto to Fort William, D. C. Coleman, Vice President, Western Lines, meeting it there and going on it to Winnipeg. From Winnipeg, Mr. Lloyd George proceeded to Minneapolis, Minn., and other U.S. points.

Canadian Pacific Railway Constructions, Betterments, Etc.

Interprovincial & James Bay Ry.—The Board of Railway Commissioners has approved location plans for stations at Laniel and Agliers, Que., on the extension from near Kipawa, to the Quinze River, with branch to Ville Marie.

A recent Cobalt, Ont., press report stated that so important were the discoveries being made in the Rouyn gold-bearing area of Quebec, that the C.P.R. would lose no time in extending its Kipawa-Quinze River line to the district. The Quebec Minister of Colonization, Mines and Fisheries is reported to have given orders for the preparation of good winter roads into the area, and it is stated that legislation will be introduced at the Legislature's next session, to grant a subsidy to the C.P.R. to build an extension of about 36 miles from the Quinze River to the centre of the Rouyn area. (Sept., pg. 435.)

Tuffnell-Prince Albert Line.—A press report states that rapid progress is being made in grading on the line under construction from Tuffnell towards Prince Albert, Sask. A contract for grading 50 miles from Tuffnell was let in May to Grant Smith & Co. and McDonnell, Ltd., and a contract for an additional 45 miles was let to the same company in June, making 95 miles in all, which will carry the line to Tisdale, on the Canadian National Rys. line from Thunderhill Jet. to Prince Albert. Rails were reported to be in course of delivery on Sept. 25, and tracklaying was expected to have been started during October, in the expectation of getting a substantial mileage laid by the end of the year. The Board of Railway Commissioners has authorized the building of this line across the Canadian National Rys. Humboldt section in Sec. 21-34-13 west of 2nd Meridian, Sask.

Lanigan to Melfort.—A press report of Oct. 9 stated that track had been laid on the extension of the branch from Lanigan, which is in operation to Naicam, to Pleasantdale, 10 miles, and that work was being pushed in the hope of getting the additional 22 miles of track, which will carry the line to Melfort, Sask., laid by the end of the year. (Oct., pg. 482.)

Peace River Proposals.—In connection with the extensive investigations being made by C.P.R. engineers in the Peace River area, E. W. Beatty, K.C., President, referring to proposed construction of lines there, said at Winnipeg recently:—"It is a possibility, but I would not say an immediate possibility. Extensive surveys are under way with the building of this new road in view. It would be a very expensive proposal, but the future of the Peace River country may warrant it. That is the question that we are now seriously going into. The opening of this new road would indeed mean great development in the new northwest. It is not, however, yet a concrete proposition." (Oct., pg. 472.)

Vancouver B.-C. Pier Construction.—At a dinner given by the Vancouver Board of Trade to the visiting directors of the C.P.R. recently, E. W. Beatty, President, stated that work on the new B.-C. pier would be proceeded with immediately. This pier forms part of the waterfront development decided upon several years ago. The original plans provided for 4 piers, referred to respectively as A., B., C. and D., of which A. and D. have been built and used for some years past. The plans were reviewed in 1919-20, when it was decided to abandon the project to build the two piers, B. and

C., in the original project, and to consolidate them into one. A contract was let to the Pacific Dredging Co., for dredging and filling in the site, and this work was completed in 1921-22. Plans for the pier were prepared, and in Nov. 1912, a contract was let to the Sydney E. Jenkins Co., Ltd., Winnipeg and Vancouver, for its construction. Following the letting of the contract, some reconsideration was given to the plans, the material of which the pier was to be constructed, and methods of erection, etc., and in February we were officially advised that the pier would be about 850 ft. long, about 331 ft. wide, and would have erected on it 2 double-deck sheds, connected at their outer ends to form a U; that each shed would be about 750 ft. long, and 100 ft. wide, with 4 railway tracks between the two sheds and 2 tracks between each shed and the side of the pier. Canadian Railway and Marine World for May contained, on pg. 224, an illustration showing the three piers, A., B.-C. and D., as they will appear when the B.-C. one is completed. (Sept., pg. 435.)

Victoria Terminal Building.—We are officially advised that the terminal building to be erected at Victoria, B.C., will be at the corner of Belleville and Menzies streets. It will be 122 x 52 ft., and practically 4 stories high, and will provide office accommodation for the company's B.C. Coast Steamship Service officials, including Manager, Superintending Engineer, Purchasing Agent, Accountant, and the staff generally. The contract has been let to Luney Bros., Victoria. (Oct., pg. 482.)

Transportation Events of Twenty-five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for Nov. 1898:

J. M. Egan, at one time General Superintendent, C.P.R., Winnipeg, re-elected Vice President, Central Ry. of Georgia.

C.P.R. built combined station and hotel at Moose Jaw, Assa.

Revelstoke, B.C., made C.P.R. division point.

Track laying completed on C.P.R. extension from Stonewall, Man., to Foxton.

Plans for G.T.R. head office building in Montreal approved by city council.

Intercolonial Ry. gave contract to build 600 ft. pier at Halifax, N.S., to Rhodes, Curry & Co., Amherst, N.S.

Intercolonial Ry. appointments: J. E. Price, General Superintendent, Moncton, N.B.; G. M. Jarvis, Superintendent, Truro, N.S.

Hamilton Radial Electric Ry. gave contract for extension from Burlington to Port Nelson, Ont.

St. Thomas, Ont., St. Ry. converted from horse operation to electric.

Dominion Government gave Allan Steamship Line contract for winter mail service between St. John, N.B., and Liverpool, England.

C.P.R. steamboat Moyie launched at Nelson, B.C., to run on Kootenay Lake.

Dominion Government telegraph line from Quebec east, along the north shore, extended to Big Romain River, 656 miles below Murray Bay.

Grand Trunk Ry. appointments: H. E. Whittenberger, Trainmaster, London, Ont.; W. E. Costello, Trainmaster, Stratford, Ont.; C. S. Cunningham, Trainmaster, Island Pond, Vt.; J. McGrath, Master Mechanic, Stratford, Ont.

Mainly About Railway People Throughout Canada.

E. W. Beatty, K.C., President C.P.R., and Chairman, Financial Federation of Social Agencies, Montreal, was the principal speaker at the opening meeting of the 1923 campaign rally, Oct. 26.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, who is also one of the Canadian National Rys. directors, returned to Ottawa early in October, after accompanying the Minister to the League of Nations meeting at Geneva, and also to London, Eng. An Ottawa press dispatch of Oct. 16 said that after attending a C.N.R. directors' meeting in Montreal, he would return to England in connection with the G.T.R. and Grand Trunk Pacific Ry. shareholders' and debenture holders' claims. Another press report says that he may resign the Deputy Ministership and be again appointed Vice President of Finance, C.N.R., which position he held from Oct. 1922, until May 1923, as well as being Deputy Minister, and it is, of course, presumed that should he be re-appointed Vice President, he will resign the Deputy Ministership.

William John Black, who has been appointed Manager, Colonization and Development Department, Canadian National Rys., London, Eng., was born in Dufferin County, Ont., and educated at Collingwood Collegiate Institute, and Toronto University, graduating with the degree of B.S.A. in 1902. He was appointed Deputy Minister of Agriculture for Manitoba in Jan. 1905, and in April 1905 was appointed the first principal of Manitoba Agricultural College. He is a writer on agricultural subjects, and was, for some time, on the Manitoba and Northwest Farmers Advocate and Home Magazine's editorial staff, and was a commissioner on the Manitoba technical school system in 1910, and later was, until Oct. 10, Deputy Minister of Colonization and Immigration at Ottawa.

H. H. Brewer, Assistant General Manager, Western Region, lines east of Jasper, Alta., Canadian National Rys., Winnipeg, is on leave of absence, during which J. R. Cameron, Assistant General Manager, lines west of Jasper, has been transferred from Vancouver to Winnipeg, and is discharging his duties.

Sir George McLaren Brown, K.B.E., General European Manager, C.P.R., met the Canadian Prime Minister, Mr. King, on the latter's recent arrival by the C.P.R. s.s. Montcalm at Liverpool.

L. S. Brown, General Manager, Atlantic Region, Canadian National Rys., Moncton, N.B., has been elected President, I.R.C. Employees' Relief and Insurance Association, succeeding S. L. Shannon, formerly Comptroller and Treasurer, Canadian Government Rys., who was placed on the provident fund some time ago. **F. W. Robertson,** General Passenger Agent, Atlantic Region, was re-elected Vice President.

M. J. Butler, C.M.G., some time Deputy Minister of Railways and Canals at Ottawa, will address the Engineering Institute of Canada's Toronto branch, on Nov. 8, on "A Proper Freight Rate for Coal," in which he will attempt to show a method of calculating a fair rate for the transportation of coal in trainload lots from Alberta to Ontario, and make suggestions for equipment suitable to handle such traffic.

Kenneth M. Cameron, heretofore Assistant Chief Engineer, Public Works Department, Ottawa, and at one time

engaged in C.P.R. Engineering Department, Montreal, has been appointed Chief Engineer of the Department, succeeding the late A. St. Laurent.

S. B. Clement, Chief Engineer, Timiskaming & Northern Ontario Ry., will address the Engineering Institute of Canada's Toronto branch on Nov. 29, on "Recent Developments on the T. & N.O. R."

D. C. Coleman, Vice President, C.P.R. Western Lines, entertained the Earl of Birkenhead at a supper party at the Royal Alexandra Hotel, Winnipeg, Oct. 10, after his address in the Board of Trade auditorium.

George B. Corbett, of the C.P.R.'s audit office at Vancouver, B.C., formerly of Montreal, died suddenly recently while on a motorboat trip among the islands in the Gulf of Georgia and the Strait of Juan de Fuca.

Mrs. J. E. Dalrymple, wife of the Vice



H. J. Russell,
Who has been appointed General Manager,
Newfoundland Government Railway.

President, Traffic Department, Canadian National Rys., visited Pittsburg, Pa., during October as the guest of her son, E. R. Dalrymple.

R. Dudley, who died in Fernie, B.C., Sept. 25, aged 64, was formerly in the C.P.R. service. A press report states that he went west with D. C. Coleman, now Vice President, Western Lines, C.P.R., in 1898, being engaged on the C.P.R. at MacLeod, Alta. Our records show that Mr. Coleman entered C.P.R. service in Nov. 1899, as a stenographer in the division engineer's office at Fort William, Ont.

Mrs. A. E. Fish, mother of R. H. Fish, General Superintendent, Southwestern Ontario District, Central Region, Canadian National Rys., Toronto, who died Oct. 7, was buried at her birthplace, Postville, near Oakville, Ont., Oct. 8, the funeral being attended by a large number of C.N.R. officials from Toronto and other points on the district.

Hon. G. P. Graham, Minister of Railways and Canals, will, a London press dispatch says, sail from England on Nov. 9, by the s.s. Regina, for Canada.

George Ham, of the C.P.R. head office staff, Montreal, who is the only male honorary member of the Canadian Women's Press Club, was presented with a silver loving cup, at a Women's Press Club dinner, at Victoria, B.C., recently.

Mrs. Jos. J. Hebert, who died in Montreal recently, aged 87, was the mother of E. J. Hebert, First Assistant General Passenger Agent, C.P.R., there.

Fred Hill, agent, Canadian National Rys., Weston, Ont., who has retired on pension, entered G.T.R. service in 1872, when 20 years of age, being first employed at Carlton station, now in Toronto.

D. B. Hanna, ex-President, and A. J. Mitchell, ex-Vice President, Canadian National Rys., left Toronto, Oct. 17, for the Pacific coast, expecting to be away about three weeks.

E. E. Lloyd, Assistant Comptroller, C.P.R., with Mrs. and Miss Frances Lloyd, left Montreal, Oct. 7, for the Pacific coast, expecting to be back about the middle of November.

Wm. John McNabb, who has been appointed General Yardmaster, Lakehead Division, Manitoba District, Canadian National Rys., at Port Arthur, Ont., was born at Owen Sound, Ont., in March, 1876, and entered railway service Jan. 6, 1912, since when he has been, to Sept. 1912, switch foreman; Sept. 1912 to Oct. 10, 1913, Yardmaster (night); Oct. 10, 1913, to Sept. 16, 1923, General Yardmaster, all in C.N.R. service and at Port Arthur.

Sir Augustus Nanton, a director of the C.P.R., and President, Winnipeg Electric Ry., and Lady Nanton, entertained Lord Renfrew, Oct. 3, at dinner and a dance at Winnipeg while he was returning from his Alberta ranch en route to England. Lady Nanton gave a dinner at the Winnipeg Motor Country Club on Oct. 4 for the Ladies Elizabeth and Mary Byng.

Miss A. T. Pearce, second daughter of Wm. Pearce, Natural Resources Department, C.P.R., Calgary, Alta., was married there recently, to G. C. Tassie, D.L.S., British Columbia Public Works Department, Golden.

F. W. Peters, General Superintendent, British Columbia District, C.P.R., returned to Vancouver, Oct. 13, from an extended trip in northern British Columbia.

Mrs. F. W. Peters, wife of the General Superintendent, British Columbia District, C.P.R., gave a luncheon at Vancouver, Oct. 4, for Lady Foster, who, with her husband, Sir George Foster, have been on a trip to the Pacific coast.

R. D. Preston, who, a press report states, was for a number of years a travelling auditor for the C.P.R., died at his home at Winchester, Ont., Oct. 6.

Hayter Reed, formerly Manager in Chief of Hotels, C.P.R., and Mrs. Reed, returned to Montreal early in October, from their summer home at St. Andrews-by-the-Sea, N.B.

Grant Smith, of the railway contracting firm of Grant Smith & Co. and McDonnell, Ltd., which is building the 70-mile extension of the Timiskaming & Northern Ontario Ry. from Cochrane, Ont., and also has grading contracts for the C.P.R., died suddenly in St. Paul, Minn., Sept. 27, aged 55.

Sir Henry Babbington Smith, President of the Railway Amalgamation Tribunal in Great Britain, which has just completed its work in connection with the consolidation of the English and Scottish railways into four systems, died at Saffron Waldon, Essex, Sept. 29, aged 60. He was Chairman of the Pacific Cable Board for some years.

Jos. Henry Sorley, who died at Toronto Oct. 14, was born at Hamilton, Ont., May 17, 1859, and was for some time in G.T.R. service at Montreal. He entered C.P.R. service Oct. 1, 1882, as clerk in local freight office at Hochelaga, and remained in various capacities in the Freight Department at Montreal until Feb. 1, 1892, when he was appointed City Freight Agent at Ottawa, from which he retired on pension on Jan. 1, 1912, when he removed to Toronto.

John Spence, of the Passenger Department, C.P.R., Yokohama, Japan, who escaped from the earthquake disaster, as mentioned in Canadian Railway and Marine World for October, has written his mother in Toronto, giving particulars of some of his experiences during and following the earthquake. Stranded on the pier from which the s.s. Empress of Australia had just put off, he was compelled to swim ashore for his life. Making for the C.P.R. office, he saw that the Oriental Hotel and buildings adjacent were wrecked and being consumed in flames. When he reached the C.P.R. office it was on fire, and he found that one of the staff, John Reid, had been instantly killed. After a frantic, futile search for the safe in the intense heat, he raced outside, and no sooner had he done so than the building collapsed. Along the Bund, toward the bluff, huge fissures were opening up in the roads and devouring people by the hundreds. Later, he took refuge in the water, standing beside a man who was killed later by a hurtling log. Finally, after being picked up by a Japanese sampan and conveyed to a French mail boat, from which he swam to a U.S. freighter, he was placed aboard the Empress of Australia.

George Mitchell Thomas, who has been appointed Commercial Agent, Canadian National Rys., Hamilton, Ont., was born at Dundas, Ont., Apr. 21, 1876, and entered transportation service in Aug. 1898, since when he has been, to 1903, in office, chief clerk, on the road, and Soliciting Agent, for Beaver Line Steamships, afterwards owned by Elder, Dempster & Co., and in 1903, taken over by the C.P.R. as the nucleus of its Atlantic steamship service; Apr. 1903 to Feb. 1, 1919, travelling Freight Agent, Canadian Government Rys., all at Toronto; Feb. 1, 1919, to July 1920, District Freight Agent, Canadian National Rys., Hamilton, Ont.; July 1920 to Sept. 1923, General Agent, Canadian National Rys., Windsor, Ont.

Sir Henry Thornton, President, Canadian National Rys., has taken Capt. A. Joly de Lotbiniere's house, 591 Pine Ave. West, Montreal, for the winter.

Lady Van Horne and Miss Van Horne, were expected to return to Montreal, at the end of October, from their summer place, Covenhaven, St. Andrews-by-the-Sea, N.B. They recently contributed \$1,000 each to the Japanese relief fund.

R. C. Vaughan, Director of Purchases and Stores, Canadian National Rys., whose office was moved from Toronto to Montreal in March, has taken a house at 487 Mount Pleasant Ave., Westmount, Que., and removed his family there from Toronto. They spent most of the summer at his country place at Cedarhurst, Ont.

D. Wanklyn, son of F. L. Wanklyn, General Executive Assistant, C.P.R., and his wife returned to Montreal Oct. 11 from Europe, where they spent their honeymoon. They were among the guests at a dinner given by Mr. and Mrs. D. Forbes Angus, in honor of Lord Renfrew, Oct. 12.

S. R. Weston, formerly Assistant Chief Engineer, New Brunswick Electric Power Commission, who has been appointed Chief Engineer, vice C. O. Foss, resigned, graduated from New Brunswick University in 1914 after spending some summers surveying for the New Brunswick Ry. Co. After graduation he did general survey work until 1916, when he was appointed transitman on the St. John & Quebec Ry. location survey from Gagetown to Westfield, N.B., and in Sept. 1916 he was appointed engineer in charge of construction of that line from Evansdale to Browns Flats. In April 1918 he was appointed Chief Engineer, Midland Coal Co., Salmon Arm, B.C. In April 1920 he was appointed Assistant Chief Engineer, New Brunswick Electric Power Commission, in charge of hydraulic work, Musquash development and general field construction.

Frederick Ernest Whelpley, who has been appointed Treasurer, Atlantic Region, Canadian National Rys., Moncton, N.B., was born at St. John, N.B., Aug. 20, 1861, and entered transportation service May 1, 1893, since when he has been, to Dec. 1, 1893, clerk, Hamburg-American Steamship Co., Montreal; Dec. 1, 1893, to May 1, 1903, outward freight clerk, Dock Department, same company, Hoboken, N.J.; May 1, 1903, to June 1, 1915, cashier, Canadian Government Railways, Moncton, N.B.; June 1, 1915, to Feb. 19, 1923, Assistant Treasurer, Canadian Government Rys., Moncton, N.B.; Feb. 15, 1923, to Oct. 1923, acting Treasurer, Canadian National Rys., Moncton.

John Wishart, who died in Montreal recently, aged 69, was for 39 years in C.P.R. service, latterly as locomotive inspector at Angus shops. He was buried at Kingston, Ont., where he was born, and where he served his apprenticeship at the locomotive works.

Extensive Damage by Hurricane on Land and Sea.

One of the most severe hurricanes that has visited the North Atlantic coast, swept over portions of Nova Scotia, New Brunswick, Quebec and Newfoundland, Oct. 1, which, with following high winds and rain, resulted in considerable damage to shipping around the coasts, and interruption of railway traffic in some sections. Cape Breton Island and Newfoundland suffered the worst, so far as interruption of railway traffic was concerned. This was due, not so much to washouts, but to telegraph wires being blown down across the lines, and damage to railway buildings. The Ocean Limited, leaving Halifax, N.S., Oct. 1, was delayed for some hours, owing to a landslide about a mile and a half from Wentworth, N.S.; the railway bridge across the James River in Antigonish county was washed out; two extensive washouts were reported on the line between Canso and Sydney, and all traffic was suspended from Oct. 1. General traffic east of New Glasgow was resumed Oct. 4, but traffic on the Sydney-Halifax route did not become normal for some days afterwards. In Newfoundland, railway traffic was badly interrupted for some days.

Traffic on the Inverness Ry. & Coal Co.'s line on Cape Breton had to be suspended Oct. 1. It is reported that there was a bad washout on the Prince Edward Island Ry., near Midfill and St. Peter's Bay.

The fury of the storm was most severely felt at sea, and, at the time of writing (Oct. 19), reports continued to come in of damage to, and loss of, ships, with loss of life. The most serious loss was that of the 4-masted schooner Governor Parr, of Bridgewater, N.S., with the drowning of the captain and one of the crew, off New York; and the loss of the French s.s. Yport on Scatari Island, the crew landing safely. Among the reported damaged ships are:—Schooner E. C. Adams, Lunenburg, ashore in Northumberland Strait; schooner Chataqua, arrived in Port Hawkesbury, N.S., leaking badly and with loss of sails; tern schooner Cape Blomidon, ashore at Port Hawkesbury, apparently little damaged; Vera B., ashore at North Sydney, feared total loss; Alameda, loss of sails; E. C. Adams, ashore at River John, Pictou county; Chautauqua, from Gaspé, Que., for New York, put into Port Hawkesbury, N.S., leaking, with loss of sails and deck load. In addition, many other ships suffered more or less damage without being driven ashore.

The Newfoundland schooner Allan F. Rose broke from her moorings at St. Pierre, south of Newfoundland, and was reported, Oct. 2, to have been driven on the rocks and become a total loss, but a couple of days later she put in to Harbor Breton, Nfld., badly battered. The British s.s. Troutpool, owned by Pool Shipping Co., which ran ashore at St. Pierre recently, was broken in two and her stern carried some 300 ft. away, during the heavy storm and hurricane Oct. 2. The s.s. Auroch was reported ashore, but cleared herself and got into shelter at St. Pierre, being towed subsequently to Sydney, N.S., for repairs.

From Newfoundland it is reported that the following schooners had been caught in the storm and received damage:—Norman Sharp, total wreck at St. Lawrence; Alice Roberts and Jack Frost, ashore near Port au Bras, feared total loss; Domering, ashore near Beaverton, feared total loss; Ruby and Dorothy, ashore White Bay, leaking and has lost rudder; Electric Flash, ashore near Revenos, towed off Oct. 10, leaking badly; Jas. U. Thomas, ashore at Lamaline, and is expected to be refloated. Among the ships from which news was being awaited are the following:—Cavalla and Lucy Dibdin.

The Canadian National Rys. Coal Pile at Bridgeburg, Ont., containing approximately 150,000 tons, was reported to be on fire, Oct. 19. It was stated that the fire was in the heart of the pile, that it was estimated that about 11,000 tons had been destroyed, and that as much as possible was being hauled away by the trainload to another site.

U.S. Railway Consolidation Hearings.—The U.S. Interstate Commerce Commission issued a statement on Oct. 11, saying that hearings upon the subject of consolidation of U.S. railways, as provided for in the Transportation Act, will be closed upon the completion of a final hearing to begin on Nov. 16.

A record of safety in railway travelling in Great Britain was established last year, when only five passengers were killed in accidents, out of a total of 1,186,479,000 carried by the railways, or one in 200,000,000.

Traffic Orders by Board of Railway Commissioners.

Grain Rates from Prairie Provinces to British Columbia Coast Points for Export.

General order 384, Oct. 10.—Re rates on grain from points in Alberta, Saskatchewan and Manitoba to Vancouver and other British Columbia coast points, for export: Whereas, by order in council 2007, dated Oct. 2, 1923, the Governor in council referred the subject of the said export grain rates from points in the said provinces to Vancouver and other British Columbia coast points, to the Board for immediate determination and such effective action as the Board may deem necessary. After fully considering the matter, and applying the principles set forth in the Board's judgment, dated Oct. 10, 1923, and for the reasons therein contained, the Board orders that the current rates on grain and grain products to Pacific coast ports for export be reduced uniformly 10%; and that all the railway companies subject to the Board's jurisdiction file tariffs, effective not later than Oct. 22, showing such reduction; also that all milling, malting, storage, cleaning, or bagging in transit privileges on grain now contained in the tariffs be unaffected by this order. In applying the said rates, fractions shall be disposed of as provided for in order in council 1863, dated July 27, 1918.

The judgment on which the foregoing order was based is given fully on another page of this issue.

British Columbia Electric Railway Fares.

34,213, Sept. 24.—Re application of Broadview Ratepayers' Association for an order reducing the fares on the British Columbia Electric Ry.'s Burnaby Lake line: Upon hearing the application at Vancouver, June 29, 1923, the applicant and the railway company being represented, and what was alleged, the Board orders that the application be refused.

Minimum Carloads of Brick, Crushed Stone, etc.

34,216, Sept. 24.—Re Canadian Freight Association's application for a rehearing of the Milton Pressed Brick Co.'s complaint against certain minimum carload provisions contained in special tariffs of the railway companies, applicable to carriage of brick, crushed stone, and other construction materials: Upon hearing the matter at Ottawa, Sept. 18, the Canadian Freight Association, and the Milton Pressed Brick Co. being represented, and what was alleged, the said Milton Pressed Brick Co. consenting, the Board orders that order 22,963, Dec. 4, 1914, made herein, be rescinded.

Express Rates on Crabs from Vancouver to Ontario.

34,236, Sept. 27.—Re complaint of L. Perrin & Co., Vancouver, B.C., against the express rates on crabs, in ice, from Vancouver to Toronto, Hamilton and Fort William, Ont.: Upon hearing the matter at Vancouver, June 29th, 1923, the complainant and the Express Traffic Association of Canada being represented at the hearing, and what was alleged, the Board orders that the complaint be dismissed.

This decision has some bearing on the question of what constitutes discrimination, and also throws some light on the considerations which call for the putting in of commodity rates. L. Perrin & Co., who ship crabs east from the Pacific coast by express, applied to the Board

for a commodity rate on their product when shipped to Fort William, Toronto or Hamilton, Ont., claiming that crabs should take the same special rate as fish. The tariff provides that "Crabs will be charged for at the same rates as on fresh fish in less than carloads, from shipping points named herein to Alberta, British Columbia, Saskatchewan, and Manitoba (Winnipeg and west only)." Fresh fish get a commodity rate, from Vancouver to Toronto and Montreal, of \$6.70 per 100 lb. The crabs take the fresh fish rate of \$4.30 from Vancouver to Winnipeg, but to Toronto and Montreal they take the 1st class rate, which is, to Toronto, \$15.95 per 100 lb., and to Montreal, \$16.20. The Board's judgment pointed out that discrimination hardly entered into the matter, as there are no crabs of the variety shipped by the applicant to be found on the Atlantic coast, while, in so far as rate discrimination as between fish and crabs is concerned, the volume of movement has to be taken into consideration. The applicant had only 120 lb. of crabs a day to ship east of Winnipeg. The applicant urged that the Board at least put in a rate which would not be more than the commodity rate to Winnipeg, plus the 1st class rate beyond, which would have made the rate to Toronto \$13.20 per 100 lb., and to Montreal, \$14. The Board's judgment stated that while it should be, and has been, held that no through rate should be in excess of the sum of the locals, the mere fact of there being a commodity rate to some intermediate point is no reason that such a rate should be calculated as part of a through rate to a point beyond. It said: "A commodity rate is granted having in mind the conditions of traffic existing between the two points covered by the commodity rate. If the commodity rate is to be taken as the measure of one factor in a through rate to a point beyond, then it necessarily follows that similarity, if not identity, of circumstances and conditions should apply as between the movement on the commodity rate alone and the movement where the commodity rate is used as a factor in building up a through rate to a point beyond." The Board held that the express company was not guilty of discrimination in refusing a commodity rate, and dismissed the application.

Ice Cream Mix and Bulk Evaporated Milk Express Rates.

34,271, Oct. 5.—Re application of National Dairy Council of Canada for an order requiring that ice cream mix and bulk evaporated milk be carried by express under commodity cream tariffs: Upon hearing the application at Ottawa, April 17, the applicant and the Express Traffic Association of Canada being represented at the hearing, and what was alleged, the Board orders that the application be refused.

Express Rates on Vegetables from Alberta and British Columbia.

34,281, Oct. 5. — Re complaint of Plunkett & Savage, of Calgary, Alta., and Scott National, Limited, of Medicine Hat, Alta., with regard to express rates on fresh vegetables from points of production in British Columbia and Alberta: Upon hearing the matter at Calgary, July 10, the complainants and the Express Traffic Association of Canada being represented, and what was alleged, the Board orders that the complaint be dismissed.

The Board's judgment on which the foregoing order was issued, was based on the principle that where a complaint of rate discrimination is raised on mere comparison of distance, it must be supported by other evidence before it can be held valid, and that, in many cases, mileage is not a basis for commodity rates. The applicants, who ship fresh vegetables to Winnipeg by express, asked for commodity rates on the same basis as apply to similar shipments from British Columbia during certain months, based on distance; that the effective date of application of the commodity rate be made one month earlier, and that a charge be added to the commodity rate to cover pick-up service when performed by the express company at shipping points. Applicants stated that the rate from Medicine Hat is \$3.85, while the commodity rate from Vancouver is \$3.20 between May 15 and Nov. 30, and \$8.25 during the remainder of the year. The Board pointed out that by Dominion Express Co.'s tariff C.R.C. 4585 there is a commodity rate of \$3.05 applicable from Medicine Hat during the same period the commodity rate is applicable from Vancouver. It was also developed that the vegetables from B.C. are field grown, and move in large lots, while those from Calgary and Medicine Hat are grown in hot-houses, and move in smaller lots. The Board pointed out that the express company had satisfactorily regulated the date of coming into effect of the commodity rate to accord with crop conditions, and would presumably continue to do so, that the request re cartage charges would be satisfactorily disposed of if the applicants advised all shippers as to present tariff provisions, and that a commodity rate based on distance could not be ordered from Calgary and Medicine Hat for the reasons indicated above.

Freight on Logs from Fernie to Calgary.

34,324, Oct. 18.—Re complaint of A. Farquharson, of Fernie, B.C., against service furnished and rates charged on logs by Great Northern and Canadian Pacific Rys. from Fernie to Calgary, Alta.: Upon hearing the complaint at Fernie, July 9, 1923, the Great Northern Ry. being represented, and the applicant appearing in person, and what was alleged, the Board orders that the complaint be dismissed.

Grand Trunk Ry. Junior Securities.

The London, Eng., committee representing the holders of junior G.T.R. securities, was called to meet Oct. 30, to review the position in which they are placed. The Dominion Government, at the beginning of October, issued two pamphlets dealing with the matter, one containing a summary of the justification of the Government's course, and the other covering the case in detail. The latter was prepared by G. W. Yates, assistant Deputy Minister of Railways and Canals.

Victoria Bridge Tolls.—A press report says it is suggested that as the Victoria Jubilee bridge across the St. Lawrence River at Montreal, built by the G.T.R., is now public property the tolls charged for passing over it might be abolished. Canadian National Railways officials are stated to have replied to a query on the matter to the effect that nothing of the kind is contemplated, and that if anything at all was done it would have to be on the initiative of the Dominion Government.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Burrard Inlet Tunnel and Bridge Co.—The directors made a call recently on the shareholders for the payment of the outstanding 90% of the subscribed capital stock issued, payable in 10% instalments, the first to be paid Sept. 24, 1923, and the final one on Feb. 11, 1925. With the exception of some few shares held by private persons, the entire capital stock is held by the cities and other municipalities round Burrard Inlet, which are also guaranteeing the bonds.

The Board of Railway Commissioners has authorized the erection of an overhead crossing for a roadway over the C.P.R. at the south end of the projected bridge across the second narrows of Burrard Inlet.

The Northern Construction Co. has the contract for the construction of the bridge and approaches, at a cost of approximately \$1,250,000, towards which the Dominion Government and the British Columbia Government are contributing \$100,000 each. The bridge, with approaches, will be 3,000 ft. long, of which about 500 ft. will be approaches built up on piles filled in; one 300 ft. span, one 185 ft. single leaf bascule span, and one 150 ft. approach span, with shorter spans across Lynn Creek. The floor of the bridge will be 12 ft. clear above high water. The bridge is designed to carry a single track railway, with a roadway for general traffic cantilevered out on each side. We are officially advised that the general contractors have given a contract to Strauss Bascule Bridge Co. for furnishing plans and specifications of its heel trunnion type of bascule bridge for the 185 ft. span. Orders are reported to have been given for casting the cylinders for the bridge, and other preparations are said to be made for an immediate start on the foundation work. It is reported that the bridge may be completed within 18 months, although the contract allows two years. (Sept., pg. 439.)

Canadian Niagara Bridge Co.—A recent press report stated that it was proposed to proceed immediately with the construction of the projected bridge across the Niagara River, in which the New York Central Rd., the Michigan Central Rd., and the Toronto, Hamilton & Buffalo Ry. are interested. The structure will consist of 2 bridges, each with a draw span, one from Black Creek, Ont., to Goat Island, and the other from Goat Island to the U.S. mainland. (Sept., pg. 439.)

Edmonton, Dunvegan & British Columbia Ry.—Central Canada Ry.—We are officially advised that agreements have been entered into between the C.P.R. and the Alberta Government under which the C.P.R. agrees to include the projected extensions in the general agreement covering the operation of these two lines. The extension on the E. D. & B.C. Ry. is from Grande Prairie, the terminus of the branch from Spirit River, for 15 miles westerly to Sec. 21-7-8 west of the 6th meridian, and that on the C. C. Ry. is for 13 miles westerly from Berwyn, the present terminus. The general contract for both extensions has, we are officially advised, been let to J. W. Mohler, Camrose, Alta., the contract covering grading, the erection of right of way fences, trestle, bridges and telephone lines. The general contractor is reported to have let a subcontract to W. F. Donald for grading on the first 13 miles on the extension out of Grande Prairie, and for

grading on the other two miles to local farmers. A recent press report stated that 3 miles of grading had been done out of Grande Prairie, and that material for the 42-bent timber trestle across Bear Creek, was going forward. The general contractor is reported to have sublet the grading on the Berwyn westerly extension to McDonald & Kinney, who are reported to have had a large number of teams at work since Aug. 28. Galvanized steel culverts have been delivered for both lines; and ties and posts and other material are being delivered at the starting point of both extensions. We are officially advised the tracklaying will be done next year by the Alberta Railways Department's forces. No contract has been let for the supply of rails and fastenings and probably will not be for some time. (Sept., pg. 439.)

Fort Alexander Ry.—Grading is reported to have been completed on the projected line from Beconia, Man., mile 52, on the Canadian National Rys. Winnipeg-Victoria Beach branch, to Fort Alexander, Traverse Bay, Lake Winnipeg, with the exception of about 8 miles on low lying land near Fort Alexander. The J. D. McArthur Co., which is doing the construction, is reported to have moved a large dredge from Selkirk to Fort Alexander, to dig a ditch to drain the area known as the Julius bog, so as to enable the line to be completed. Ties and rails are reported to have been distributed along the completed roadbed from Beconia. (Sept., pg. 439.)

Kettle Valley Ry.—We are officially advised that the following bridges over the Nicola River, B.C., which were built in 1906, are having new steel structures placed on the original concrete abutments, the contract for the supply of the steel having been given to Canadian Bridge Co., Walkerville, Ont. Bridge 21.4, height above water, 12 ft.; existing 150 ft. Howe truss span being replaced by a 150 ft. through truss span. Bridge 28.4, height above water, 16 ft.; existing 150 ft. Howe truss span being replaced by a 150 ft. through truss span. Bridge 30.8, height above water, 12 ft.; existing 100 ft. Howe truss span being replaced by a 100 ft. through truss span. Bridge 33.7, height above water, 10 ft.; existing 100 ft. Howe truss span being replaced by a 100 ft. through truss span. Bridge 39, height above water, 9 ft.; existing 184 ft. Howe truss span being replaced by a 184 ft. half-through plate girder span.

Michigan Central Rd.—A press report states that, during the summer, 200,000 new ties were placed on the Canadian lines, and that 78 miles of new rails were laid, and 12 miles of track ballasted with stone. The new extension yard at St. Thomas is reported to be completed, except for track laying. (Sept., pg. 439.)

Pacific Great Eastern Ry.—The British Columbia Minister of Railways made an inspection, recently, over the completed line, and also the unfinished line into Prince George, B.C. The latter section is reported to have been found in fair shape. The B.C. Minister of Public Works also made a trip over the line, recently, and through the surrounding territory, and went on to Summit Lake, on the Alberta boundary. On his return to Victoria he was reported to have referred to the work done by the Public

Works Department in constructing wagon roads from the inland valleys to the main roads, and so giving connection with the P. G. E. R., and to have said that this policy would be continued, to promote settlement along the line, for which the Government is reported to be preparing elaborate plans.

Sydney & Louisburg Ry.—A press report states that 2 miles of line are being built from Waterford, mile 8 from Sydney, N.S., to Lingan.

Timiskaming & Northern Ontario Ry.—The Lieutenant Governor of Ontario, accompanied by the Premier of Ontario, G. W. Lee, Chairman of the T. & N. O. Ry. Commission, and several others, left Toronto, Sept. 12, for North Bay, whence they travelled over the T. & N. O. R. to Cochrane, then inspected the extension under construction to near New Post on the Abitibi River; and then went over the route of the projected further extension to Moose Factory, returning by aeroplanes. On the return of the party to Toronto Sept. 29, Premier Ferguson, in a press interview, reviewed the situation, adding that he proposed next spring to investigate the fish and mineral developments of the Hudson Bay area, but the Government would not reach any conclusion as to building the proposed extension without being fully assured that the prospects warranted it. The Government did not propose to rush into any project.

Regarding the 70-mile extension from Cochrane, track has been laid to mile 44, at the second crossing of the Abitibi River, and while considerable grading has been done on the remaining 26 miles, it is not expected that the contractors will complete their work until July or Aug., 1924, instead of October, 1923, as specified. The extension to Moose Factory has been located, and plans and profiles have been made, but the commissioners, according to a statement made by Mr. Lee before he left North Bay, decided not to let any further contract at present, owing to the backward construction on the extension to near New Post.

Considerable progress is reported to have been made by Sinclair Construction Co., Ltd., with grading the branch line from Swastika to Larder Lake, 25 miles, and a press report states it is expected to have track laid by Dec. 31 on the first 17 miles, to near Blanche River. Application is being made to the Dominion Minister of Public Works for approval of the site of the projected bridge across Blanche River, in Mining Claim L9679, Gauthier Tp.

We are officially advised that the T. and N. O. Ry. Commission is investigating matters in connection with the proposed construction of a branch line into the South Lorrain mining area. W. R. Maher, Locating Engineer, is in charge of the work, under the direction of S. B. Clement, Chief Engineer. G. W. Lee, Chairman of the Commission, is reported to have said in a recent interview at Cobalt:—"The mining progress in the South Lorrain silver field has for some time engaged our attention, and we have kept the really remarkable developments there under close observation. Acting under instructions from the Prime Minister, the Commission is surveying the field so that it will have before it the best route, estimated costs and other information, should it be decided at any time to proceed with the construction

of a branch to serve South Lorrain and the favorable country contiguous to Cobalt. Three routes leading from Cobalt station will be surveyed, one from North Cobalt following the general line of the motor road, one extending the Kerr Lake branch, and one leaving the main line at Cassidy, three miles south of Cobalt station. Because of its engineering features and the geological formation of the country that would be traversed, the Commission is inclined at this moment to favor the route from Cobalt via Cas-

sidy. But the whole subject will be thoroughly examined before a decision is made. No information respecting the construction of the branch, which would be between 21 and 22 miles long, can be given just yet." (Sept., pg. 440.)

Tenders were received to Oct. 18 for the supply of 350,000 ties, either for the entire quantity or in lots of 25,000, 50,000 or 100,000.

Vancouver, Victoria & Eastern Ry. and Navigation Co.—We are officially advised that the plans for the rearrange-

ment of the terminal facilities at Guichon, B.C., approved by the Board of Railway Commissioners, show that it is proposed to abandon the dock on which the station and stockyard are located, and which is a considerable distance from the village, and not having been used for several years, needs extensive repairs. As it is not now required for a connection between land and water traffic, it is to be abandoned and the station and stockyard are to be moved to a more central and convenient situation.

Canadian National Railways Construction, Betterments, Etc.

St. Peters Subdivision Diversion.—The reason for the building of this diversion from mile 3.70 from Point Tupper on the Sydney Subdivision, to mile 5.65 on the St. Peters Subdivision, 2,712 ft., which was described in our October issue, is to shorten the line and avoid the maintenance of 5.65 miles of track. The material reclaimed from the abandoned line will more than pay for the diversion. (Oct., pg. 473.)

St. John, N.B., Improvements.—Plans were reported to have been received by the city council recently, showing the land required by the railways for the proposed new development in the vicinity of Lombard and Southwark streets.

Fredericton Locomotive Facilities.—A conference is reported to have taken place Oct. 11, between the railways' officials and representatives of the Fredericton City Council, with reference to the locomotive house there, construction work on which was suspended some time ago.

Hardwood Ridge to Minto.—In the item about the 4.88 miles spur line which is being built from Hardwood Ridge to Minto coal mines, published in Canadian Railway and Marine World for October, Hardwood Ridge was mentioned as being at mile 58.84, Chester Subdivision. It is on Chipman Subdivision, Edmundston Division, Atlantic Region. At the time of writing (Oct. 19), the clearing on the whole line is completed. The grading of the sidings at Hardwood Ridge, and of the first 2 miles of the spur, is about 90% complete, the 3rd and 4th miles about 40% complete, and the 5th mile approximately 50% complete. The substructure of the bridge at Newcastle Stream is expected to be finished by about Oct. 22; culvert work on the first 2 miles is 60% complete, on the 3rd mile 30%, and on the 4th mile nothing done, on the 5th mile 50% complete. The tracklaying of the sidings at Hardwood Ridge is 90% complete and about 40% of the tracklaying on the 5th mile is done. The contractors are doing the grading at the mines end of the spur with a steam shovel, and laying track as they advance. Fencing is completed on the first three miles from Hardwood Ridge, about 20% complete on the 4th mile, and nothing done on the 5th mile. The contractors' progress was hampered a good deal in the commencement of the work by difficulty in getting labor and teams, but they have increased their force steadily, and during the fine weather of the last three weeks, made good progress; they will not, however, be able to finish the work by the contract date, Nov. 1. The progress of the work depends so greatly on the weather, that it is very difficult to say when it will be all completed, but if fine weather prevails, all except the ballasting and the placing of the girders at Newcastle Stream should be finished between Nov. 20 and 30. (Oct., pg. 473.)

St. Malo Shops.—A permit has been granted by the Quebec City Council, a press report states, for the erection of a storage annex to the St. Malo shops there, to cost approximately \$37,000.

Donnacona Cutoff.—A contract for the grading of this cutoff between Donnacona and Grand Mere, Que., which was described fully in our October issue, has been let to the Federal Construction Co., Toronto, to be completed by Aug. 1, 1924. The rails will be laid by C.N.R. forces. (Oct., pg. 473.)

Three Rivers Development.—In connection with plans which are reported to be under consideration by the Marine Department for the improvement of the port of Three Rivers, Que., a press report says that the C.N.R. will build a branch line from St. Barnabe, west of Shawinigan Falls, to Three Rivers, about 22 miles. Of course, this is merely conjecture, as even had the management decided on it, there is no parliamentary appropriation.

Turcot Yard Extension.—An extensive programme of rearrangement and enlargement is reported to be practically completed at the West Turcot yard. The work includes the extension of the 6 intermediate tracks so as to accommodate 660 cars; the laying of a track, accommodating 80 cars for the handling of business to the Jacques Cartier Jct. Ry., bringing the capacity of the yard up to 1,900 cars. The ground on which the work was done was soft and swampy, which involved the placing of 81,000 cu. yd. of rock ballast. A 20 ft. extension has been made to 4 of the locomotive house stalls to accommodate the new 6000 class locomotives.

Victoria Jubilee Bridge.—The Automobile Club of Canada is reported to have asked the Canadian National Rys. to extend the footpath on the east side of this bridge, at Montreal, to enable it to be used by vehicles for one-way traffic. The abolition of tolls is also asked.

Ottawa Crosstown Tracks.—The Mayor of Ottawa received from C. S. Czowski, Chief Engineer of Construction, Canadian National Rys., a plan showing what the management is prepared to do in regard to the removal of crosstown tracks. A press report says the plan shows how 6 of the present tracks may be removed from between Bank and Elgin streets, 4 tracks from between Bank and Lyon streets, and 3 tracks from between Lyon and Bronson streets. This reduction in the number of tracks would leave enough trackage accommodation for the present industries, including a through service line to the Chaudiere. In replying to questions by the mayor, Mr. Czowski wrote:—"The President's offer for abandoning through trains over the line from near South March into Ottawa, was to include the removal of the tracks on this line from

South March as far as the first industry, which at present is that of Burton and Honeywell, just east of our Graham Bay station, providing the City of Ottawa would pay the cost of the removal of the tracks and the cost of making a track connection of our lines near South March, and that then we would be ready to dispose of this abandoned line to the city at a valuation of the property alone. The cost of removing these tracks and making the connection at South March is estimated to be \$50,000, and it is considered that the right of way is worth about \$5,000."

Mimico-Port Credit Third Track.—It was reported, Oct. 18, that the third track between Mimico and Port Credit, Ont., was completed and ready for official inspection prior to being placed in operation. Particulars of this work were given in Canadian Railway and Marine World for August, pg. 378.

Nipissing Jct. Connection.—The Board of Railway Commissioners passed an order on Oct. 4, authorizing the C.N.R. to connect the G.T.R. line with the Canadian Northern Ontario Ry., near Nipissing Jct., Ont., and also passed another order on the same day authorizing the opening of the connection for traffic.

Longlac-Nakina Cut-Off.—We were advised Oct. 20 that Foley Bros. & Hervey would complete their contract on time by Oct. 31, including grading, bridging, concrete work and everything pertaining to the construction, with the exception of track laying and ballasting, which C.N.R. forces are doing. Contractors bid on this work late in 1922, but the contract was not let for some six weeks afterwards. Foley Bros. & Hervey started in the latter part of Jan. 1923 to build camps and tote roads, but the six weeks they had lost delayed the work considerably, as they encountered deep snow which made the building of tote roads difficult. In addition to the original contract, Foley Bros. graded Nakina yard, which is a terminal of considerable extent, and involved quite an addition to the yardage to be moved under the original contract. O. W. Swenson, Secretary-Treasurer of Foley Bros., St. Paul, Minn., was in direct charge of the work, with headquarters at Longlac. At the time of writing (Oct. 22), some 16 miles of track has been laid from Nakina toward Longlac and somewhat less than a mile from Longlac toward Nakina. Cold weather and a heavy snowfall is reported, which will probably delay the completion of the track laying somewhat. (Oct., pg. 473.)

Neebing Terminal Yards.—The Board of Railway Commissioners has authorized the opening for traffic of the portion of the revised eastbound line, mile 36.65 to mile 38.59, Kashabowie Subdivision, Port Arthur Division, Manitoba District, and also the connection between

the revised line at mile 36.56, Kashabowie Subdivision, and mile 30.52, Graham Subdivision, 0.66. These works are part of the rearrangement necessary in connection with the laying out of the Neebing yards. (Oct., pg. 473.)

Kashabowie Subdivision Second Track.—The Board of Railway Commissioners has authorized the opening for traffic of the second track between Twin City Jct. and Kakabeka Falls, Ont., 10.31 miles. (Aug., pg. 378.)

Regina Division Betterments.—The betterments authorized to be done during this year are reported to have been completed on the Regina Division, Saskatchewan District. The principal works are the extension of tracks in the west yard at North Regina, to accommodate 250 cars; the filling in of 7 trestle bridges, laying 65 miles of track with 85 lb. rails and ballasting 25 miles on Glenarm Subdivision; filling a number of trestle bridges and enlarging earth cuts, on Avonlea Subdivision; enlarging cuts and filling bridges on Riverhurst Subdivision; ballasting 56 miles on Gravelbourg Subdivision. New water supplies have been provided at Avonlea and Kipling, and construction is being proceeded with on the Condie dam for the Regina water supply. The water supply works are being done by contract.

Lintlaw to Kelvington.—The Board of Railway Commissioners has authorized the opening for traffic of the line between Lintlaw and Kelvington, Sask., mile 103.3 to 114, Preeceville Subdivision, Dauphin Division, Manitoba District. This is an extension of the line from Swan River, which is projected to a junction with the Humboldt-Melfort line.

Hanna Water Supply.—Tenders were received to Oct. 10, for raising the dam and spillway of the water supply at Hanna, Alta.

Ties for British Columbia Lines.—A press report states that contracts have been awarded for taking out 2,000,000 ties during the winter along the Grand Trunk Pacific Ry., as a result of which the Premier of British Columbia is reported to have said, Oct. 8, that large numbers of settlers were going into the Burns Lake and Vanderhoof districts.

Southern New England Ry.—A recent special press dispatch from Providence, R.I., to a Boston, Mass., paper gave a circumstantial account of the present state of grading and other works on the Southern New England Ry., reported to be under construction from Palmer, Mass., to Providence, and stated that engineering parties were in the field working rapidly running lines and replacing working data at various places with a view of resuming construction. We are officially advised that no surveys are being made on this line. (Oct., pg. 474.)

Railway Accidents.—The number of railway accidents throughout Canada, reported to the Board of Railway Commissioners during September, was 247, in which 1 passenger, 1 employee and 1 other were killed, and 28 passengers, 170 employees and 66 others were injured. Included in "others" were 8 persons killed, and 45 injured, in highway crossing accidents, in which the crossings were protected in 5 cases by bell. In 20 of the 27 highway crossing accidents reported, automobiles were involved, 6 persons being killed and 39 injured. Three highway crossing accidents involved pedestrians, 2 being killed and 1 injured, while vehicles or wagons were involved in the remaining four, 4 persons being injured.

Freight and Passenger Traffic Notes.

The Canadian National and Canadian Pacific Rys. are reported to have loaded 82,219 cars, representing 136,958,448 bush. of grain, from Sept. 1 to Oct. 14, compared with 80,828 cars, representing 130,287,194 bush., for the corresponding period of 1922.

The Canadian National Rys., which have for some time been selling wine and beer on their dining car service between Montreal and Quebec, under the Quebec licensing law, are reported to be completing arrangements for selling those beverages on the Montreal-Halifax trains within the Province of Quebec.

The Canadian National Rys. ran three special trains from Halifax, N.S., Oct. 6, two for New York and one for Detroit, Mich., to carry immigrants landed by the White Star liner Baltic, which had been diverted to Halifax, from New York, in order to obtain some advantage under the United States immigration laws.

The C.P.R. announced, Oct. 20, that it would run special trains for game shooting parties from Toronto to Sudbury, Ont., Oct. 30 and Nov. 1 and 2, leaving Toronto union station at 10.20 p.m., and making all camp stops north of MacTier. The equipment consists of standard sleepers, first class cars and baggage cars.

The Board of Railway Commissioners, on Oct. 16, refused the application of Queen's University, Kingston, et al, for an order to extend to the university and the city, the same privileges in the matter of excursion rates on railways in connection with annual football games as are granted Montreal, Toronto and other large cities.

Sir Henry Thornton, President, Canadian National Rys., is at the time of writing (Oct. 16) expected to attend a meeting at Bonaventure, Que., Oct. 30, to discuss plans for improving the service on the Quebec Oriental Ry., and the Atlantic, Quebec & Western Ry. These lines extend from Matapedia, Que., on the C.N.R., to Gaspé, Que., 202 miles.

The Canadian National Rys. have put on a train leaving Midland, Ont., 7.15 a.m. daily, except Sundays, with through passenger car for Toronto. Returning, a through car is carried on train leaving Toronto 4.50 p.m. daily, except Sundays. This enables the making of a trip in either direction without a change, and gives Midland passengers over 5 hours in Toronto.

The Port Arthur, Ont., City Council is endeavoring to secure from the Canadian National Rys. some arrangement for the transportation to and from their work of the railways' employees resident in the city, but working at the newly-opened Neebing yards. A suggestion that a special train be operated for them has not apparently found favor with local officials, and an appeal has been made to A. E. Warren, General Manager, Western Region.

The Canadian National Rys. has, a press report states, arranged to run special trains from the Pacific coast to connect with the trans-Atlantic steamers at Halifax, N.S., for the Christmas sailings. The first train will leave Vancouver Dec. 3, at 9.30 p.m., to connect with the White Star liner Doric, sailing Dec. 9; another will leave Vancouver Dec. 8, at 9.15 a.m., to connect with the Pittsburgh, sailing for Southampton, and the Canada, sailing for Glasgow.

The Greater Winnipeg Water District Ry. put its winter timetable in effect on Oct. 1. The gasoline car is operated out of St. Boniface, Man., on Mondays and Fridays, instead of Tuesdays, Thursdays and Saturdays, returning Tuesdays and Saturdays, instead of Mondays, Wednesdays and Fridays, as theretofore. This car operates only on a portion of the line, a steam freight and passenger train being run from St. Boniface to Shoal Lake, on Wednesdays, returning the following day.

The Canadian National Rys. made the usual arrangements for special train service in connection with the deer shooting season. Train 39, which runs tri-weekly from Toronto to Parry Sound, was scheduled to run through to Key Jct., Oct. 31, Nov. 2, 7, 9, 12, 14, 16 and 19; and no. 40, southbound, will run from Key Jct., instead of Parry Sound, on Nov. 1, 3, 8, 10, 13, 15, 17 and 20. A special train was scheduled to run from Toronto to Key Jct. Oct. 31, Nov. 2 and 3, and another from Toronto to North Bay, Oct. 31 and Nov. 2.

The Canadian National Rys. discontinued the twice a day car ferry service between the New Brunswick mainland at Tormentine, and Prince Edward Island at Borden, Oct. 29, and commenced operating the winter service of one trip in each direction daily, except Sundays. The connecting train leaves Sackville at 1 p.m., reaching Tormentine at 2.30 p.m., and leaving Borden at 4.05 p.m., reaching Emerald Jct. at 5 p.m., Charlottetown at 6.20 p.m., Summerside at 6 p.m., and Tignish 9.35 p.m. The westbound trains leave Summerside 7 a.m., Charlottetown 6.45 a.m., Emerald Jct. 8.15 a.m., reaching Borden at 8.50 a.m., and leave Tormentine at 10.20 a.m., reaching Sackville at 4.45 a.m.

The Canadian Pacific and Canadian National Rys. will grant special fares to residents in British Columbia and the prairie provinces, to points in Eastern Canada, to enable them to visit their friends. Round trip tickets will be issued at a fare and a third, from Dec. 1 to Jan. 5, 1924, inclusive, the return trip to be made within three months from date of issue. In addition, reduced fares will be given from stations in Winnipeg and Emerson west in Manitoba, Saskatchewan and Alberta, to New Westminster, Vancouver and Victoria, on certain days in December, January and February, good to return up to April 15. Return tickets at single fare and a third will be issued at stations in Alberta and Saskatchewan between Dec. 1 and Jan. 5, to St. Paul, Duluth, Minn.; Chicago, Ill.; Kansas; St. Louis, Mo., and a number of other points in Iowa, Wisconsin, Nebraska and South Dakota, the return journey to be made within three months of date of issue.

Pere Marquette Ry. Earnings, Etc.—F. H. Alfred, President, is reported as stating as follows:—"Gross revenues this year will run about \$46,000,000. Traffic outlook is very good, and, while there is some feeling throughout the country generally that there will be a letting-up, I think we will have a continued heavy movement as good as we are now enjoying in our territory. This movement will be equal to the heaviest we ever had throughout the winter. As a whole, the 1923 traffic movement will exceed anything in Pere Marquette's history."

Railway Wages and Working Conditions in Canada and the United States.

Shopmen.—Details of the Canadian railway shopmen's application to the Railway Association of Canada for an increase in wage rates and the restoration of certain working conditions, were given in preceding issues of Canadian Railway and Marine World. Consequent on the negotiations between the Association's operating committee's sub-committee and officers of the American Federation of Labor's Railway Employees' Department, Division 4 (the shopmen's labor organization) failing to produce any agreement, the railway representatives refusing to accede to the employees' requests, the shopmen's officers sent out ballots to ascertain whether the men wanted negotiations continued with the Railway Association, or whether they wanted an application made for a board of conciliation and investigation, under the Industrial Disputes Investigation Act. The ballots were returned by the end of September, and on Oct. 2 it was announced that the majority of the men had expressed themselves as favorable to continuing negotiations, and that therefore further meetings with the Association's operating committee's sub-committee would be sought.

Maintenance of Way Employees.—Preceding issues of Canadian Railway and Marine World gave details of the Canadian railway maintenance of way employees' application for wage increases, the meetings held between the Railway Association of Canada's operating committee's sub-committee and the men's representatives, the railways' refusal to grant the increased wages, and the employees' request to the Labor Department for a board of conciliation and investigation under the Industrial Disputes Investigation Act, which was granted. The railways nominated R. T. Riley, Winnipeg, formerly a Canadian National Rys. director, as their representative on the board, and the employees nominated David Campbell, Winnipeg. In the absence of a joint recommendation as to a chairman, the Minister of Labor appointed E. McQuirk, Montreal. The board held its first meeting in Montreal on Oct. 9, when the railways were represented by Geo. Hodge, Assistant General Manager, Eastern Lines, C.P.R.; M. S. Blaiklock, Assistant Chief Engineer, Operation Department, Canadian National Rys.; A. E. Crilly, Chief of Wage Bureau, Canadian National Rys., and A. Freeman, Staff Registrar, Timiskaming & Northern Ontario Ry. The employees were represented by A. McAndrews, W. Aspinall, G. H. Cummings, P. Woods, and other maintenance employees' officers. Mr. McAndrews, in asking for an increase of 5c an hour, argued generally that present wages are too low, and that U.S. roads are paying considerably higher wages than railways in Canada are. On Oct. 10 the railways presented their case, which was, generally, that the wage increase sought is not justified at present, and that if it were granted, it would increase railway operating expenses about \$4,500,000 a year, which would necessitate charging higher rates for freight and passengers. The hearings were concluded on Oct. 16, and the case was left with the board for consideration. It was reported on Oct. 19 that the Board had submitted its report to the Labor Department. Press dispatches of Oct. 22 stated that the Board's unanimous decision was that the employees be granted 2c an hour increase, and that their representatives had signi-

fied their willingness to accept the award as satisfactory.

C.P.R. Telegraphers.—The application of C.P.R. employees, members of the Order of Railroad Telegraphers, for a board of conciliation and investigation under the Industrial Disputes Investigation Act to consider their dispute with the C.P.R., has been granted. The C.P.R. nominated J. B. Coyne, Winnipeg, to represent it, and the employees nominated David Campbell, Winnipeg. In the absence of a joint recommendation from Messrs. Coyne and Campbell, the Minister of Labor appointed Lt.-Col. O. M. Biggar, Ottawa, as chairman.

Consolidation of Clerical Workers' Unions.—The American Federation of Labor, at its annual meeting at Portland, Oregon, on Oct. 4 instructed the executive council to use its influence toward the consolidation of the Canadian Brotherhood of Railroad Employees, and the Canadian membership of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees. The former is a purely Canadian organization, and the latter is affiliated with the American Federation of Labor. The Canadian Brotherhood of Railroad Employees has most of its membership on Canadian National lines, and the international organization's Canadian members are mostly on the C.P.R. The resolution recited negotiations which have been in progress for such a consolidation, and provided that the presidents of the American Federation of Labor and the Trades and Labor Congress of Canada should each assign a representative to assist in organizing every eligible railway and steamship employee in Canada into the international brotherhood.

Shop Staff Reductions.—Consequent on the seasonal slackening in work at the Canadian National and Canadian Pacific shops in Montreal which usually takes place about this time of year, after the motive power and rolling stock have been put in good shape for the crop movement, the two railways gave notice to a number of their junior shop employees that they were to be laid off. Some 400 were reported to have been laid off at the C.P.R. Angus shops on Oct. 1, and it was also reported that when the company gave notice that another 150 were to be laid off a few days later, the employees proposed to the management that the shops be placed on a 40-hour week instead of 44, and the management took the matter under consideration. The Canadian National management gave notice on Oct. 17 that short time and staff reductions would be introduced in the Montreal shops on Oct. 20, the notice being worded in such a way as to indicate that all men with less than 6 months' seniority would be laid off. It is reported that a 40-hour week will be placed in effect at the Canadian National Rys.' Stratford shops on Oct. 20, the time to be 8 hours for 5 days weekly, and that the last 50 men taken on will be laid off.

Canadian Brotherhood of Railroad Employees.—At the recent meeting in Calgary, Alta., it was decided to hold the 1925 meeting in Toronto. A resolution was adopted favoring the consolidation of the 16 standard railway labor organizations now existing in Canada, the aim being that the united body should maintain a strong international relationship with similar employees in the U.S., but should be entirely independent in

dealing with all problems of purely Canadian character.

As the result of action initiated by President A. R. Mosher, the brotherhood has established a "fact finding bureau," to gather and compile data on living costs, railway financial results, etc., presumably so as to enable the brotherhood's officers to be well armed with information on economic matters when wage matters are being discussed with the railways.

The Canadian Railway Board of Adjustment, No. 1, gave some decisions of general interest lately, among which was a dispute between the Canadian National Rys. Western Region management and the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen, concerning articles 3 and 7 of the schedule. The Board's decision was that the railways have the option of paying for any run as a basic day in each direction, under article 3, or as a short run in turn-around service under article 7. In the event of a run being paid for as a short run in turn-around service, the time is continuous. On assigned runs paid as short runs in turn-around service, the railways would necessarily designate the initial point of the run.

Other cases decided by the Board included a dispute between the Canadian National Rys. Western Region management and locomotivemen and firemen concerning article 24 of the schedule, which provides for men in work train service laid up away from terminal points, and for getting home for Sundays. The employees contended that if the railway fails to get men to their home terminal for Sunday, they should be paid for the day, while the management contended that if it moved the crew to the nearest terminal for Sunday, and did not tie the men up at, for example, a gravel pit, it was fulfilling the spirit of the agreement. The decision stated: "The employees' contention is sustained, it being understood that 'home terminal' as referred to in article 24, clause B, is the home terminal of the subdivision the employees are working on at the time Sunday release is requested."

Another dispute was as to the interpretation of article 2 of the schedule, paragraph E. The employees contended that doubling under that article is an arbitrary allowance, and that when locomotivemen are required to make side trips on subdivisions, they should be paid in keeping with the article. The management conceded that a minimum of 10 miles is to be allowed for a double, or a side trip, but only if the crew do not run into overtime, and not if they are paid constructive mileage, and that only to that extent is the provision arbitrary. The employees' claim was sustained on the understanding that no mileage included in an assigned run shall constitute a side trip.

United States.—The U.S. Railroad Labor Board is considering various applications from the Brotherhood of Railroad Signalmen for new rates of pay ranging from 60c an hour for helpers to \$1 for foremen; from the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, for wage increases for members employed on the Chicago, Rock Island & Pacific and other roads; from crossing watchmen on the Boston & Maine Rd., and from the American Train

Dispatchers' Association for rates of \$335 a month for assistant chief dispatchers, and \$300 a month for trick dispatchers on the Great Northern Ry. It is stated that the general chairmen of the Order of Railway Conductors and the Brotherhood of Railroad Trainmen will soon approach the U.S. railway managements for wage increases averaging 12%.

Inspector of Railway Operation Wanted.

The Civil Service Commission has invited applications to Nov. 8, for the position of Inspector of Railway Operation for the Board of Railway Commissioners, Operating Branch, in the Province of Quebec and east, at an initial salary of \$2,280, which will be increased upon recommendation for efficient service at the rate of \$120 a year, until a maximum of \$3,000 has been reached. This salary will be supplemented by whatever bonus is provided by law.

Duties.—Under supervision, to make observations and inspections of traffic on public carriers, with respect to adequacy of service and conditions of safety; to inspect the operations of railway companies as to compliance with regulations; to investigate and report on complaints as to service, car supply, and movement of traffic; to investigate causes of accidents; and to perform other related work as assigned.

Qualifications.—Education equivalent to high school graduation; three years of experience in the operating department of a railway, with some actual experience in the operation of trains; working knowledge of railway operating rules and regulations; ability to investigate and report on complaints as to station traffic; and causes of accident; quickness of perception; good judgment; tact; knowledge of both French and English. Though no definite age limit has been fixed for this competition, age may be a determining factor in making a selection.

Nature of Examination.—Subjects and weights as follows: education and experience; to be rated from the sworn statements, supporting documents and other evidence submitted by applicants, weight 3; practical questions, weight 4; oral examination, weight 3.

An eligible list may be established which will be valid for one year.

Locomotive Fuels.—The International Railway Fuel Association is investigating the relative values of various locomotive coals and fuel oils available for locomotive use, and will present the results at its next annual meeting. The U.S. Interstate Commerce Commission requires railways burning fuel oil to report the equivalent consumption of coal per freight ton mile, and per passenger car mile, on the assumption that $3\frac{1}{2}$ barrels of fuel oil is equivalent to one ton of coal. The relative value of coal and oil fuels is not represented by their comparative b.t.u. content, largely because of differences in stand-by losses, and the Fuel Association's studies are intended to establish the true relative efficiencies of coal and oil as locomotive fuels.

Railway Directors' Succession Duties.—The Quebec Public Accounts for the year ended June 30, 1922, show that the estate of the late Sir William Van Horne paid \$222,858.05, and that of the late R. B. Angus, \$256,043.88, for succession duties.

Railway Rolling Stock Orders and Deliveries.

Quebec Development Co. has received 4 class 0-4-0 locomotives, with 13 x 20 in. cylinders, from Montreal Locomotive Works.

The Canadian National Rys. have received 12 class 2-8-2 locomotives, cylinders 27 x 30 in., from Montreal Locomotive Works.

The Timiskaming & Northern Ontario Ry. has ordered 3 mikado locomotives from Canadian Locomotive Co., to be built to the same specifications as the 4 obtained from the same company in 1921.

The C.P.R., between Sept. 14 and Oct. 11, received the following rolling stock: 3 mikado locomotives, from Montreal Locomotive Works; 455 36 ft. steel underframe box cars, and 9 steel snow plows, from its Angus shops, Montreal; 250 75-ton steel coal cars, and 12 steel mail and express cars, from Canadian Car & Foundry Co.

Price Bros. & Co., Ltd., whose head office is at Quebec, Que., has ordered an 0-6-0 locomotive from Montreal Locomotive Works, which will have the following general dimensions, etc.:

Gauge.....	4 ft. 8½ in.
Weight on drivers.....	125,000 lb.
“ engine	125,000 lb.
“ tender	87,000 lb.
Wheel base driving.....	11 ft.
Total, engine	11 ft.
Total, engine and tender.....	41½ ft.
Cylinders	19 x 26 in.
Driving wheels	50 in.
Tender truck wheels.....	33 in.
Main journals	8 x 10 in.
Others	8 x 10 in.
Tender truck journals.....	4¼ x 8 in.
Boiler, type	Radial stay
“ pressure	180 lb.
Firebox, length	95½ in.
“ width	41¼ in.
Grate area	27.2 sq. ft.
Tubes	215-2 in.
Length of tubes	11 ft.
Heating surface, tubes.....	1230 sq. ft.
“ firebox	126 sq. ft.
“ total	1356 sq. ft.
Tractive power	28,700 lb.
Factor of adhesion.....	4.35
Tender frame.....	Steel channels
Tank capacity.....	4,200 gall.
Coal	6½ tons

Canadian National Rys. British Emigration Campaign.—The Canadian National Rys. opened the winter lecture campaign to promote emigration from England at Downham, Norfolk, Oct. 8, with a lecture by A. T. King, a Canadian farmer, who during last summer had charge of a party of settlers from England to the prairie provinces.

Another Hotel for Vancouver?—A Vancouver, B.C., press report states that arrangements have been completed for financing the construction of a large modern hotel at Seymour and Georgia Sts. there, “to serve the Canadian National Rys. needs,” and to cost between \$1,000,000 and \$1,500,000.

C.P.R. Shares Distribution.—It is stated that of the 2,600,000 shares of common stock, about 1,302,322, or 46.28%, are held in the United Kingdom; 653,534, or 25.14%, in the United States; 535,230, or 20.59%, in Canada; 76,847, or 2.95%, in France, and 131,067, or 5.04%, in other countries.

Canadian Railway Club.—G. A. Kell, Safety Engineer, Canadian National Rys., Toronto, read a paper at the club's meeting in Montreal, Oct. 9, on railway crossing accidents, their cause and prevention, which was illustrated by stereopticon views.

Freight Rate Reductions Proposed in United States.

It is reported from Washington that President Coolidge suggested to President Rea, of the Pennsylvania Rd., on Oct. 16, that U.S. railways reduce rates on export wheat, and quote the same rate on export coal as on coal for domestic use. The President is reported as being of opinion that a reduced wheat rate would be of great help to farmers, and as saying that New York and New England people are protesting that the railways are carrying coal through their states to Canadian points at lower rates than on coal consigned to them, and that, while he recognized that low export rates are based on good economic reasoning, he did not think they promoted good feeling.

It is also reported from Washington that the Interstate Commerce Commission is preparing to institute an investigation to determine the reasonableness of rates on grain and grain products in all parts of the U.S.

As indicated in the reports on the U.S. railways' earnings published in Canadian Railway and Marine World, the U.S. western roads, which would be most affected by grain rate cuts, are not obtaining earnings which hold out much prospect of them being able to grant any reductions without suffering operating deficits.

American Railway Association, Mechanical Division, Officers.

The officers for the year ending June, 1924, are as follows:—J. Purcell, Assistant to Vice President, Atchison, Topeka & Santa Fe Ry., Chicago, Chairman; T. H. Goodnow, Superintendent Car Department, Chicago & Northwestern Ry., Chicago, Vice Chairman; V. R. Hawthorne, Chicago, Secretary. The following are among the members of the various committees:—J. Coleman, General Superintendent, Car Equipment, Central Region, Canadian National Rys., Toronto, general and arbitration; H. H. Boyd, Assistant Chief Mechanical Engineer, C.P.R., Montreal, prices for labor and materials; C. E. Brooks, Chief of Motive Power, Canadian National Rys., Montreal, locomotive design and construction; J. Burns, Works Manager, C.P.R., Montreal, design of shops and engine terminals; W. Clegg, Chief Inspector, Air Brake and Car Heating Equipment, Canadian National Rys., Montreal, brakes and brake equipment; A. McCowan, Assistant General Superintendent, Car Equipment, Canadian National Rys., Winnipeg, loading rules; L. K. Silcox, General Superintendent, Motive Power, Chicago, Milwaukee & St. Paul Ry., Chicago, general and electric rolling stock; G. E. Smart, Chief of Car Equipment, Canadian National Rys., Montreal, car construction; C. H. Temple, Chief of Motive Power and Rolling Stock, C.P.R., Montreal, general.

Railway Lands Patented.—Letters patent were issued, during September, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, to the Canadian Northern Ry. Co. for 606.36 acres.

The C.P.R. Co. has subscribed for \$2,000,000 of the Dominion Government's Refunding Loan, 1923, 5% Bonds, not merely \$2,000, as stated erroneously in Canadian Railway and Marine World for October.

The Toronto Viaduct and Union Station Questions.

A letter signed jointly by Sir Henry W. Thornton, President, Canadian National Rys., and E. W. Beatty, President, C.P.R., was delivered to the Mayor of Toronto on Oct. 22, copies being given to the Toronto Harbor Commission's Chairman, and to the Toronto Board of Trade's Vice President, as follows:—"We have received your communication requesting a statement from the railway companies in connection with the grade separation on the water front in Toronto. Some weeks ago we announced our intention of making such a statement, and your letter affords us the opportunity of making it now. We desire to assure you that there has been no thought or desire on the part of the railway companies, parties to the agreement of 1913, to repudiate that agreement, and the responsibilities devolving upon them are acknowledged. The work has not been proceeded with owing to conditions with which the City of Toronto and all parties to the agreement have been entirely familiar. At first a delay was caused by the war, and subsequently by post-war conditions and other well known causes. The result was that an application was made to the Board of Railway Commissioners for an extension of time. Since then the Grand Trunk Co. has become merged in the Canadian National Ry. Co., and the latter company joins with the Canadian Pacific Co. in acknowledging the binding effect of the agreement of 1913, but, of course, under the altered conditions the sanction of Parliament must be obtained to any expenditure by the Canadian National Rys.

"The objects sought to be attained by the agreement were the provision of safe crossings to and from the harbor front, proper facilities to those entering and leaving the city, and the suitable development of the harbor itself. The method adopted as the most desirable at the time the matter was before the Railway Board in 1913 was track elevation, extending practically along the whole water front, but maintaining, as was necessary, existing sidings at ground level, which would in a measure perpetuate the grade crossing situation. The railway companies have recently considered whether the plan decided on in 1913, having regard to conditions now existing and in the light of subsequent investigations, is the best solution of the problem in the interests not only of the railway companies, but especially of the City of Toronto and the public generally. With no intention or thought of repudiating the responsibilities to the railway companies involved in the contract of 1913, we feel that a meeting should be held at an early date between the representatives of the parties to the agreement, at which time the railway companies would be prepared to explain the modifications which they have in mind.

"The money involved in the proposed construction is large and the contribution which the city would make to the project is considerable, consequently it would seem to be a matter of ordinary business prudence that the parties to the agreement should satisfy themselves that when a final arrangement is reached, it will represent a scheme which will not only be economical, but in the interests of the City of Toronto, together with the speedy employment of the existing union station for the purpose for which it was constructed.

"To this end, the companies have in-

structed their chief engineers to prepare plans and estimates for submission to the representatives above mentioned at a meeting which, we suggest, should be held on a date to be fixed during the week commencing Nov. 12. This will give ample opportunity for discussion prior to the time when the necessary authorization for the expenditures required must be obtained."

At a conference between the city board of control and the harbor commissioners on Oct. 23, it was decided to confer with the two railway presidents, as suggested in their letter.

The British Railways Amalgamation Tribunal.

Under the Railways' Act, passed by the Imperial Parliament, Aug. 15, 1921, the Railways' Amalgamation Tribunal was formed to settle and approve the schemes of amalgamation of the different railway units, into the four systems authorized. The board consisted of Sir Henry Babbington Smith, Chairman; Sir William Plender, an accountant, and E. J. Talbot, K.C. From its appointment until the beginning of this year, the board was occupied in hearing applications for approval of schemes covering the larger railways, and dealing with the amalgamation of smaller companies in connection with which there were no special obstacles or difficulties. With the settlement of the Caledonia Ry. case, and the completion of the London, Midland & Scottish Ry., early in the year, the greater part of the board's work was done. There remained, however, a number of cases of small companies belonging to the several groups, of a difficult and highly contentious character which have occupied its attention since. The last four groups were dealt with at the board's final public sitting, Sept. 28. In connection with two of these cases, both of which are insolvent companies, with liabilities considerably in excess of assets, in connection with which points of law are involved, a stated case is being submitted to the Court of Appeal. The Chairman was present at every meeting of the board, except the last, which was held the day before his death.

American Association of Passenger Traffic Officers.—Canadian Railway and Marine World for October, in referring to this Association's annual meeting in Montreal, said that the Canadian National Rys. ran a special train from Chicago for the members from southwestern points to Montreal, a stop of a few hours being made in Toronto, Sept. 15. We are officially advised that the Michigan Central Rd. and Canadian Pacific Ry. ran a special train from Chicago to Montreal, leaving Chicago Sept. 15, stopping over in Toronto on Sept. 16, and reaching Montreal Sept. 17. The C.P.R. also entertained the members at luncheon at the Chateau Frontenac, Quebec.

Alleged Humor from Toronto Evening Telegram: "A glorious page of history was written when Canadians captured Vimy Ridge. Surely eastern Canadians ought to be able to 'bust' the Thornton line and capture necessary coal from Alberta ridge!"

The Canadian National Rys. property assessment in Hamilton, Ont., is reported to have been fixed at \$325,000, under an agreement between the management and the city assessment department, confirmed by the county court judge.

Locomotive Crews and Long Schedule Runs Decision.

Consequent on the Canadian National Rys. management introducing mountain type passenger locomotives on the Atlantic Region, and on the management's desire to have locomotive crews operate them over two seniority districts, a dispute arose between the management and the men, the latter represented by the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen, which was submitted to Canadian Railway Board of Adjustment No. 1 for settlement. The joint statement given the Board was as follows:—"With introduction of mountain type locomotives assigned to passenger trains 1, 2, 3 and 4, the railway instructed enginemen to operate such power over two seniority districts, which enginemen protest against." The railways' contention as presented to the Board was as follows:—"The assignment of mountain type stoker-fed passenger engines to two subdivisions between Campbellton and Riviere du Loup, makes it desirable that enginemen be assigned to the engines and follow them. The mileage of the two subdivisions is 188, and the time is as equally distributed as possible between the Campbellton and Riviere du Loup men. By the assignment as made by the railway there is a saving in time paid to engine crews equal to 64 miles a day." The employees presented the following statement to the Board:—"Action of railway, in forcing the interchange of seniority district rights of enginemen, breaks up an established seniority district practice which has been in effect for over 30 years, and is inconsistent with railway's actions on other portions of the railway on Atlantic Region; further, the action of the railway constitutes a violation of the interpretation of the U.S. Labor Board on general order 27 and supplement thereto, in that it is in direct opposition to the rulings that past practices and customs are not to be interfered with. Further, it is contended by the employees that the action of the railways constitutes a violation of article 30 of present enginemen's schedule." The Board's decision was:—"The contention of the employees is sustained. Under the existing agreement, men should not be run off their seniority district except by mutual arrangement."

A Contractor's Security Suit.—Hugh Doheny, railway and general contractor, since deceased, brought an action in a Quebec court against C. T. Macalister to recover \$43,000 on a note payable to H. J. Lyons' order in connection with some contract. The executors were authorized by the Supreme Court to continue the suit, the hearing of which having been completed, Mr. Justice de Lorimer gave judgment in default, Oct. 4, in favor of the Doheny estate for \$43,000, with 7% interest from Nov. 20, 1920, and costs.

C.P.R. Conductor Imprisoned.—Ephraim Birk, a C.P.R. conductor, was fined \$100 and costs by the Moose Jaw, Sask., police magistrate recently, or in default, one month's imprisonment, for breaking open cases in a box car en route from Moose Jaw to Swift Current.

The Canadian National Railways have sold 30,000 sq. ft. of land, at the corner of Dalhousie and St. Andrew Streets, Quebec, to the Quebec License Commission, which will erect a large administration and storage building thereon.

Canadian Ticket Agents Association Annual Meeting, Etc.

The Canadian Ticket Agents Association held its annual outing and meeting at Montreal, Oct. 9 and 10, with an attendance of over 100. On Oct. 9, the members were given a drive round Mount Royal, and were entertained at luncheon by Canadian Pacific Steamships Ltd. on the s.s. Melita, W. Ballantyne, Steamship General Passenger Agent, C.P.R., presiding. G. H. Ham, of the C.P.R. headquarters staff, gave a brief account of the reception of the s.s. Empress of Australia in Vancouver on arriving there after the earthquake in Japan. In the afternoon a number of the members were taken round the harbor on the harbor commissioners' yacht, and the whole party was entertained at a theatre in the evening.

The business meeting was held at the Mount Royal Hotel on Oct. 10, President McDonald, Valleyfield, Que., being in the chair. A number of questions were discussed, the principal one being as to the best way to appeal to railway passenger officials for the restoration of transportation privileges, which had been granted for 25 years, for the wives, et al, of members who are ticket agents on a commission basis, and which were withdrawn in 1919 on the passing of the Railway Act. A committee was appointed to wait on the railway officials in this connection. A number of representatives of Canadian and U.S. railways and steamship companies were present, and several of them spoke. The following officers were elected:—President, C. L. Von Gunten, Canadian National, Blenheim, Ont.; 1st Vice President, G. Sutherland, Canadian Pacific, Ingersoll, Ont.; 2nd Vice President, J. L. Boyes, Canadian National, Napanee, Ont.; 3rd Vice President, W. W. Porte, Canadian Pacific, Brighton, Ont.; Secretary-Treasurer, E. de la Hooke, London, Ont.; Auditor, J. S. Giles, Canadian Pacific, Lachute, Que.; executive committee, W. Jackson, Canadian Pacific, Clinton, Ont.; A. M. Hare, Canadian National, Tillsonburg, Ont.; C. B. Janes, Canadian Pacific, Orillia, Ont.; W. H. C. MacKay, Canadian Pacific, St. John, N.B.; E. R. Blow, Canadian Pacific, Whitby, Ont.; Honorary Physician, Dr. J. W. Shaw, Clinton, Ont.

The total number of harvesters brought from Great Britain to Canada this year was 11,718, and up to the end of September, only 347 had booked passages back to England. It was stated on Oct. 18, by the Minister of Colonization, Mr. Robb, that winter positions had been found for about 8,000.

Timiskaming & Northern Ontario Ry. Fire Insurance.—The Commission will receive tenders, to Nov. 1, to provide rate or rates for fire insurance on the whole or portion of its property for one year and three years, respectively, from Dec. 1.

Alaska Railroad Damaged.—A Washington, D.C., press report says that a telegram from Anchorage states that about 100 miles of the line have been put out of service, an unusually heavy rain, and high tides, having greatly damaged the section between Seward and Potter, destroying bridges, etc.

British Columbia Lumber for Railway Use.—The B.C. Minister of Lands is reported to have stated recently that the Canadian National Rys. had ordered several cars of B.C. clear edge-grain cedar for passenger car siding, and are also using B.C. cottonwood veneer plywood for ceilings in passenger cars.

Grain Shipments to Vancouver Embargoed Temporarily.

We are officially advised that the C.P.R. placed a temporary embargo, on Oct. 11, on grain consigned to Vancouver, B.C., because of a longshoremen's strike which began Oct. 9. D. C. Coleman, Vice President, Western Lines, C.P.R., made the following statement:—"The suspension restrictions will be enforced until it is established loadings can be freely made from elevators to steamships. There is sufficient grain in the elevators, and in transit, to provide cargoes for all ships in port or in sight. Just as soon as it is established that inbound shipments can be taken care of without danger of congestion and delay of equipment, shipments will be resumed."

The strike was started by longshoremen at Vancouver and other Pacific coast points, including lumber loading points in the Fraser River area, to enforce demands for 90c an hour and \$1.35 for overtime, instead of the 80c and \$1.25 rates being paid. They also demanded 5c an hour bonus for handling lumber, and that all checkers employed belong to their union. The Shipping Federation, representing their employers, stated that higher wages could not be afforded, and decided to fight the strike, which has apparently been done with success, as the last reports are that new men have been employed and that ships are loading and discharging cargo as usual. Although we have no official advice that the embargo has been lifted, it is reported that Mr. Coleman assured interested parties that the C.P.R. would keep grain moving forward to Vancouver as fast as there were ships to take it away, and it is likely that the export grain flow through Vancouver will not be seriously interrupted.

Since the foregoing was put in type, a Winnipeg press dispatch of Oct. 20 states that E. D. Cotterell, Transportation Assistant, C.P.R., had announced that the embargo had been removed and that despite the longshoremen's strike, loading and shipments were being well maintained.

We were officially advised, Oct. 16, that the Canadian National Rys. had not then found it necessary to suspend grain shipments from the prairie provinces to Vancouver.

Michigan Central Rd. Employees Instruction Concerning Freight Loss and Damage.—We are officially advised that agents, yardmen, locomotive men, trainmen and freight house forces on the Michigan Central Rd.'s Canadian Division are receiving instruction, in which motion pictures play an important part, in the handling of freight equipment and lading in such a way as to reduce freight damage, overages and shortages to a minimum. The pictures are exhibited by a New York Central Lines representative, who is handling this work on N.Y.C. lines and those of subsidiary companies. On the M.C.R.'s Canadian Division, meetings are held every 60 days, and all cases of damage, overage and shortage on the home and connecting roads are gone into thoroughly, and instruction is given as to how to avoid similar cases in future. The activities of the "over, short, and damage committees" on the M.C.R. and other roads, in recent years, have resulted in material reductions in the losses from lost and damaged freight. It is felt that the introduction of motion pictures into the instruction will increase its value to the employees.

Telegraph and Cable Matters.

Thos. Rodger, Montreal; C. E. Davies and E. Kenward, Toronto, attended the recent annual meeting of the American Railway Association's Telegraph and Telephone Section, held at Colorado Springs, Colo.

G. W. Bancroft, local agent, C.P.R. telegraphs, Montreal, was presented recently by J. McMillan, General Manager of Telegraphs, C.P.R., on behalf of the staff, with a silver tea service on the occasion of his marriage to Miss Lillian Wyatt at Elmira, Ont.

R. C. Kennedy, of the Pacific Cable station at Banfield, Vancouver Island, was married in Christ Church Cathedral, Victoria, B.C., Oct. 5, to Miss Winnifred Winton-Ingram, the Bishop of Columbia officiating. The bride is a cousin of the Bishop of London, Eng.

The Postal Telegraph and Commercial Cable Co. landed one end of its new Atlantic cable at Far Rockaway, N.Y., early in August, and continued laying the cable toward Canso, N.S. Early in September, after having laid a considerable section, it was stated that owing to a slight accident, the end had been dropped, and the cable lost. After two days' search for the lost end, it was decided to abandon it temporarily, and proceed to Canso, N.S., to commence laying cable from that end, and return later to the vicinity of the lost cable, to grapple for the end.

The Commercial Telegraphers' Union held its annual meeting at Montreal, Oct. 1 to 5, and passed a resolution favoring the holding of a celebration on the nearest Sunday to April 27 in each year, in memory of S. F. B. Morse, inventor of the Morse code. Another resolution was passed calling upon various public bodies "to use their influence to help emancipate the commercial telegraphers of the United States and Canada from the tyranny of the great telegraph corporations, who deny to those engaged in the business of communication the right to exercise full and free citizenship."

In dealing with complaints regarding the cable service between Canada and the West Indies, at the recent conference of premiers in London, Eng., the Duke of Devonshire stated that there had been placed before the Canadian and West Indies Governments recently, a scheme for an all-British cable from Turks Island to Barbados, with subsidiary connections by cable and radiotelegraphy to other colonies, based on the continued co-operation of the British and Dominion and colonial governments; that it had been accepted in principle by all the governments concerned, and that it is hoped to carry it out during 1924.

W. C. Burton, Postmaster of Brooklyn, N.Y., who died there, Sept. 3, was born Oct. 7, 1864, at Carlyle, Wentworth County, Ont., and in 1876 entered Dominion Telegraph Co.'s service at Dundas, Ont., as messenger, later becoming operator and manager there. On the consolidation of the Dominion Telegraph Co. and the Montreal Telegraph Co., and the formation of the Great North Western Telegraph Co., in 1881, he was removed to Buffalo, N.Y., and shortly after transferred to the Western Union Telegraph Co. there. He became a state senator in 1902, served as such during the two following years, and was appointed Postmaster of Brooklyn in 1916, and again in 1920.

Cable reports of the Imperial Confer-

ence at London, Eng., Oct. 17, state that the British Postmaster-General criticized some of the Dominion Government's Departments for not using the Imperial cable operated between Halifax, N.S., and London. Hon. G. P. Graham, Minister of Railways, is reported to have replied that, while willing to do anything possible to assist the Imperial cable, that the Canadian National Telegraphs system is being operated as a business proposition. The Government is prepared to have an interchange of traffic, but it could not be expected that the Canadian National Telegraphs would hand its business over to the Imperial cable solely as a matter of sentiment and without receiving traffic in return.

The Canadian representatives on the American Railway Association Telegraph and Telephone Section committees, appointed at the recent meeting to carry on the work for the current year, are:—Committee of direction: C. E. Davis, General Traffic Superintendent, Canadian National Telegraphs, Toronto. Construction and maintenance, outside plant: E. Kenward, Superintendent of Railway Service, Canadian National Rys., Toronto; J. B. McGregor, Assistant Superintendent of Telegraphs, Canadian National Rys., Battle Creek, Mich. Construction and maintenance, inside plant: Vice Chairman, C. E. Davis. Education and training of telegraph and telephone employees: Vice Chairman, W. E. Bell, Assistant to Superintendent of Telegraphs and Telephones, Canadian National Rys., Montreal. Radio and wire carrier systems: E. Kenward.

Hearing on Express Rates Increase Application.

A hearing on the Express Traffic Association of Canada's application for increases in express rates was held in Ottawa by the Board of Railway Commissioners on Oct. 4. The Association was represented by F. H. Phippen, K.C., General Counsel, and C. N. Ham, Chairman; the Canadian National Rys. Express Department by C. A. Hayes, General Manager; W. C. Muir, Assistant General Manager; T. Waterson, Solicitor; J. G. Swallow, Assistant General Auditor, and J. H. Moore, Superintendent of Equipment and Supplies, and the Dominion Express Co. by T. E. McDonnell, Vice President and General Manager, and W. H. Burr, Traffic Manager. E. P. Mallory, Director, Bureau of Statistics, Canadian National Rys., and E. E. Lloyd, Assistant Comptroller, C.P.R., were also present, to explain statistics as to car mile costs, etc., and numerous boards of trade, trade associations and individual firms were also represented.

F. H. Phippen, K.C., stated that the express companies are operating at an actual out-of-pocket loss, and explained that when the Board last granted them an increase in rates, they had not been given all they asked for. If they had been, they would now be earning a fair return, but no more. He showed, by reference to figures submitted, that the Dominion Express Co. is more nearly paying its way than the Canadian National Rys. Express Department, and said that if the Dominion Express Co.'s requirements were to be the guiding factor, a straight increase of about 4½% would meet the demands of the situation, but that if the Canadian National Rys. Express Department's needs were to be considered, a greater increase would be necessary.

Following an examination of Messrs.

Mallory and Lloyd, by the Chief Commissioner and other members of the Board, as to how express car mile operating costs had been determined on both the Canadian National Rys. and C.P.R., T. Marshall, Manager Traffic Department, Toronto Board of Trade, asked if, as the figures submitted showed that the railways are not receiving cost of service, from the express companies, the express companies intend to increase their payments to the railways. Mr. Phippen replied that such was not intended, and that the application was made on the basis of the railways continuing to receive the same rates as they have been getting for handling express matter. Mr. Phippen stated that he was quite aware of the opinion held by many people that the express companies, as railway subsidiaries, are paying the railways too much, and that he considered it his duty to inform the Board as to what the railways' costs for handling express traffic are.

One statement submitted showed that it cost the Canadian National Rys. 43.93c a car mile to handle express business in 1922, and another showed that it cost the C.P.R. 38.32c. In 1922 it cost the Canadian National Rys. \$10,022,995 to handle 22,815,831 car miles of express traffic at 43.93c a car mile. Express department costs were \$6,513,655, making a total cost of \$16,536,650. Express revenue was \$13,085,941, making the deficit from express operation \$3,450,709 for the year. In 1922 it cost the C.P.R. \$6,753,493 to handle 17,396,943 car miles of express traffic at 38.32c a car mile. Dominion Express Co. costs were \$7,433,671; figuring in a reasonable return on express company property, total costs were \$14,664,705; and gross revenue was \$13,676,420, which means that there would have been a loss of \$988,284 on the year's business if the C.P.R. had been paid by the express company at 38.32c a car mile. In line with Mr. Phippen's statement that the increases sought were not based on any idea of the Dominion Express Co. paying the C.P.R. more, another statement was submitted showing that, with present payments to the C.P.R., the express company should have had, in 1922, \$637,549 more revenue than it had, to meet all expenses and pay a reasonable return on value of its property. This showed that the express company has not been paying the C.P.R. the cost of furnishing the service.

Viewing the Dominion Express Co.'s requirements as the governing factor, three suggestions were submitted to the Board as to how they could be met. These were: 1. A straight 5% increase on all traffic, which would increase revenues by \$661,430 annually, on basis of 1922 results. 2. No change in 1st class rate, 2nd class rate made 80% of 1st class, and commodity rates, except that on cream, advanced 22%. This would increase revenues by \$643,917 annually. 3. 1st class rates per 100 lb. made 2½ times average freight rate, averaged in 50-mile groups, preserving existing minimum rates; 2nd class rates made 80% of 1st class, and commodity rates, other than on cream, increased 10%. This would increase yearly revenues by \$666,156. The proposition of co-relating express rates with standard freight rates has been favorably considered by the Board in the past, but never adopted. It is regarded favorably by the express companies.

The proceedings on Oct. 4 were restricted to hearing the express companies' representatives and explanation of fig-

ures submitted. The testimony has been printed and circulated throughout the country, and hearings by the Board at important points will follow. The final argument will likely be heard in Ottawa.

Among the Express Companies.

A. J. Courtice, agent, Express Department, Canadian National Rys., Brockville, Ont., died there suddenly, Oct. 3, aged 50.

R. C. Mellish, heretofore travelling agent, Express Department, Canadian National Rys., Stratford, Ont., has been appointed travelling agent, London, Ont., vice B. S. Murray, retired on pension fund.

Canadian National Rys. Express Department has closed the following offices: East Selkirk, St. Norbert and Scanterbury, Man.; Alberta Beach, Alta. The name of the office at Otter Lake, Ont., has been changed to Holmur.

The National Dairy Council of Canada applied to the Board of Railway Commissioners for an order requiring that ice cream mix, and bulk evaporated milk, be carried by express under commodity cream tariffs. The matter was heard by the Board at Ottawa, April 17, and an order was issued Oct. 5, refusing the application.

Benjamin S. Murray, travelling agent, Express Department, Canadian National Rys., London, Ont., retired on the pension fund, at the end of September, after having spent practically his whole business life in express service. He was presented with \$200 and an illuminated address by the local staff.

The Canadian National Rys. have put up a temporary building on Richmond St., Montreal, for handling fruit by its Express Department, which has been done heretofore at Point St. Charles. The building is 320 x 30 ft., and 16 ft. high, and is approached by 2 new tracks approximately 1,000 ft. long.

The Board of Railway Commissioners has dismissed the complaint of L. Perrin & Co., of Vancouver, B.C., with regard to express rates on crabs, in ice, from Vancouver to Fort William, Toronto and Hamilton, Ont. The complainants claimed that crabs should take the same special rates as fish. A summary of the judgment is given under "Traffic Orders by the Board of Railway Commissioners," on an earlier page of this issue.

Complaints by Plunkett & Savage of Calgary, Alta., and Scott National Ltd. of Medicine Hat, Alta., with regard to express rates on fresh vegetables from points of production in Alberta and British Columbia, were heard by the Board of Railway Commissioners at Calgary, July 10, and the Board passed an order Oct. 5, dismissing the complaints. The order, and summary of the judgment, are published under "Traffic Orders by Board of Railway Commissioners" on an earlier page of this issue.

The Canadian National Rys. Express Department applied to the Supreme Court of Ontario, Oct. 8, to be relieved of two packets of money, one of \$7,000 and the other of \$375, consigned to the Home Bank by Fidelity Trust Co., Buffalo, N.Y. The money was shipped just prior to the bank's suspension of payment, and was in the company's hands when payment was stopped. It was ordered that the money be paid into court, after the company's charges of 50c and the costs of the application, fixed at \$30, had been deducted, until the trial of the Fidelity Trust Co.'s action to determine the ownership.

Electric Railway Department

Canadian Electric Railway Association Meeting at Atlantic City.

Officials of several electric railways which are members of the Canadian Electric Railway Association, and some representatives of associate members, who attended the American Electric Railway Association's annual meeting at Atlantic City, held a meeting there on Oct. 10, at which, in the absence of both the President, H. H. Couzens, General Manager, Toronto Transportation Commission, who had not then returned from England, and the Vice President, D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., who was unable to attend, the past President, Major F. D. Burpee, Manager, Ottawa Electric Ry., presided. After several routine matters had been dealt with, Major Burpee invited the Association to hold its next annual meeting in Ottawa, and it was decided to recommend to the executive committee that the invitation be accepted. It was decided to hold a general meeting of the Association each year during, and at the same place as, the American Electric Railway Association's annual meeting. The Association's Secretary will act each year as the Association's representative on the American Electric Railway Association's committee on co-operation for state and sectional associations.

The question of motor bus and truck competition was brought up by Major Burpee, who said that the committee on this matter had collected considerable data and would meet at an early date. Through the instrumentality of H. E. Weyman, Manager, Levis County Ry., C. D. Cass, General Manager, Waterloo, Cedar Falls & Northern Ry., Waterloo, Iowa, who is chairman, American Electric Railway Association committee on uniform motor vehicle regulatory laws, addressed the meeting, saying that he would be very glad indeed to be of any help to the Association or its member companies in this matter. As chairman of the committee which handled the subject for the A.E.R.A., both last year and this year, he felt that possibly he was in a position to mention the various points with which Canadian electric railways would have to contend in getting legislation dealing with motor bus operation. His committee had drafted what he considered an ideal act, and that if such could be adopted, without any changes, in Canada, motor buses would be under proper legislation. An act passed last winter in Ohio was modelled after the one drawn up by his committee. A few of the things with which his committee had to contend in dealing with the Ohio Government were cited. Great hesitation on behalf of the farmers in assenting to the adoption of the act was one of the first things with which they had to contend. Another point to which exception was taken was the provision in sec. 4 that it is unlawful for any motor carrier to operate or furnish service within the state without first having obtained from the Railroad Commission a certificate declaring that public convenience and necessity require such operation. In Ohio the word "necessity" was omitted after considerable discussion, but, with this exception, the act had practically been passed intact. He mentioned that it was of considerable importance not to have the word "necessity" omitted,

as certain public commissions might not take the same meaning from the word "convenience" as was desirable from the standpoint of railway companies. He strongly advocated the passing of legislation to compel all motor bus companies and owners to forward a return to the government outlining their financial position, or a statement similar to that now furnished by railway companies. The act drafted by his committee provides for certain records being forwarded to the commission under whose jurisdiction the buses will operate. He felt, however,

in relation to the damage done to pavements, but so far, no way has been determined whereby this could be put into effect; the principle, however, is, he considered, sound. He pointed out that the basic principle of the act as drawn up by his committee is the ton-mile tax, the rate being changed to suit conditions. The theory that the ton mile basis is not sound is, he said, incorrect, as it can be adopted very easily. He felt that the board which regulates the operation of buses must regulate regularity of schedule. If short haul business is taken from the railways, then fares must be increased to meet the conditions which will be bound to develop. He then mentioned the conditions existing in California, where \$50,000,000 has been spent on roads, 80% of which are now worn out, and the bonds have not yet been retired. He thought the taxpayer should be protected, and he did not see any reason why the taxpayer should pay for the construction and maintenance of roads to be used for making money for others who were in all probability living outside the district.

J. P. Hudson, Montreal & Southern Counties Ry., and H. E. Weyman, Levis County Ry., outlined conditions in the Province of Quebec, and mentioned what has been done. Mr. Weyman said that the Quebec Government is contemplating passing an act to regulate the operation of motor buses, and he felt that Mr. Cass' address would be of great value to them in assisting the Government in drafting a bill. He added that a meeting will be held shortly in Montreal to go into the question of drawing a bill, at which there would be representatives of the Quebec Government, the steam and electric roads interested, Canadian Electric Railway Association, and the Canadian Railway Association. It was decided that D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., represent the C.E.R.A. at the meeting, and Major Burpee suggested that I. S. Fairty, Solicitor, Toronto Transportation Commission, be added to the motor truck and bus committee.

London Street Railway Purchase Negotiations.

The negotiations which have been in progress for some time between Sir Adam Beck, acting for London City Council, and the London Street Ry. Co., to fix a price at which the company's property could be bought by the city, were reported on Oct. 15 to be nearing completion, and it was said that R. G. Ivey, Vice President of the company would meet Sir Adam in connection with the matter. It is said that a price, somewhat under \$1,000,000, has been suggested by Sir Adam, that the company claims it has expended \$300,000 on the property since the Bunnell valuation was made, and that there is a comparatively small difference between the total figures mentioned by the two parties.

The Montreal Tramways Co. has ordered 2 self-contained travelling grate stokers, for use in conjunction with two 12,000 h.p. Babcock & Wilcox boilers.

Canadian Electric Railway Association.

Honorary President: Major General Sir John M. Gibson, K.C.M.G., M.A., LL.B., LL.D., K.C., director, Dominion Power & Transmission Co.

Honorary Vice President: Acton Burrows, Proprietor, Canadian Railway and Marine World.

Honorary Advisory Council: Thos. Ahearn, President, Ottawa Electric Ry.; F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario; Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.; Geo. Kidd, President, British Columbia Electric Ry.

President: H. H. Couzens, General Manager, Toronto Transportation Commission.

Vice President: D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.

Treasurer: E. P. Coleman, General Manager, Dominion Power & Transmission Co.

Executive Committee: The President, the Vice President, the immediate Past President (Major F. D. Burpee, Manager and director, Ottawa Electric Ry.), the Treasurer, and G. Gordon Gale, Vice President and General Manager, Hill Electric Co.; W. S. Hart, Treasurer, Quebec Railway, Light, Heat & Power Co., and Vice President, Three Rivers Traction Co.; D. W. Houston, Superintendent, Regina Municipal Ry.; C. B. King, Manager, London Street Ry.; M. W. Kirkwood, General Manager, Grand River Ry. and Lake Erie & Northern Ry.; H. K. McLean, Superintendent of Transportation, New Brunswick Power Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; W. R. Robertson, General Superintendent of Railways, Hydro Electric Power Commission of Ontario; H. E. Weyman, Manager, Levis County Ry.; C. L. Wilson, Superintendent, Hydro Electric Ry., Toronto & York District.

Auditor: Lt. Col. G. C. Royce.

Secretary: Eustace Smith, Jr., Executive Assistant, Toronto Transportation Commission, 35 Yonge St., Toronto.

Official Organ: Canadian Railway and Marine World, Toronto.

that were all motor bus companies and owners required to put a proper accounting system into effect, a large majority would soon find that they were operating at a deficit. He cited certain instances of this, where a man buys a bus, operates it, and say, takes in \$15 a day; his expenses for gas, oil, etc., being \$10, he then considers that he has a net profit of \$5. Of course, this is not the case, as nothing has been allowed for depreciation and other charges, which would be looked after properly were an authorized system of accounting adopted. He thought that power should be lodged in the regulating body to set up a system of accounting for the use of motor bus companies to provide adequate depreciation systems. He considered the principle of the ton-mile tax sound, and that it should be used wherever possible. He felt, however, that a tax should be levied

Car Conversion, Toronto Transportation Commission.

Among the equipment taken over from the Toronto Railway Co. by the City of Toronto for operation by the Toronto Transportation Commission were a number of double truck cars arranged for the entry of passengers by the rear door, the fare being paid on entry, and with exit at either front or rear—the commonly accepted standard type of p.a.y.e. cars. The new cars obtained by the Commission, all of which have been described in Canadian Railway and Marine World, were designed with the entrance door at the front, and the exit at the side, near the center of the car, with the exception

mission to decide to convert the majority of the 350 p.a.y.e. cars into front entrance and rear exit cars like the one illustrated. The remaining cars will be used for making a number of 2-car trains, one of which is now being experimented with. The trains will be permanently connected, the front car to retain 4 motors and the rear 2, these to drive through the leading truck. Of the cars to be converted for front entrance operation, some will be equipped with line switches, and also with automatic couplers, so that trailers may be drawn. The number of cars to be converted into cars similar to the one de-

best advantage. The experiments with the converted car illustrated herewith have demonstrated that, in addition to the increased capacity, large savings in loading and unloading time are accomplished with the front entrance and rear exit as compared with the original arrangement. At the time of writing (Oct. 20), 45 p.a.y.e. cars have been converted into front entrance rear exit cars, and work on further conversions is proceeding.

Ontario Hydro Electric Railways, Toronto & York District, Work.

Metropolitan Division.—The following works have been completed recently on the Metropolitan Division: Construction of passing sidings at miles 0.66, 6.29, 6.98, 8.97 and 12.3 north of Toronto. These sidings are each 700 ft. long and the turnouts are equipped with no. 9 frogs. The work was done by railway forces. Installation of about 6 miles of additional c.m. cable between Thornhill, mile 6.73 north of Toronto, and Bond Lake, mile 13.96 north of Toronto, to improve voltage regulation on the trolley line. Construction of temporary sidings for contractors on provincial highway work between Thornhill and Bond Lake. Construction of a substation 2½ miles south of Jackson's Point, mile 47.38 north of Toronto. Installation of Nachod block signal system between Toronto and mile 4.78 north. Full details of this signal installation were given in Canadian Railway and Marine World for September.

Mimico Division Terminal Station.—As stated in Canadian Railway and Marine World for October, the Ontario Hydro Electric Railways will build a terminal station at the Toronto terminus



Converted Car, Toronto Transportation Commission.

of the trailers, in which entrance and exit doors are adjacent to one another, at the center of the car.

In order to obtain uniformity in operation of the motor cars, and at the same time to obtain an increase in the seating capacity of the old cars, the Commission has had one of the p.a.y.e. cars taken over from the Toronto Railway Co. converted into a car with entrance at the front, the converted car being shown in the accompanying illustration. The door arrangement is shown in fig. 1, the exterior view; fig. 2, shows the interior of the converted car, looking toward the rear. In addition to the door alterations, the rear vestibule floor was elevated to the level of the floor in the car body, an extra step at the rear door compensating for the change in floor elevation. The conductor's position is shown in the illustration. The longitudinal seat was extended, around the rear vestibule, to the door opening, and a railing was erected to the right. Passengers who have paid their fare occupy the seat in the rear vestibule, and the side of the car opposite the conductor as far ahead as the railing; passengers occupying seats in front of this pay their fare as they leave the car. The seating capacity was increased by the change from 36 to 43.

The conversion was undertaken by the Commission in the way of an experiment, with the idea in view of altering the majority of the 350 cars of this class taken over from the Toronto Railway Co., if the converted car was found satisfactory in operation. The car was placed in operation on the College St. route on April 12, and has been in that service since, with the exception of a couple of days when it was on exhibit at the Canadian Electric Railway Association annual meeting, and soon after it began operation it became evident that it was a much better transportation medium in its converted form than it was originally. The success met with influenced the Com-

mission to decide to convert the majority of the 350 p.a.y.e. cars into front entrance and rear exit cars like the one illustrated. The remaining cars will be used for making a number of 2-car trains, one of which is now being experimented with. The trains will be permanently connected, the front car to retain 4 motors and the rear 2, these to drive through the leading truck. Of the cars to be converted for front entrance operation, some will be equipped with line switches, and also with automatic couplers, so that trailers may be drawn. The number of cars to be converted into cars similar to the one de-



Converted Car, Toronto Transportation Commission.

of control and door opening mechanism to determine which will be the most suitable for the 2-car trains.

The decision to convert the p.a.y.e. cars was arrived at because the Commission has 350 new steel motor cars with front entrance and side exit, and 225 new steel trailers, and with present schedules and distribution of cars to routes, it is not possible to work in p.a.y.e. cars to the

of the Mimico Division, which extends from Toronto to Port Credit, 8.36 miles. The station will be adjacent to the loop at the western terminus of the Toronto Transportation Commission's Lake Shore Road line, near the Humber River and Jane St., and just south of the Toronto-Hamilton highway. The station will be of frame, 30 x 50 ft., and one story high. It will be divided as follows: general

waiting room, 30 x 38 ft., in center of building; offices for Division Superintendent and staff, separated from each other and from general waiting room by wood partitions, in east end of building; waiting room for local line passengers and one for through passengers, separated from each other and from general waiting room by lattice work partitions, in west end of building. Gates will open from the general waiting room into the two waiting rooms last mentioned. Passengers will pay their fares on passing through these gates; when cars arrive and discharge their passengers, the outgoing passengers who have paid their fares at the gates inside the station will pass through doors at the west side of the station and board the cars. The station will be served by two tracks. The north one will be through, movements thereon east of the station being confined, however, to cars going to, or coming from, the Mimico Division shops, which are a short distance east of the station's location. The south track, a spur off the north track, will come to a dead end just west of the station. Between the two tracks, and south of the south track, west of the station, will be 2 concrete platforms, 120 ft. long and 8 ft. wide, covered by timber umbrella shelters, with Spanish tile roofing. Outgoing passengers who have paid their fares in the station will not be allowed through the doors at the west side of it, to board the cars, until the incoming passengers are clear of the platforms. The station and platforms will be surrounded by a high picket fence, in colonial style, arranged so that all possibility of people getting through to board cars without paying their fares will be obviated. The station will be built on reclaimed land owned by the Toronto Harbor Commission, which will charge the railway management a rental of \$1 a year. Approval of the plans was given by the Harbor Commission and Toronto city authorities early in October. Construction will be by contract and under the supervision of C. L. Wilson, Assistant Manager, Toronto and York District, Ontario Hydro Electric Railways.

Mimico Division Power Station.—A power station is being built at mile 6 from Toronto, on the Mimico Division. It will be 16 x 32 ft., of galvanized iron, and will house a 500 k.w. rotary converter, and transformers and switching apparatus, to take a.c. current from the Hydro Electric Power Commission of Ontario's feeder line, and turn out d.c. current for railway use. It will supply power to the part of the Mimico Division west of New Toronto, mile 3.5 from Toronto. With the better power conditions which will follow the cutting in of this station, a faster service will be given and schedules will be maintained. Construction of the building and installation of the equipment is being done by railway forces, and it is expected that it will be in operation by Dec. 1.

Referring to the order for 10 one-man cars recently given by Quebec Ry., Light & Power Co. to the Ottawa Car Manufacturing Co., which were described in Canadian Railway and Marine World for October, we are officially advised that the railway has decided to change them from double end to single end cars.

Quebec Ry., Light & Power Co. has bought 10 double end single truck cars, 28½ ft. long, with seating capacity for 32 passengers, from Eastern Massachusetts Ry., which were built by J. G. Brill Co. in 1920.

Toronto Transportation Commission's Two-Car Trains.

A preliminary description of a 2-car train which the Toronto Transportation Commission is experimenting with was given in Canadian Railway and Marine World for August, pg. 402. An illustration of the train is given herewith. This equipment is not operated as a motor car and trailer, but consists of 2 motorized units coupled together, and operated from controls in the leading car. The arrangement is similar to that of the 2-car units operated by Montreal Tramways Co. Both cars are of the p.a.y.e. type. The leading car's seating capacity is unchanged, remaining at 37, there being longitudinal seats on each side accommodating 18 passengers, and one seat in the front vestibule when the heating stove is out. The seating capacity of the rear car, however was increased from 37 to 50, by removing part of the longitudinal seat on the door side, and replacing it by transverse seats accommodating 12 passengers, the remaining part of the longitudinal seat accommodating 8 passengers, and by carrying the longitudinal seat on the devil-strip side around the rear vestibule, providing accommodation for 30 passengers. Both cars are 44 ft. 5 in. long, and are connected by Tomlinson automatic couplers of the type used between the Commission's new motor cars

two motors were left on the second car, these driving through the leading trucks. A K6 controller, altered somewhat to permit of control of the two cars, is used on the leading car, and the wires between the cars are carried in a hose jumper. The operation of motors and air brakes on both cars is controlled by the motorman on the leading unit, and, while the cars are in regular service, power is collected through the trolley pole on the leading car, the pole on the second car being down. The second car is, however, equipped so as to be able to operate as an independent unit, under its own power, in yards, shops, etc. Operation of the folding doors on both cars is interlocked with the controller on the first car, as on the Commission's new motor cars and trailers. The automatic feature of the brake system ensures prompt automatic application of the brakes on each unit in case of a break-in-two.

As stated in our August issue, this 2-car train was made of cars taken over from the Toronto Railway Co., and the Commission is testing it thoroughly before deciding how many of such trains it will place in service. This decision will determine how many of the 350 p.a.y.e. cars on hand will be converted into pay as you leave cars, and how



Two-Car Train, Toronto Transportation Commission.

and trailers, ensuring absence of jolting in operation. The door arrangement of both units is such that passengers enter the leading car by the left half of the rear folding door, and leave by the right half, and also by the sliding door in the front vestibule, while they enter the second car by the right half of the folding double door at the front vestibule, and leave it by the left half of that door. All doors have "Entrance" or "Exit" painted over them. The conductor of the leading car is located in the rear vestibule, as when the car operated as a single unit in p.a.y.e. service, and the conductor of the second car is stationed in the front vestibule, facing the doors. A curved railing from the center of the door opening deflects the stream of entering passengers past the conductor's farebox.

The second car has an emergency door at the rear, on the same side as the front doors. Normally, a part of the longitudinal seat blocks this door, which is held closed by a pin, operated by air pressure, and a spring latch attached to the seat. In case of emergency, the conductor on either car, or the motorman on the leading car, can release the pin which holds the door. By lifting the section of seat in front of the door the spring latch is released, and the passengers may then leave by the emergency door.

The complete motor equipment has been left on the leading car, but only

many into 2-car trains. The present train was first placed in operation on the Bathurst St. run, but at the time of writing (Oct. 20), is on the Avenue Road run.

Toronto Suburban Railway City Lines Purchase Negotiations.

Canadian Railway and Marine World for October gave particulars of the draft agreement providing for the acquisition of the Toronto Suburban Ry.'s lines in Toronto by the city, and it was then expected that the agreement would be signed very soon. Since then, several obstacles have cropped up, and the outlook now is that no arrangement for the disposal of the railway's city lines, and those to Weston and Lambton, northwest and west of the city, respectively, will be arrived at for some time. There are four parties concerned—the Canadian National Rys., which operates Toronto Suburban Ry., the City of Toronto, York Township, and the Toronto Transportation Commission. One of the matters in dispute is the provision of a subway where the Toronto Suburban line crosses Weston Road; the draft agreement provided that the city raise the grade of the road at that point, and that the railway provide the subway. While the draft agreement provided for acquisition by the city of the Lambton section, which extends along Dundas St. from the west city limits west to and including the loop at Lambton, 1.34 miles, and while

The Toronto Transportation Commission's Activities.

it was understood that the township would reimburse the city for the purchase of this line and its rehabilitation, the present proposal is that the township buy this portion of the line, and arrange for its operation by the Toronto Transportation Commission. It is stated that Weston Town Council is considering the possibility of buying the portion of the Toronto Suburban line in Weston, and that York Township is further considering the possibility of buying the section of the line from Toronto's north city limits to Weston's south boundary. A meeting was held on Oct. 16 between York Township Council members and Toronto Transportation Commission representatives, but practically no progress was made, beyond the township representatives stating that before the township could take any action at all in the matter, the people would have to be given an opportunity to vote on it. Altogether, it appears that considerable delay is going to be experienced before the matter is satisfactorily disposed of, and that the Toronto Suburban lines within the city and immediately adjacent thereto will not be under Toronto Transportation Commission control for some time. It may be added that the impression prevails that Toronto's mayor, who wanted the city to take over all the Toronto Suburban's lines, including the one from Lambton to Guelph, is not endeavoring to expedite a settlement.

Hamilton St. Ry. Tickets Forged.

The Hamilton Street Ry. has for some time past been the victim of forged tickets dropped into the fare boxes by passengers. As the result of an investigation, W. A. Walton, a former employe in the company's office, and Geo. Beckerson, also formerly in the company's service, were arrested Sept. 25, charged with forging tickets, and on the following day were remanded for eight days, being allowed out on bail of \$5,000 each. The men, who had been under suspicion, were seen to drive up to a house in the east end of Hamilton in a motor car, and on getting out, Walton sold a number of sheets of tickets at 50c each, to a police agent, the marked money and 27 additional sheets of tickets being found on him subsequently, while 10 sheets of tickets were found on Beckerson, and another 100 sheets were found in the car. The men were placed under arrest, and when searched at the police station, evidence was found showing that they were concerned in an extensive business of printing and circulating forged street car tickets. A search of Beckerson's house resulted in the discovery of 1,800 sheets of tickets in a parcel hidden in a clothes closet. Each sheet contained 20 tickets, which were, as stated above, sold at 50 cents a sheet, while the company sells 5 tickets for 25c. The tickets were apparently printed in Detroit, the printer there securing for the accused men machines for numbering the tickets at a cost of \$190. The contract with the printer was stated to call for 10,000 sheets of tickets at a cost of \$125, receipts for these two amounts being among the papers found. The Detroit police were informed, and searched the Capitol Printing Co.'s premises, where they were given the plates used in printing the tickets and about 8,000 sheets of printed tickets. It is stated that Walton represented himself as an officer of the Hamilton Street Ry., and that he gave an order for 50,000 sheets of tickets. The two men were committed for trial.

Parliament St. Track Extension.—As stated in a preceding issue, residents on and near Parliament St., in the east part of the city, petitioned the Commission for an extension of the Parliament St. line from its terminus near Wellesley St., to the Prince Edward viaduct, which carries Bloor St., or a continuation of it, over the Don River. The Commission undertook to build the extension if a petition was presented, and if the petitioners were willing to see the Winchester St. line closed as a condition of the Parliament St. extension being built. The petition was secured and the Commission proceeded to build the extension. At the time of writing (Oct. 16), the tracks are laid on Parliament St. from Wellesley St. to the viaduct, the paving is completed, and construction of a loop will proceed, on land secured some months ago by the Commission, at Parliament St. and the viaduct road, as soon as the city's consent is secured. There is an agitation for a continuation of the Winchester St. service, on Winchester St., for about two blocks east of Parliament St., and providing transportation to and from the Toronto Zoo, chiefly, and at the time of writing the disposition of the Winchester St. line has not been decided.

Other Track Work.—In addition to current maintenance, and the Parliament St. track extension, which involved the construction of 0.555 single track mile of double track, of 122-C-G construction, the line on Parliament St., between Winchester and Wellesley Sts., 0.130 mile, making 0.260 single track mile of track, is being completely rehabilitated. An additional curve is being put in on Lansdowne Ave., at the Lansdowne car house, to furnish an additional entrance; a large piece of special track work is being installed at the intersection of Richmond and Yonge Sts., and a spur for the Commission's cash car is being built on Front St., at the head office building. The cash car is used to bring conductors' proceeds from the divisional car houses to the head office, and to take tickets to the car houses, etc. The spur will enable the car to be placed in a convenient position in relation to the cash office in the head office building.

The Roncesvalles car house construction is nearing completion, and at the time of writing (Oct. 16), it is expected that it will be in operation by Nov. 1. This building, which was described fully in a preceding issue of Canadian Railway and Marine World, is very similar to the Eglinton car house, placed in operation late in 1922, and is thoroughly modern in every respect.

Hillcrest repair shops being built at the corner of Bathurst St. and Davenport Road are nearing completion, and the official expectation is that they will be in operation by the end of this year. A contract for fencing the property was let recently to C. F. Till, Toronto. A complete list of the machinery to be installed was given in a preceding issue.

Auxiliary Buildings for Repair Shops.—Construction on the office building, garage, frog shop, and sand, salt and coal storage building, on the new repair shop property at Bathurst St. and Davenport Road, has been commenced by the contractors, Sullivan & Fried, and good progress is being made. The office building at the Russell car house property, the contract for which was given to Witchall & Sons, Toronto, has also been

started, and the expectation is that it will be completed by the end of this year.

Additions to Bus Fleet.—The Commission has bought 4 single-deck gasoline buses from Fifth Avenue Coach Co., through Packard Ontario Motor Co., Toronto. They are equipped with Knight engines, and the capacity of each is 29 passengers. They will be allocated to the different bus routes throughout the city.

Sale of Cars.—The 129 cars, part of the lot taken over from the Toronto Ry. Co., mentioned in Canadian Railway and Marine World for October as being for sale by tender, were bought by Don M. Campbell, Preston, Ont., who is having the majority of them broken up at the Commission's Eglinton car house yard, where they were stored previous to sale.

Toronto Suburban Ry. City Lines.—The agreement providing for the acquisition by the City of Toronto of the Toronto Suburban's city lines not having been consummated, the Commission has not, of course, been in a position to make a start on rehabilitating them. In addition to the Toronto Suburban lines within the city, the Commission expects to operate also the Toronto Suburban line to Lambton, which extends for about a mile beyond the western city limits. At present, residents of the area served by this line have to pay a 5c fare to the Toronto Suburban to get to the corner of Keele and Dundas Sts., in west Toronto, and the Commission's fare of from 6c to 7c to get to the center of the city. The Commission, we are advised, calculates that a 3c fare to the corner of Keele and Dundas Sts. will compensate for the acquisition, rehabilitation and operating costs of the city limit-Lambton line, which would mean that residents of the area could get to business in downtown Toronto for 10c, instead of 12c as at present.

Motor Bus Owner's Conviction Quashed.

—L. Stafoff, Hamilton, Ont., who was fined \$10 by a Toronto magistrate for having a motor bus for hire for the conveyance of passengers within the city limits without a license, appealed. County Judge Widdifield allowed the appeal on Oct. 13, on the ground that the buses were not being regularly used for hire in the city. He considered that the by-law was ultra vires, if it intended to apply to non-residents and to preclude interurban traffic, even though such traffic would mean an incidental use of the city streets. Stafoff's license had not been renewed by the city, on the ground that the bus traffic would compete with electric railway traffic on the Lake Shore road.

Toronto Railway Award Appealed.

The Toronto City Board of Control, acting on a report from the Corporation Counsel, gave instructions, on Oct. 16, that the award by the majority of the arbitration board, on the amount to be paid by the city to the Toronto Ry. Co. for its property taken over by the city on Sept. 1, 1921, be appealed direct to the Imperial Privy Council. The company has also entered an appeal.

London Street Ry. will, it is reported, appeal against the court of revision's decision to assess its lines at \$7,500 a mile. The assessors increased the assessment from \$5,000 to \$10,000 a mile, but the company appealed and the court of revision cut the increase in half. The city council decided not to appeal.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—Grading on the relocation of the Dunbar St.-Alma Road line, in Vancouver, is in progress, the arrangements for it having been completed between the company, the Vancouver City Council, and the Point Grey Municipal Council. The present line runs on Dunbar St. to 16th Ave., then along that avenue to Crown St., along Crown St. to 10th Ave., and along 10th Ave. to Alma Road, then along Alma Road, a connection being made with the Broadway line. This route was adopted owing to the gradient on Alma Road, between 10th and 16th Avenues. The new route runs about half a block on 16th Ave., in the opposite direction to the present route, thence along a new street to 14th Ave., and diagonally to Alma Road between 12th and 13th Avenues, and thence direct along Alma Road. The new thoroughfare will be 82 ft. wide. At the time of writing (Oct. 11), the new track is expected to be in operation by Oct. 31. The tracks on the old route will be removed. The estimated cost of the work is \$26,000. (June, pg. 450.)

Calgary Municipal Ry.—A press report states that considerable work has been done during this year in welding the rail joints. (Oct., pg. 492.)

Hydro Electric Railways.—Essex District.—An extension of the street railway tracks in the southwestern districts of Windsor and Walkerville, Ont., including the relaying of the pavement on Erie St., will, a press report states, be opened for traffic Nov. 1. (May, pg. 238.)

New Brunswick Power Co.—Considerable progress is reported to have been made with track relaying and repairing on Main St., between Douglas Ave. and Portland St., St. John, but some delay is being experienced in regard to the work on Britain St., owing to slowness in delivery of granite blocks. (Oct., pg. 492.)

The Ottawa Electric Ry. has started work on a building immediately east of its car house, which will consist of a sub-station on Albert St. and a garage on Queen St. The substation will contain a Westinghouse 200 k.v.a. rotary converter. Power will be transmitted from the Middle St. power plant at 11,400 volts and stepped down by three 800 k.v.a. self-cooled transformers. It is expected that the substation, which is part of a plan for the reorganization of the power distribution, will be in operation by January. The garage will be used also for linemen's quarters, and will house the line trucks and motor cars. The estimated cost of the building is about \$40,000.

St. Thomas Municipal Ry.—The St. Thomas, Ont., City Council's street railway committee is reported to have put off until next year the project of extending the line from the end of Ross St. to Pinafore Park. It is stated that an appropriation for the work will be provided in the city estimates for 1924. (July, pg. 353.)

Toronto Eastern Ry.—Rehabilitation of the line, between Bowmanville and Whitby, Ont., is proceeding under the supervision of S. B. Wass, Resident Engineer, and at the time of writing (Oct. 16) the track structure is in first class shape between those points, although none of the overhead construction has been proceeded with. Between Whitby and Pickering, where the line was grad-

ed and structures built, but no rails laid, the grade has been put into good repair and is ready for track laying, which began on Oct. 25, but it is not likely that overhead construction will be done this year. About 85 men are engaged in rehabilitation work.

The Toronto Eastern passes through the Town of Whitby on Mary St. At a meeting between Mr. Wass and members of the Whitby Town Council, in the latter part of September, an agreement was entered into between the railway management and the town, by which, if the town wishes to pave the street, the railway will prepare the strip between the rails, and for 18 in. on each side, and the town will do the paving. This agreement is similar to the one entered into between the management and the Town of Oshawa.

The Toronto Suburban Ry. single track line through the Town of Weston has been moved from the west side of Main St. to the center, and ballasting and surfacing were completed Oct. 9. The town will now proceed with paving the street.

Winnipeg Electric Ry.—Plans for the extension of the Academy Road carline to Kenaston Boulevard, were passed on to the city council recently by the public improvements committee, and approved. Work on the extension was reported to have been started Sept. 25. It starts from Lindsay St., and will consist of a single track to Kenaston Boulevard, connecting with the Tuxedo and Charleswood line, and affording another entry into Assiniboine Park. It is expected to be completed early in November. (Sept., pg. 450.)

Electric Railway Passenger Fares.

Brantford Municipal Ry.—A Brantford press dispatch states that several changes in fares were made on Oct. 13; that the cash fare has been changed from 5c to 6c, with 10 tickets for 50c; that children over 5 years of age, and under 52 in. high, pay half fare, and those over 52 in. full fare, but that 10 tickets will be sold for 25c, irrespective of age, good only during school hours and for children who have a certificate showing them to be bona fide school pupils.

British Columbia Electric Ry.—The Broadview Ratepayers Association applied to the Board of Railway Commissioners for an order to reduce fares on the company's Burnaby Lake line. The matter was heard by the Board at Vancouver on June 29, and an order was issued, Sept. 25, refusing the application. A press report states that the Association has received a copy of a report made by the Board's Chief Traffic Officer, W. E. Campbell, pointing out that the real dispute is as to the spread between Horne Payne, at the city limits, and Crown Ave. The city fare to Horne Payne is 6c. The distance from Horne Payne to Crown Ave. is nearly a mile, and the standard mileage rate for this distance is 3c, which, under the Railway Act, sec. 327, becomes 5c, making the total fare allowed 11c, while the actual fare charged is 10c. Mr. Campbell considers the present spread is justified, and that the applicants have not made out a case that would warrant the Board in ordering any change in the rates.

Quebec Ry., Light & Power Co.—At a meeting of the Quebec City Council, Oct. 5, Ald. Dessereault gave notice that at the next meeting he would move that the city council revoke the privilege granted to the company in regard to an in-

crease of fares, and that the 5c fare be reverted to. The present fare schedule was authorized by a bylaw passed by the city council, Nov. 15, 1919, as follows:—Cash fare, from 5 a.m. until midnight, 7c; cash fare after midnight, 10c; without privilege of transfer. Seventeen tickets to be sold for \$1, and 4 tickets for 25c. Six limited employees' tickets, formerly known as workmen's tickets, to be sold for 25c, good between 6 and 8 a.m., and 5 and 7 p.m., daily except Sundays; all employees in factories, offices, stores, etc., are entitled to use this style of ticket. School children 16 years and under, 10 tickets for 25c. Children, carried in arms with parents, and who do not occupy a seat, travel free; children under 7 years, 3c cash fare or 10 tickets for 25c. This schedule was put in operation Nov. 20, 1919, replacing one which was effective from June 22, 1918, and which it is now sought to have replaced. That schedule is as follows:—Cash fare, 5c; 21 tickets for \$1. Seven workmen's tickets for 25c, good between 6 and 8 a.m., and 5 and 7 p.m., daily except Sundays; school children's tickets, 10 for 25c, good for children attending school, 14 years of age and under. Children carried in arms with parents and who do not occupy a seat, travel free; children 7 years of age and under, 3c cash fare, or 10 tickets for 25c.

Winnipeg Electric Ry.—The Manitoba Provincial Secretary and Public Utilities Commissioner issued the following ruling, Sept. 27, on the Assiniboia Municipal Council's application for the restoration by the company of the 15c car fare in effect prior to 1920, when the present 5-zone system, with a 4c fare for each zone, was adopted:—"After having heard and taken into consideration the evidence and other data submitted in this matter, and what was alleged by representative counsel at the hearing, I do not feel warranted in making any order in the premises, and therefore the application for the removal of order 428 of the Public Utilities Commission, passed Aug. 23, 1920, is declined. In arriving at this conclusion, I am impressed with the fact that the municipal assessment rolls disclose that the population, instead of diminishing since 1920 as claimed, has materially increased, making it quite evident that the rates fixed by the Commission in 1920 could not possibly have had the deleterious effect alleged in this regard."

Electric Railway Finance, Meetings, Etc.

Calgary Municipal Ry.—A press report states that the following figures have been submitted to the Calgary, Alta., City Commissioners respecting the railway operations for the 9 months ended Sept. 30, in comparison with those for the same period of 1922:—Revenue, \$622,342.08, against \$655,372.22; deficit, \$11,684.25, against \$18,394.04; passengers carried, 10,701,444, against 10,874,795; car miles, 2,278,156, against 2,175,658.

Cape Breton Electric Co.—

	7 mons. to July		7 mons. to July	
	July, 1923	July, 1922	31, 1923	31, 1922
Gross	\$53,996	\$52,712	\$392,047	\$340,345
Expenses	50,167	39,567	365,808	330,977
Net	3,829	13,145	26,239	9,368
Interest	5,629	5,641	39,557	39,086
Balance	*1,800	7,504	*13,318	*29,718

*Deficit.

Edmonton Radial Ry.—A press report says that the Edmonton, Alta., City Commissioners' report on the operation of the public utilities for the 8 months

ended Aug. 31, shows a net surplus of \$124,096.38, compared with \$223,744.35 for the corresponding period of 1922. The Edmonton Radial Ry. had a deficit of \$3,471.35 from Jan. 1 to Aug. 31 this year, against a deficit of \$18,215.17 for the corresponding period of 1922.

London & Port Stanley Ry.—A press report states that the revenue for August was \$89,259.64, and operating expenses \$62,092.03, making a gross income of \$27,167.61. It is reported that during the month 79,468 tons of freight were carried, compared with 3,657 in Aug. 1922, and 33,423 in Aug. 1921.

Moose Jaw Electric Ry.—A press report states that this railway carried 1,634,097 passengers from May 1 to Aug. 31, against 1,623,070 for the same period of 1922; that the revenue for the 8 months ended Aug. 31 was \$7,096.65 less than for the same period of 1922; that the deficit was \$17,559.59, or about \$3,000 more than the same period of 1922; that the company began selling a term pass on May 20, and that, up to Aug. 31, while the number of passengers had increased, the revenue had declined and the deficit increased.

New Brunswick Power Co.—At the annual meeting at St. John, N.B., Oct. 6, the following directors were elected:—E. N. Sanderson, New York, President; M. A. Pooler, St. John, Vice President and General Manager; W. C. Allison, W. S. Fisher, W. E. Golding, J. E. McAvity, A. P. Paterson and R. Sullivan, St. John; L. C. Gerry, Providence, R.I.

Quebec Ry., Light, Heat & Power Co.—A press report states that about 98% of the company's shares have been exchanged for stock in the Quebec Power Co., under the latter company's offer of one of its shares for every four of Q. Ry., L., H. & P. Co., if accepted by Sept. 28. It is reported that G. Parent, K.C., M.P., one of the Quebec Power Co.'s directors, is to be a Q. Ry., L., H. & P. Co. director, and that the latter company will retain its corporate identity for some time.

Oshawa Ry.-Thousand Islands Ry.—The annual meeting of the shareholders of both companies was held at Gananoque, Ont., Sept. 5. The following are the directors:—J. E. Dalrymple, President; H. W. Cooper, Manager; J. H. Valleur, Secretary-Treasurer; J. M. Sparling and J. A. Yates. The General Auditor is J. M. Rosevear. All of the foregoing are Canadian National Rys. officials.

St. Thomas Municipal Ry.—A press report states that the deficit on operation for September was \$703.71, which is said to have been due to expenditure on track repair work. The doing away with car service on Sunday mornings is reported to have reduced operating costs, without lessening the number of passengers carried during the day.

Winnipeg Electric Ry.—

	Aug., 1923	Aug., 1922	31, 1923	31, 1922
Gross	\$386,758	\$399,499	\$3,515,604	\$3,550,671
Expenses	279,820	294,291	2,471,641	2,631,161
Net	106,938	105,248	1,043,963	919,510
Fixed charges	72,006	71,018	599,935	499,719
Surplus	34,932	34,230	444,028	419,791

The August gross earnings from the railway utility decreased \$16,781 from August 1922, due to a decrease in the daily number of passengers; the operating expenses decreased \$9,240. The gross earnings of the electric utility increased \$13,688, and the operating ex-

penses \$8,792. The increase in the earnings was due to the building up and increasing of the light and power load, and the increase in expenses was due to the increased cost of power on account of increased sales. The gross earnings of the gas utility decreased \$9,647, and operating expenses decreased \$13,984, compared with Aug. 1922. The decrease in earnings was due to a reduction in rates, effective June 1, and a general decrease in the gas consumed by all classes. The decrease in expenses was due to a decrease in maintenance and operating costs, on account of better operating conditions, a decrease in the cost of coal, and an increase in the amount received from the sales of by-products.

Mainly About Electric Railway People.

A. Baltzer, heretofore Master Mechanic, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., has been appointed Superintendent of Shops there.

H. H. Couzens, General Manager, Toronto Transportation Commission, and President, Canadian Electric Railway Association, returned to Canada on Oct. 11, after spending a few weeks in England. He was accompanied by Mrs. Couzens, who had been in England for some months. In conversation with press representatives, when asked whether his observation of bus operation in London had led him to look forward to the time when buses will be substituted for street cars in Toronto, he replied substantially as follows:—"No. The bus system in London has improved greatly and is now wonderful, particularly as concerns the co-relation of its operation with the tubes; but climatic conditions make a great difference here, and Toronto is not nearly large enough to make tubes profitable. They are not a possibility for a city of its size. We will stick to surface traction." Mr. Couzens said that the Toronto street car system compares favorably with anything he saw in England, and added that Ontario people should fully appreciate their advantage in having cheap hydro-electric power.

J. Davidson, Deputy Chairman, British Columbia Electric Ry. Co., of London, Eng., and Mrs. Davidson, have been visiting British Columbia.

Budleigh Faraday, who has been appointed Manager, Commercial Department, New Brunswick Power Co., St. John, has had extensive experience in various branches of electric light and power business, including production, transmission, distribution and commercial, and has latterly devoted his time to industrial power development, having been for the last seven years, Division Manager, Southern Canada Power Co., Montreal, and prior to that, was in charge of the Kaministiquia Power Co.'s transmission and distribution systems at Fort William, Ont.

Major-General Sir John M. Gibson, Honorary President, Canadian Electric Railway Association, and a director of the Dominion Power & Transmission Co., and Lady Gibson attended the marriage of their niece, Miss Kathleen Gibson, at Brantford, Ont., Oct. 20.

Geo. C. Graham, Superintendent of Power and Equipment, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., died very suddenly recently, owing to heart failure.

Electric Railway Employees' Wages, Etc.

British Columbia Electric Ry.—The report of the board of conciliation appointed by the Labor Department upon the employees' request for a 10% increase in wages, and certain changes in working conditions, equivalent to wages and working conditions in effect prior to Jan. 1922, has been made. It is signed by all the members, viz.: A. M. Pound, chairman; A. G. McCandless, representing the company, and R. P. Pettipiece, representing the men. The board began its sittings Aug. 27, and after two adjournments, completed its work Sept. 27, having effected a settlement accepted by both parties. The report states that the men's chief arguments in asking for an increase of wages were that they were simply asking for something they had previously; that they could not live on present wages, and that the percentage of increase in wages paid to street railway men in a number of the principal cities in Canada, was higher than the increase in Vancouver. The company contended that the cost of living had decreased about 5% since Nov. 30, 1921, when the 10% reduction was put into effect; that the present was not an opportune time to increase wages, and that the company was paying higher wages than any other street railway in Canada operated by a company. After hearing of the evidence, a conference between the company and its employees was held, but no progress was made towards a settlement, although both sides agreed that the board's award be made on the evidence submitted. The employees' representative withdrew from the deliberations Sept. 24, and on the same day notice was served on the company that the men would strike Sept. 26, failing a settlement in the meantime. The board's deliberations on the question of an award were held over temporarily, it being considered more important to take some action to avert a strike. An all-day session was held Sept. 25, which resulted in the following settlement, which was accepted by both parties:—Motormen and conductors shall receive 3½c an hour increase over schedule in agreement dated Jan. 5, 1922. Other employees who were reduced under the award of Nov. 30, 1921, to receive an increase of 2c an hour. Despatchers to be given an increase of \$5 a month. Sec. 39 of the agreement, regarding spread-over, which provides for the payment of 10c an hour in addition to the regular pay when a run is not completed within 10 hours of the commencement of the first shift, to be amended by substituting 20c for 10c. Conductors making relief on the road to be allowed 5 minutes for taking out fare box and supplies. Except as indicated in these two paragraphs, the agreement dated Jan. 5, 1922, is to remain in force. The new agreement is for one year from Sept. 1, 1923. The company's employees took a vote on the question of accepting the terms of the award or striking, the result of which was announced Oct. 10 as follows:—For acceptance, 907; against, 261; spoiled ballots, 2.

Hull Electric Co.—Canadian Railway and Marine World for July stated that the employees had asked for a revision of the wage schedule which went into effect July, 1922, and under which conductors and motormen's maximum pay was 44c an hour. They also asked for an 8-hour day. We are officially advised that the management consented to an

increase of 1c an hour, but not to any change in working hours.

London & Port Stanley Ry.—A question was asked at a meeting of the London, Ont., Railway Commission, Oct. 8, regarding the revision of the employees' wage schedule. J. E. Richards, Manager and Treasurer, stated that he had not been able to prepare a report on the matter, which was therefore laid over until the next meeting.

Ottawa Electric Railway Franchise Negotiations.

Ottawa City Council's special street railway committee resumed consideration of the question of a new agreement with the Ottawa Electric Ry. Co. on Oct. 1, and at another meeting Oct. 4, when some progress was made. A letter was read from Major Burpee, Manager, giving details of the company's revenues for 1922 and to Aug. 31, 1923, in comparison with those of 1921, which were used as the basis of the Feustal report to the Ottawa City Council in 1922, on the recommendation of which the voters at the municipal election in January decided against buying the line, and against a service at cost franchise. The figures are as follows:—

	1921.	1922.	1923.
Jan.	\$154,427.63	\$160,810.48	\$155,014.00
Feb.	141,543.67	148,474.04	136,777.24
March	157,540.96	158,997.29	161,661.08
April	145,589.95	145,819.62	147,239.26
May	150,408.13	149,657.90	142,714.29
June	153,500.81	148,646.76	144,396.24
July	150,267.30	145,466.66	136,977.81
Aug.	142,715.67	139,865.87	132,890.12
Sept.	158,345.87	156,502.78	
Oct.	148,205.34	146,506.83	
Nov.	150,426.82	143,999.83	
Dec.	168,010.69	159,532.73	

Total.....\$1,820,982.84 \$1,804,280.88

Note:—Decrease in 1922 as compared with 1921 (459,721 passengers), \$16,701.96; decrease for 8 months in 1923 compared with corresponding months of 1922 (840,079 passengers), \$40,068.67.

Further consideration of the matter was adjourned, but it was intimated that it was expected to have a new agreement drafted in time for it to be placed before the voters prior to the next municipal election.

Montreal Tramways Mutual Benefit Association.

The report for the year ended April 30, gives the following summary of the relief work done during the year: Members disabled through sickness or injury, 1,522. Visits made by physicians to disabled members, 529. Consultations given by physicians to disabled members, 8,107. Prescriptions issued, 6,727. Paid for sickness and injury, \$11,094.30. Paid for medicine, \$2,901.74. Paid for pensions, \$2,569. Paid for withdrawals, \$479.02. Paid for death and burial insurance, \$11,383.35.

The percentage of deaths to the total membership for the year was 0.90%, being the same percentage as the previous year. The amount paid in death benefits for the year was \$11,383.35. Since the formation of the association to the end of April, 417 members died, and the association paid out in death and burial benefits \$175,059.64; sickness and injury, \$205,107.60; pensions, \$18,986; withdrawals, \$7,421.27; a total of \$406,574.51. There has been paid in addition \$102,492.33 for medical attendance and medicine. The expenses of management were \$125,644.24. The amount received from members for fees and dues for the same

period was \$289,852.50. The committee gratefully acknowledges receipt from the Montreal Tramways Co. of \$18,493.14, which amount, added to the fees and dues received from members, viz., \$16,313, and the interest received on investment and bank deposits, amounting to \$11,130.53, made the total revenue for the year, \$45,936.67, and expenses being \$44,170.05, left a surplus of \$1,766.62, which was transferred to the reserve fund.

The following are the directors: Lt.-Col. J. E. Hutcheson, General Manager, President; Hon. J. L. Perron, K.C.; D. E. Blair, Superintendent Rolling Stock; A. S. Byrd, Superintendent Power Plant; R. M. Hannaford, acting Chief Engineer and Superintendent of Construction; and H. R. Mallison, assistant to President and Purchasing Agent; representing the company. O. Dufort, E. Lachapelle, E. Meilleur, W. Pageau, H. Potte, R. W. Ponting and C. Tapp, representing the employees. The vacancy caused by the death of A. J. Gadoua, acting Superintendent of Transportation, has not been filled. Patrick Dubee, Secretary-Treasurer of the company, is also the Association's Secretary-Treasurer.

Port Arthur and Fort William Electric Railway Differences.

The Port Arthur, Ont., Public Utilities Commission and the Fort William City Council's public utilities committee met in Port Arthur, Oct. 11, to discuss the operation of the interurban sections of the two lines. Until about a year ago the two railways ran their cars over the interurban section into both Fort William and Port Arthur, but differences having developed, the arrangement was dropped, each railway stopping its cars at the boundary line, where passengers had to change cars. From the time this system came into operation, efforts have been made by citizens of both places to bring about a better understanding. A lengthened discussion on all points of the matter took place on Oct. 11, which resulted in the following resolution being passed:—"That a committee consisting of Chairman M. C. Campbell, Chairman C. E. Chapple, Mayor Edmeston and Mayor Matthews be appointed to go into the whole of the street railway affairs and to draft a working agreement for 1924 or for as long a period as may be decided, the agreement to be retroactive to present date, and that they report to a joint meeting to be held in Fort William, Thursday, Oct. 18." A Port Arthur press dispatch of Oct. 20 stated that an agreement had been reached to start a through service immediately.

Electric Railway Notes.

The Board of Railway Commissioners passed an order on Sept. 20, recommending to the Governor in council, for sanction, the Grand River and the Lake Erie & Northern Rys. general train and interlocking rules.

Winnipeg Electric Ry. has been granted permission by the Manitoba Court of Appeal, to appeal against a decision by the Provincial Secretary and Public Utilities Commissioner respecting the use of joint poles by the railway and the city hydro electric power system, under an agreement made in 1912.

Winnipeg Electric Ry. Co. started operating 2 motor busses on Scotia St., Oct. 1. The route is from Cathedral St.

along Scotia St. to Inkster St., and return, a 9-minute service being given during rush hours and a 15-minute service the rest of the day.

The Brantford, Ont., City Council discussed, on Oct. 8, the abolishing of the Brantford Street Railway Commission, which now operates the Brantford Municipal Ry., and replacing it by the City Council's street railway committee. A motion for the submission of the matter to the ratepayers at the municipal election in December, was placed on the agenda for the next council meeting.

The Waterloo-Wellington Ry., from Kitchener to Bridgeport, Ont., has been taken over by the Kitchener Light Commissioners, on behalf of the City of Kitchener, which was recently authorized to buy it. An improved service has been inaugurated, and plans are being worked out to give a half-hourly service early next year.

Kitchener & Waterloo St. Ry. has ordered, for rehabilitating the Waterloo-Wellington Ry. between Kitchener and Bridgeport, 3,000 cedar ties from Wiarton Lumber Co., Wiarton, Ont.; several carloads of poles from Don M. Campbell, Preston, Ont., and 16,000 lb. of feeder and trolley wire from Canada Wire & Cable Co. No order has been given for rails, as it is intended to use 80 lb. A.S. C.E. rails, in 60 ft. lengths, which were ordered for the Kitchener-Waterloo line and not used.

The hearing of the New Brunswick Power Co.'s application for an injunction against the City of St. John, in regard to the installation of a hydro electric power distribution system in the city, was resumed in the Chancery Court at St. John, Sept. 25, and the arguments, so far as the interference with the plaintiffs' system is concerned, were closed Sept. 27. On Oct. 1, arguments were opened on the city's application for a definition of its rights regarding the poles in the five north end wards, owned by the city and used by the New Brunswick Power Co. in connection with its power distribution system. Judgments are not expected for some time.

Levis County Ry. has been calling attention to the competition of autobuses in the district within which it operates. A press report states that there are nearly 300 autobuses operating on various highways and roads in the province, carrying on an average 30,000 passengers a day, and that there are no regulations governing their standard, routes or fares. The Quebec Government is said to have had the whole question under consideration and to have prepared a bill to be discussed at the Legislature's next session, providing for the bringing of autobus traffic under the Quebec Public Service Commission's control.

Kitchener & Waterloo St. Ry. has ordered 2 one-man single truck, double end operation safety cars from Ottawa Car Manufacturing Co., which will be similar to the 10 ordered from the same company by Quebec Railway, Light & Power Co., and which were described fully in Canadian Railway and Marine World for October, pg. 496. They will have the following dimensions, etc.: Length, 30 ft. 9½ in.; length of platform, 6 ft.; length of body over corner posts, 17 ft. 9½ in.; width over all, 7 ft. 10½ in.; seating capacity, 36. They will be equipped with full safety features, including Westinghouse air brakes and Westinghouse 508A motors. They will have automatic step similar to that operated by the Chicago Ry.

Marine Department

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

B.C. Marine Engineers & Shipbuilders Ltd., Vancouver, B.C., has been given a contract by the Dominion Public Works Department for overhauling and repairing the dredge Fruhling, no. 303 of the British Columbia dredging fleet, for \$15,490 and unit prices.

B.C. Marine Railway Co., Vancouver, B.C., completed repairs on the Dominion Government dredge 303 recently. The steam tugs Shamrock and Storm King have also been overhauled and repaired, as well as the steamships Kangean Rio Azul and Canadian Transporter.

Canadian Vickers Ltd., Montreal, did the following repair work during September at its Maisonneuve plant: Canadian Government dredge 16, opened up machinery for inspection and repairs, and sundry owner's repairs; Marine Department's hopper barge 3, repairs under builder's guarantee, and owner's sundry repairs; Canadian Government Merchant Marine, s.s. Canadian Ranger, 5,752 tons, docked Sept. 22, for survey, underwriters' and owner's repairs, and bottom painting, undocked Sept. 25; Canada Steamship Lines, s.s. Maplebrook, 1,515 tons, docked Sept. 7, for owner's and underwriters' repairs, undocked Sept. 14; s.s. Richelieu, 5,227 tons, docked Sept. 26, for temporary repairs to bottom damage, due to grounding, also owner's repairs, undocked Sept. 28; Imperial Oil Ltd., s.s. Sarnolite, 2,060 tons, deck and engine room repairs and collision damage; barge 6, docked Aug. 30, for survey and temporary repairs, undocked Sept. 1; s.s. Iocolite, 2,060 tons, repairs to bow damage, also to bridge, and sundry owner's repairs; s.s. Imperoyal, 2,253 tons, docked Sept. 20, for survey and shell damage repairs, including 7 new shell plates, 9 shell plates treated, repairs to 7 floors and frames and to 3 oil-tight bulkheads, also owner's sundry repairs; Aube Steamship Co., s.s. Joyland, 1,845 tons, docked Sept. 17, for owner's and underwriters' repairs, undocked Sept. 20; Minto Trading Co., J. W. Norcross, agent, s.s. Kamaris (formerly Mariska), 2,702 tons, docked Aug. 31, cut in two and a 48 ft. new section added, and the ship refitted for lake service, underwriters' repairs, boiler repairs, alterations to derricks and miscellaneous work, undocked Sept. 21; Sir Frederick Becker, steam yacht, Thomas B., 214 tons, boiler and owner's sundry repairs; Ravans & Corrado s.s. Giuseppe, 4,859 tons, assisting surveyors in tank examination; Elder, Dempster & Co., s.s. New Texas, 6,568 tons, tank top calked. The following work was done in the harbor: Anchor-Donaldson Line, s.s. Corinaldo, 6,900 tons, tube expanders and copper pipes repaired; s.s. Concordia, 5,388 tons, voyage repairs; s.s. Coracero, copper pipes repaired; Canada Steamship Lines, s.s. Cataract, 839 tons, valve motion of steering engine readjusted and refitted; s.s. Thunder Bay, 1,870 tons, heating and straightening lugs on hatch coamings, to take hatch strongbacks; s.s. Mapleboro, 1,141 tons, derrick posts repaired; Clarke Steamship Co., s.s. Gaspesia, electric welding on winch stop valve, and other repairs; Eastern Steamship Co., s.s. Judge Hart, straightening damaged rudder and stock, and refitting same; United States Shipping Board, s.s. Aledo, 4,768 tons, installing 12 sets of Kinghorn valves for air pump; s.s. Sin-

astra, 6,052 tons, retubing superheaters and general voyage repairs; Hain Steamship Co., s.s. Tremeadow, 5,302 tons, voyage repairs; Pool Shipping Co., s.s. Wearpool, 4,929 tons, voyage repairs; Granges Oxelosund Traukaktiebolaget, s.s. Mertainen, 4,531 tons, repairing feed and ballast pumps and suction; Kawasaki Dockyard Co., s.s. Washington Maru, 5,864 tons, copper steam pipes renewed; Norwegian-American Line s.s. Topdalsfjord, 4,250 tons, supplying electrical fittings.

Canadian Vickers Ltd., is reported to have despatched from Montreal on Oct. 2, the two sections of the s.s. Kamarisk for the Upper Lakes. Kamarisk is the new name of the s.s. Mariska, particulars

Dominion Marine Association.

Honorary President, A. A. Wright, Vice President and Managing Director, Davie Shipbuilding and Repairing Co., Montreal and Toronto.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Ltd., Montreal.

First Vice President, G. J. Madden, George Hall Coal and Shipping Corporation Ltd., Ogdensburg, N.Y.

Second Vice President, A. E. Mathews, Mathews Steamship Co. Ltd., Toronto.

Executive Committee. The President, First and Second Vice Presidents; and W. E. Burke, Century Coal Co. and Canada Steamship Lines Ltd.; W. Crawford and Yvon Dupre, Sincennes-McNaughton Lines Ltd., Montreal; L. L. Henderson, formerly of Montreal Transportation Co., honorary member; W. J. McCormack, Algoma Central Steamship Lines, Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; C. H. Nicholson, Canada Atlantic Transit Co., and Canadian National Ry. Central Region Car Ferries, Toronto; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Toronto; John Waller, Keystone Transports Ltd., Montreal; Senator L. C. Webster, Webster Steamship Co. Ltd., Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

of which were given in Canadian Railway and Marine World for September, pg. 457. She was placed in the drydock Aug. 31, cut in two, an additional section put in amidships, and the two sections prepared for being towed to the Upper Lakes, where she is being completed.

Cholberg Shipyard, Victoria, B.C.—A Victoria press report of Oct. 12 said the dispute about this yard had been settled, that it had been taken over by C. Cholberg, and that it will be operated on a small scale for building scows, barges, schooners and other timber vessels, and for general repair work.

Collingwood Shipbuilding Co., Kingston, Ont., did the following repair work during September:—Canada Steamship Lines, s.s. Cape Trinity, 2,105 tons, docked Sept. 6 for painting and repairs to rudder and seacocks, undocked Sept. 11; s.s. Cayuga, 2,196 tons, docked Sept. 12 for survey and repairs to wheel, undocked Sept. 13. Glen Steamships Ltd., s.s. Glenarm, 1,564 tons, docked Sept. 17 for repairs to bottom damage, necessitating removal of 20 plates, undocked Oct. 2.

W. C. McKay & Sons, Shelburne, N.S., are reported to have launched on Oct. 10, an auxiliary schooner named Dorothy L. Bell. It is said that she is 95 ft. over all, 21 ft. beam, and 9½ ft. deep, and is equipped with a 55 h.p. Atlantic engine, and a 4 h.p. engine for hauling anchor, shifting sails, etc.

Newfoundland Government Dockyard, St. John's, did the following repair work recently:—s.s. Seal, 608 tons, drydocked for survey, after breaking propeller shaft and losing propeller on Labrador coast; new shaft and propeller supplied and fitted, several new shell plates and sundry engine repairs; s.s. Vesuvio, 5,449 tons, put in to St. John's with steering gear damaged and sundry main engine repairs required, repairs completed in 6 days, and ship proceeded on her voyage; s.s. Daisy, 248 tons, ice damage, 4 shell plates renewed, bilge keels off, faired and refitted, rudder post faired and one new gudgeon fitted, new rudder made and fitted, steering engine bedplate renewed; s.s. Carvalho Araujo, Portuguese cruiser, struck a rock, drydocked for survey, found stem post broken, 5 shell plates torn and buckled, frames fractured and extensive internal damage, permanent repairs done in 10 working days; s.s. Rovburgh, 4,396 tons, loaded with pit props for England, stranded on High Grego Island, towed off by s.s. Clyde, reached St. John's under own steam and drydocked for survey; forward stem broken, 11 shell plates torn and buckled and extensive internal damage to floors and frames, center girder and bulkhead, main engine damaged.

Prince Rupert Drydock and Shipyard, Prince Rupert, B.C.—The two wooden hulls for patrol cruisers for the Marine and Fisheries Department, which are being built at this plant, as mentioned in our last issue, will have the following general dimensions: length over all, 60 ft.; breadth, extreme over planks, 14 ft.; depth, moulded to raised deck, 9 ft. 4 in.; depth, moulded to deck line, 7 ft. 4 in.; load displacement, 41.5 tons; draft, extreme, 6 ft. They will be equipped for a trial speed of 9 knots. The keels will be of fir in one length each, the shoes of gum, planking of fir and frames and floor of oak. They will be built with raised deck, with large deck house containing wheel house and captain's accommodation, finished with teak outside and cedar within, and all hatches, skylights, etc., will be of teak. A stack will be placed just aft of the deck house for ventilation and engine exhaust. The cabin for the Department's inspector will be fitted with fixed berth, dresser, wardrobe, desk and chair, of birch, mahogany finish and white enamel, with hardware nickel plated. A spiral stairway will lead from the main deck to the hall below. The main saloon will be fitted with side settees, upholstered seats and backs, the backs to form upper berths, dining table and buffet. The galley will be equipped with range, sink, dresser and cupboards, and hot water heater for supplying the hot water heating system by which the ships will be heated. The propelling machinery will consist of 60 h.p. Beardmore semi-Diesel engine with 2 cylinders, 7 h.p. auxiliary set, Gardiner engine driving auxiliary air compressor, dynamo and pumps. The crew's quarters will be

fitted with seat berths and drawers each side, with folding pipe berths above, clothes lockers, etc. One ship will carry a lifeboat and the other a 14 ft. dinghy, both handled by davits. The usual deck equipment will be supplied, consisting of anchors, chains, lines, cleats, fairleads, etc., gypsy windlass forward and anchor davit, anchors stores in hawse pipes, and a mast on top of the wheel house.

St. John Drydock & Shipbuilding Co., St. John, N.B.—At the time of writing (Oct. 22), it has been arranged for the company's new drydock at Courtenay Bay, to be opened by the Governor-General, Lord Byng, on Oct. 29, the opening to be preceded by a luncheon. Invitations have been issued to a number of persons particularly interested in shipping and shipbuilding matters, including

the Dominion Minister of Public Works, Mr. King; the leader of the Dominion Opposition, Mr. Meighen; E. W. Beatty, President, C.P.R., and Sir Henry Thornton, Canadian National Rys.

Victoria Machinery Depot., Victoria, B.C.—The United States schooner Annie M. Campbell went into this yard Oct. 11, to have her foremast taken out and a new one stepped, which she had brought down on her deck from Chemainus. The tug Victory is reported to be on the ways having a new stern fitted.

Wallace Shipbuilding & Drydock Co., North Vancouver, B.C., is fitting the s.s. France Maru for grain carrying, and is repairing the s.s. Siam's crankshaft and making other repairs to her necessitated by a collision at San Francisco, Cal. Other ships in the yards for repairs are

Omar, S. N. Castle, Sea Wolf and Cowichan.

Yarrows Ltd., Victoria, B.C., did the following repair work during September:—For Britannia Mining & Smelting Co.: F. S. Quadra, 683 tons, docked for survey, tail shaft drawn, boilers inspected, hull chipped, cleaned and painted; for C.P.R.: M.S. Motor Princess, 700 tons, docked for underwater repairs forward, due to stranding; for Dominion Government: s.s. Newington, 193 tons, general survey; for Furness, Withy & Co.: s.s. Siberian Prince, 5,604 tons, extensive bottom damage repairs, due to stranding; for Grand Trunk Pacific Coast Steamship Co.: s.s. Prince Rupert, 3 new bronze propeller blades; for Pacific Salvage Co.: s.s. Algerine, 592 tons, alterations to feed pipes.

The Inland Water Freight Rates Act and the Lake Grain Shipping Situation.

Further particulars of the threatening outlook created for the Canadian grain trade, and for the country as a whole, by the Inland Water Freight Rates Act, 1923, were given in Canadian Railway and Marine World for October, the act's effects and the developments taking place in the lake grain shipping situation being traced to the point where the members of the U.S. ship owners' association, at a meeting in Cleveland, on Sept. 17, reiterated their intention of keeping out of the Canadian grain trade so long as the Canadian Government persists in trying to compel ship owners to file details of grain rates with the Board of Grain Commissioners—this despite the Government's decision to practically allow ship owners to evade the law by filling, not a copy of tariff, as the act requires, but merely a historical document setting forth details of past shipments.

By Sept. 20 the general public, particularly western farmers, had gained some knowledge of the disastrous situation which threatened to result from the Government's bungling legislation, and daily papers carried numerous reports of representations having been made to the Government urging it to take action to avert that situation. No action was taken, however, beyond a continuation of the attempts to entice U.S. carriers into Canadian trade by promises that the law would not be enforced very severely, and in the meantime lake grain rates exhibited an increasingly evident tendency to rise, so that by Sept. 24 the spot rate from Fort William to Buffalo was $5\frac{1}{4}c$ a bushel, and $5\frac{1}{2}c$ on the following day, while the rate from Duluth was but $2\frac{3}{4}c$, and space out of Duluth for the first half of October was quoted at 3c. Last year there was very seldom a spread of more than a quarter of a cent a bushel between Duluth and Fort William, so that it quickly became evident to the grain trade that the act's operation promised to cost Canadian farmers a lot of money. An influence which tended to prevent grain shippers from bidding rates out of sight was the entrance of several independently-owned U.S. ships, a number of Norwegian oceangoing ships, and a few British tramps, into the Canadian lake grain trade, in the latter part of September. By Sept. 25 the owners of some 25 U.S. ships had signified their intention of employing them in the Canadian grain trade.

On Sept. 27, consequent on a visit a few days previously of F. A. Warren, President, New York Exporters' Association, to Cleveland, where he conferred

with members of the U.S. ship owners' association, a meeting was held in Toronto, which was attended by him, by L. J. Boyd, Chairman, Board of Grain Commissioners; Francis King, Counsel, Dominion Marine Association; H. D. Goulder, General Counsel, U.S. Lake Carriers' Association; Capt. J. B. Foote, Toronto Insurance and Vessel Agency; T. R. Enderby, Operating Manager, Canada Steamship Lines; A. E. Mathews, President, Mathews Steamship Co.; Jas. Richardson, Richardson Grain Co., and numerous U.S. ship owners or their representatives. The object was to try to find some way of allowing U.S. ship owners to enter the Canadian grain trade without sacrificing their avowed policy, which is that their ships shall engage only in the purely competitive business of lake carriage. The meeting was without constructive result, Mr. Boyd making it clear that he was without authority to permit any further evasion of the law than the Government had sanctioned previously. Following this meeting, Mr. Boyd reported on the situation to the Minister of Trade and Commerce, Mr. Low.

Also, on Sept. 27, Premier Bracken, of Manitoba, after having had his attention called repeatedly to the threatening outlook, stated that while the matter was one for action by the Dominion Government, if it did not do something to relieve the situation, Manitoba would have to take steps to protect her own interests. By Sept. 29 it was definitely settled that four U.S. shipping companies, Jenkins Steamship Co., Oakes Co., Snyder Co., and Cleveland Cliff Iron Co., would enter the Canadian grain trade, it being generally understood that they would file statements of charters made, accompanied by a letter of protest, and the entry of their ships promised some material relief.

The whole situation was considered at Dominion cabinet meetings on Sept. 28 and 29, and what may or may not have been a coincidence, was the appearance in daily papers of Sept. 29 and 30 of articles stating that it was likely that legal action would be taken to test the act's validity, on the ground that it is unconstitutional and opposed to public policy, and suggestions were freely advanced by interested parties that perhaps the best way out for the Government would be provided by a court declaring the act ultra vires, issuing an injunction, and shelving it in entirety until after the close of lake navigation.

It was reported on Sept. 30 that the Minister of Trade and Commerce had

telegraphed Manitoba persons who had been urging him to take some action, stating that, in his opinion, with the facilities provided, all but some 25 to 40 million bushels of grain offered could be moved.

Early in October, several factors recognized beforehand by those intimately in touch with the situation as likely to have a favorable effect in avoiding a grain blockade, despite the act's effects, began to make themselves more evident. These were the lateness of the crop, the fact of the grain arriving at Fort William and Port Arthur requiring a great deal more cleaning than usual, thus delaying operations at the terminal elevators, a light export demand, tending to slow up lake shipments, and a conviction among farmers, and a good percentage of grain dealers, that a "bull" market in wheat is due later on, tending to encourage storage of wheat rather than immediate sale, and therefore tending also to slow up lake shipments. The situation during the first half of October was that the tonnage offering at Fort William and Port Arthur was able to take care of the cargoes offering, largely because of the existence of the favorable factors just mentioned. On Oct. 5, the Chairman of the Board of Grain Commissioners expressed himself as hopeful that all grain offering could be handled, and said that he had been assured that 44 U.S. ships would participate. On the same date reports were current that the Dominion Government was considering the abrogation of the coasting law, as a means of trying to encourage U.S. ship owners to participate, but it was noticeable that these reports did not offer any suggestion as to how such action would produce that effect.

Closely following Mr. Boyd's optimistic statement, however, reports became pessimistic again. A prominent broker on Winnipeg Grain Exchange pointed out that the operation of the act was costing the Canadian farmers about \$75,000 a day, on account of rates being higher than last year, and said that while he considered the Fort William-Buffalo rate should be about the same, or perhaps $\frac{1}{4}c$ higher, than the Duluth-Buffalo rate, or about 3c, it was running at about 5c, and that the rate to Georgian Bay ports, which he thought should be about $2\frac{1}{2}c$, was running at about $5\frac{1}{2}c$. On the same date, the Minister of Trade and Commerce received telegrams from Premier Dunning, of Saskatchewan, and the President of Calgary Board of Trade, asking for a termination of the almost unbearable uncertainty surrounding all

branches of the grain trade, and also for assurances that a blockade would be avoided.

E. W. Beatty, President, C.P.R., was reported to have said in Winnipeg, on Oct. 5:—"It is in the national interest that measures should be taken without delay to ensure provision of sufficient shipping. We share the general concern over the delay in effecting a definite settlement. The C.P.R. has facilities to enable it to handle a considerable grain tonnage all-rail to eastern ports, but it is obvious that grain could not move in anything like its present volume if forwarded by the all-rail route."

It was reported on Winnipeg Grain Exchange on Oct. 11 that the U.S.-owned Snyder ships would be withdrawn from the Canadian grain trade, and on Oct. 12 it was reported that the Cleveland Cliff ships would also be withdrawn, the U.S. owners having reconsidered the matter and changed their decision to be parties to the Dominion Government's interference in a purely competitive business. On that date the Fort William rates to Georgian Bay ports were running at about 5½c, to Buffalo 6c, and to Montreal 14c. On Oct. 13 the Cleveland Cliff line owners stated that they were not going to withdraw their ships permanently from the Canadian grain trade, but that they had been transferred to the U.S. ore trade for a time, and added that they had, however, suggested to the Board of Grain Commissioners "certain changes in the regulations, which, if adopted, would help the general situation." Details of these proposed changes were not made public, nor is information available as to whether they were of the nature of those adopted on Oct. 19, as specified further on in this article. By Oct. 18 shippers were bidding a 7c spot rate to Buffalo and proportionately high rates to Georgian Bay ports and Montreal.

Average rates for lake grain carriage in 1922 were as follows:—Fort William-Buffalo, Sept. 2.84c a bushel, Oct. 4.49c, Nov. 4.87c, and Dec. 5.89c; Fort William-Georgian Bay ports, Sept. 3c, Oct. 3.88c, Nov. 5.65c, and Dec. 6.25c; Fort William-Montreal, Sept. 10.4c, Oct. 9.77c, Nov. 11.93c, and Dec. 12.63c. At the time of writing (Oct. 19), 5½c is being bid to Georgian Bay ports, 7c to Buffalo, and 13½c to Montreal.

The Minister of Trade and Commerce went to Fort William shortly after the reported withdrawal of the U.S. ships which had been participating in the Canadian crop movement, and conferred with the Board of Grain Commissioners. On Oct. 19 he addressed the Fort William Canadian Club, and stated that the act had been passed in the interests of western farmers, but he is reported to have admitted that it had not worked out just as it had been hoped. He is also reported to have said that he would consider himself unworthy of the office he holds and derelict in his duty to Canada if he did not pledge himself that there would be no blockade, but the report of his address indicates that he thinks the greatest danger threatening the grain trade and the country is not lack of grain ships on the Great Lakes, but lack of export demand for wheat.

On Oct. 19 the Board of Grain Commissioners authorized a more pronounced evasion of the law than that mentioned in our October issue, by addressing the following statement to all concerned:—"You are hereby notified that the Board of Grain Commissioners is prepared to accept as a compliance with the Inland

Water Freight Rates Act, 1923, sec. 3, either the filing with the Board of tariffs by the ship owner, or the filing by the shippers, before loading, of copies of charters or contracts for space." The Chairman of the Board is reported to have stated that this arrangement was expected to pave the way for entrance of as many U.S. ships as would be required to augment the Canadian fleet in handling this year's crop. According to a Winnipeg press report, this announcement was followed by a drop of 2c in the rate from the head of the lakes to Buffalo, viz., from 7c to 5c.

W. H. McGean, chairman, U.S. ship owners committee, sent the following telegram on Oct. 22, from Cleveland, to the Chairman of the Board of Grain Commissioners: "Mr. Rathbone's circular to vessel managers of Oct. 19 has been received. Has today been considered by the majority of United States managers, who have authorized me to send you the following message: Your notice that you are prepared to accept as compliance with section 3 of the Inland Water Freight Rates Act of 1923, either (a) the filing with the board of tariffs by vessel owners, or (b) the filing by shippers before loading, of copies of charter or contract for space. The vessel owners here represented will decline to file such tariffs. We can have no objection to the filing by the shippers before loading, of copies or contracts for space, as this, so far as the vessel is concerned, restores and preserves our right of contract and places no obligation on the ship; it would, of course, not affect the reasonableness of the rates, because we assume that before the shipper definitely closes his contract with the vessel he has due approval of the Government. With this understanding we see no objection to United States vessels taking Canadian grain as in previous years. Please confirm."

Canadian Pacific Ocean Steamship Services.

The company will close its St. Lawrence navigation season Nov. 23, with the sailing of the s.s. Montrose for Liverpool.

The company's autumn sailing schedule out of Montreal, which was put into effect Oct. 1, shows 22 arrivals and departures from Montreal and Quebec.

The s.s. Empress of Canada will be given a general overhaul preparatory to making a world cruise, and it is stated that new oil burners will be installed.

The C.P.R. has, it is said, cut out Yokohama, Japan, as a port of call for its trans-Pacific steamship service, and will disembark its passengers for Japan at Kobe.

The C.P.R. ocean steamship trans-Atlantic service for 1923-24 will, it is reported, provide for 40 round voyages to St. John, N.B., against 34 for 1922-23. The first vessel to leave St. John for the season will be the s.s. Montclare, on Dec. 7.

Capt. S. Robinson, who was in command of the s.s. Empress of Australia, in Yokohama harbor, during the earthquake, will, a Montreal press report says, command the s.s. Empress of Canada in her round the world cruise starting from New York in January.

"My heart is with the ocean!" cried the poet, rapturously. "You've gone me one better," said the seasick novelist, as he took a firmer grip on the rail.—Flamingo.

Dominion Marine Association's Executive Committee Meeting.

The Dominion Marine Association's executive committee met in Toronto on Oct. 17, those present being: T. R. Enderby, President; H. B. Clark, W. Crawford, G. J. Madden, A. A. Wright, and the Association's Counsel, Francis King, K.C.

Further consideration was given to the situation arising from the Inland Waters Freight Rates Act and the possibility of failure to move the required amount of the large crop. The meeting concurred in a statement already given to the press by its Counsel, as follows:—"That it was expressed as the opinion of the Association's members that they are complying with the law, that their chief interest is in getting the western crop moved, and that they did not wish to do anything which in any way would embarrass the Government. It was agreed that the situation was still very serious, and the hope was expressed that a blockade will not occur." Further than this, no action was taken.

With reference to the Chicago drainage canal, the President reported interviews in Chicago as to the serious intentions there with reference to further withdrawals, and correspondence was read between the Association and the Railways and Canals Department's Chief Engineer and the Under-Secretary of State for External Affairs. The following resolution was adopted unanimously: "That the Association protests in the most emphatic terms against any compromise with the Chicago Sanitary District in its demand for diversion of water from the Great Lakes in excess of the 4,167 c.f.s. authorized by the U.S. Secretary of War in 1912, and urges upon the Canadian Government the need of more active measures than have been apparent to date, with a view to securing from the U.S. Government enforcement of the existing order of the Federal authorities."

Regarding the drinking water regulations, a letter from the Minister of Health was read stating that the regulations are to be complied with by April 1, 1924, and that they had been adopted only after a conference with representatives of the various companies called by the Department. Instructions were given to reaffirm the statement made at previous meetings that members were not aware of any such conference, or of any consultation or notice prior to the publication of the regulations in the Canada Gazette in June 1923, and inquiry is to be made as to the parties notified of, or present at, the conference.

Consideration was given to the recent accidents in the Lachine Canal, and the time lost in repairs, and also to the recent accident in the Welland Canal, and the comparatively prompt and efficient action taken, and the following resolution was adopted to be forwarded to the Railways and Canals Department:—"That the Dominion Marine Association's executive committee believes that considerable unnecessary delay occurred in freeing the Lachine Canal from obstruction on the occasions of recent accidents when the gates of lock 1 were carried away and when the bridge at Ville St. Pierre fell into the canal, and that greater consideration should have been given to the very urgent need of prompt renewal of navigation, particularly under existing circumstances, and further, that the As-

sociation fears that inadequate provision is made at present on this canal for immediate replacement of any other gates that may be damaged. That it is, in the committee's opinion, very desirable that the fullest investigation should be made as to the cause of the collapse of the bridge mentioned, and as to the condition of similar bridges in operation elsewhere, and that the committee deems it to be its duty, in the interests of navigation, to record its views as above and to communicate them to the Railways and Canals Department in the hope that the paramount importance of maintaining a free channel for navigation will be fully recognized and every possible step taken to prevent further delays."

With reference to the Morrisburg Canal improvements, the committee was advised of the Department's determination not to accept the recommendation for the removal of the head lock further down the canal, and of the intention to make minor improvements by excavating on the northern bank above the entrance. The committee unanimously reaffirmed its recommendation for the removal of the lock, and passed a resolution expressing its doubt as to the efficiency of the proposals being adopted, and directed the resolution to be communicated to the Department.

Consideration was given to the improvements proposed in the Belleville-Prince Edward bridge, and the concurrence of the Association in the plans submitted to the Dominion Public Works Department by the Ontario Highways Department, was confirmed. The navigable passage in each draw of the bridge would be reduced to 70 ft. by the cribwork proposed to strengthen the piers, but the sides of the channel would be clear and straight and the walls vertical.

An arrangement which has been summarized in regard to customs clearings at Port Arthur and Fort William whereby ships will no longer require to repeat the operation each time they move from one of the twin ports to the other in loading cargo, was reported.

Consideration was given to the ice-breaking contract for Thunder Bay now re-let for five years, and it was decided to call attention to the need of express provision for the breaking of ice to permit complete access to, and actual berthing of, the ship at her destination. The contract is to be further considered and necessary representations will be made to the Marine Department.

C. H. Nicholson, Manager, Car Ferries, etc., Central Region, Canadian National Rys., who had been acting on the Association's behalf in an effort to affiliate interests on the Pacific coast, reported his inability at present to bring about any arrangement, largely on account of the great distance and the divergence of interests.

The next meeting of the committee was fixed for Ottawa about the middle of November, and it has been arranged that at that time a conference will be held with the Minister of Marine upon his return from the Pacific coast, in which the Association will be supported by the Shipping Federation of Canada representing ocean tonnage, in the request for legislation at the next parliamentary session to amend the Canada Shipping Act by abolishing the requirement for payment of pilotage dues below Montreal.

Consideration was given to conditions in Montreal harbor and to various other matters, including the Association's annual report, increase in membership, etc.

Canadian Government Merchant Marine Operation, Etc.

Officers of Steamships.—The following have been appointed recently: Captains—Canadian Coaster, J. H. Hubley; Canadian Signaller, G. Borland; Canadian Sower, N. Miller; Canadian Warrior, C. Dineen; Sheba, J. Slater. Chief engineers—Canadian Fisher, J. O. Lamoureux; Canadian Leader, J. Davies; Canadian Miller, C. Robertson; Canadian Otter, C. De Cotret; Canadian Ranger, T. Jones; Canadian Runner, W. Samples; Sheba, P. C. Bennett.

Ships Chartered for Great Lakes Service.—The steamships Canadian Adventurer, Canadian Engineer, Canadian Pathfinder, Canadian Sailor, Canadian Signaller, Canadian Sower, Canadian Trader, and Canadian Warrior, are under charter for service in the great lakes grain trade. We were officially advised recently that no decision had been reached with regard to the utilization of any of the other C.G.M.M. ships in that trade.

Winter Services.—The schedule for the winter comprises fortnightly sailings from St. John, N.B., to London and Antwerp, and to Cardiff and Swansea; fortnightly sailings from Halifax, N.S., to St. Kitts, Antigua, Barbadoes, Trinidad and Demerara; triweekly sailings to Bermuda, Bahamas, Jamaica and British Honduras; fortnightly sailings to St. John's, Nfld., and monthly sailings to Australia and New Zealand. From Vancouver, B.C., there will be monthly sailings to Avonmouth, and to Australia and the Orient, and weekly sailings to San Francisco and intermediate ports.

The s.s. Canadian Settler has been sold to Captain Peter Graham of New Glasgow, N.S., and her name will be changed to Portmore. She was built by Tide-water Shipbuilders, Limited, at Three Rivers, Que., in 1919, her dimensions, etc., being: length 331.3 ft., breadth 46.8 ft., depth 22.9 ft.; gross tonnage 3,548, registered tonnage 2,155; horsepower of engines nominal horsepower 231; screw driven. The builder's contract price was \$200 per ton d.w., and the total cost \$1,020,000.

Montreal Sailings.

London and Antwerp service—Canadian Explorer, Nov. 7; Canadian Ranger, Nov. 21.

Cardiff and Swansea service—Canadian Mariner, Nov. 2; Canadian Commander, Nov. 16; Canadian Leader, Nov. 24.

Australia and New Zealand service—Canadian Cruiser, Nov. 24.

Hamilton, Bermuda; Nassau, Bahamas; Kingston, Jamaica; Belize, British Honduras, service—Canadian Fisher, Nov. 9. St. John's, Nfld., via Charlottetown, P.E.I.—Canadian Sapper, Nov. 5 and 21.

St. Kitts, Antigua, Barbados, Trinidad and Demerara service—Canadian Squatter, Nov. 14; Canadian Otter, Nov. 24.

St. John, N.B., Sailings.

London and Antwerp service—Canadian Conqueror, Dec. 5; Canadian Planter, Dec. 19.

Cardiff and Swansea service—Canadian Victor, Dec. 14; Canadian Mariner, Dec. 28.

Halifax Sailings.

Australia and New Zealand service—Canadian Constructor, Dec. 22.

Hamilton, Bermuda; Nassau, Bahamas; Kingston, Jamaica; Belize British Honduras, service—Canadian Forester, Nov. 29; Canadian Fisher, Dec. 20.

St. Kitts, Antigua, Barbados, Trinidad

and Demerara service—Canadian Runner, Dec. 14; Canadian Carrier, Dec. 28.

Vancouver Sailings.

Australasian service—Auckland-Sydney, Canadian Importer, Dec. 10.

United Kingdom service—For Avonmouth, Canadian Prospector, Nov. 20; Canadian Seigneur, Dec. 20.

Vancouver and San Francisco service—Canadian Rover, Nov. 3.

Oriental service—For Kobe-Shanghai, Canadian Freighter, Nov. 15.

Canada's Shipping Interests Before Imperial Shipping Committee.

A London, Eng., cable of Oct. 17 says the Canadian complaints respecting shipping were laid before the economic conferences and were promised full investigation by Sir Halford Mackinder, Chairman, Imperial Shipping Committee. The complaints were:—That insurance rates charged on the St. Lawrence route are excessive, and that the rates charged by British ships on both Canadian and U.S. flour discriminate in favor of New York as against Canadian ports. Hon. G. P. Graham, Minister of Railways and Canals, in presenting the complaints, pointed out that they were of long standing. The Dominion Government had spent millions of dollars in improving the St. Lawrence waterways, but nothing had been done in the way of giving justice to the country regarding marine insurance. The Canadian Government Merchant Marine was carrying its own insurance, and if something was not done to give justice in the matter, an insurance company would probably be established in Canada to insure the St. Lawrence traffic. Regarding flour rates, he claimed that Canadian millers had either to pay a higher ocean freight rate, if they shipped by Montreal, or to give their business to United States railways. He also referred to the steps being taken to promote the shipment of grain from Vancouver via the Panama Canal.

Canal Traffic Statistics.

The Dominion Bureau of Statistics has issued the following summary of canal statistics for August:—

Sault Ste. Marie.—During August 14,353,090 tons of freight passed through the Canadian and U.S. locks, which was an increase over Aug. 1922 of 4,068,335 tons, or 40%. Iron ore shipments totaled 10,484,858 tons, or 93% of the down-bound traffic, with wheat aggregating 9,602,238 bush., other grains 8,664,377 bush., and flour 1,491,900 barrels. Canadian grain through the canals consisted of 5,912,188 bush. of wheat, 2,584,318 of barley, 1,936,132 of oats, 1,545,952 of rye, and 42,048 of flax, all of which was carried in Canadian ships; 9,408,526 bush. going to Canadian ports and 2,612,112 to United States ports.

Welland.—Traffic aggregated 629,902 tons, which was an increase over 1922 of 30%. The largest increase was in bituminous coal downbound, which totaled 129,360 tons, against 16,803 during August 1922. Wheat and corn shipments decreased, but oats and rye increased.

St. Lawrence.—Traffic increased 25%, owing to increases in barley of 31,009 tons, oats of 18,144, rye of 4,066, anthracite coal of 55,136, and bituminous coal of 94,762, while corn decreased 36,547 tons and pulpwood 17,622. Passenger traffic increased by 5,777 passengers.

Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties:—

Nevada-Conqueror-Miramichi Collision.

Held at Montreal, Sept. 6 and 7, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. J. O. Grey and C. Lapierre, as nautical assessors, into the collision between Nevada Shipping Co's s.s. Nevada and the Sincennes-McNaughton Line's steam tug Conqueror, with its tow barge Selkirk, and the scow Miramichi, Aug. 2, in Soulanges Canal, below St. Feriol bridge. The Nevada was bound from Montreal to Port Colborne, light, and in passing through the canal, the tug Conqueror was seen towing the barge Selkirk, and a one blast signal was given by the Conqueror, and answered by one blast, and the course altered to the right, approaching the north bank to about 40 ft. Capt. Chas. Webber, of the Nevada, testified that he did not notice the Selkirk altering her course, but saw that she sheered twice, the second time coming obliquely towards the Nevada, striking her on the port bow, dinging two plates, and causing her to swerve to starboard, and collide with the scow Miramichi, which was tied to the north bank, considerably damaging her. The Nevada was going about half a mile through the water, her engines were stopped, and she was being steered parallel to the bank, and would have cleared the scow safely. Full speed astern was ordered before she collided with the Miramichi. The captain had left the wheelhouse when he saw the Selkirk swerving, leaving an uncertificated second officer in charge without instructions. Side lights were on, but he did not notice if the Selkirk exhibited hers. The Selkirk appeared to be moving at a moderate speed in the middle of the canal. There was no current, no wind and clear weather, and he attributed the damage entirely to the swerving of the Selkirk. L. Leduc, who was in charge of the Selkirk, stated that he left the wheelhouse and went forward, when he saw the Nevada heading for them. Both ships were in the center of the canal when first seen. He gave a one blast signal to indicate he was taking the right side of the canal, and approached the south bank to within 40 ft. He also gave 3 blasts, thus ordering the Nevada to reduce speed. It was stated that the 3 blast signal was not heard on the Nevada. After some other evidence was given, the court adjourned. At a further hearing, evidence along similar lines was given by Capt. D. Beaudet, of the Conqueror, and the second officer of the Nevada. The court considered the evidence very contradictory, that the distance allowed, taking the positions of the ships as described, was scarcely 20 ft., and that for any ship to attempt to meet another with so little margin of space, showed bad judgment, it being hazardous in the extreme, especially when one ship has a tow. The Nevada's second officer had stated that the engines had been stopped for 10 minutes, and her speed through the water previously to that was 1½ miles. If such was the case, the Nevada was not under command, but the statement was contradicted by the entry in the log, which was looked upon with suspicion, on account of erasures and marginal notes. The engines were said to be going slow and a full speed astern order was given before the shock with the scow was felt by the

engineer, who, as a witness, was non-committal. The court considered that the Nevada should not have been in the position she was, and it was evident that she attempted to sail through between the scow and the Selkirk, passing the Conqueror at a distance of from 7 to 10 ft., therefore, in view of the varied statements made by the Nevada's captain, the admission of the second officer with respect to speed, and the position of the wheel which was to starboard, the suspicious entry in the log and its erasures, and the interpretation of the evidence as to the position of the ship, the court concluded that the Nevada was alone responsible for the damage to her port bow and to the barge Miramichi, and found the master, Capt. Charles Webber, in default, but as it was more due to an error of judgment, than to neglect, indifference or carelessness, his certificate was returned to him, and he was censured and reprimanded. The tug Conqueror and her tow Selkirk were absolved from blame.

Canadian Sapper-Chiquimula Collision.

Held at Pictou, N.S., Sept. 15, by Capt. L. A. Demers, Dominion Wreck Commissioner, and Capt. John Grey and C. W. Mason, as nautical assessors, into the collision between the Canadian Government Merchant Marine's s.s. Canadian Sapper, and the United States schooner Chiquimula, in Northumberland Straits, Aug. 15. The court agreed that both ships contributed to the collision, the former through a lookout which can be considered as lacking in thoroughness, not through carelessness or indifference on the part of Capt. Blouin or Second Officer MacDonald, but, as is presumed, through their attention being rivetted on one object, viz: the shore lights. The lookout on the forecandle head was indifferent. The schooner contributed to the collision through her change in course, such change being admissible only in the agony of the moment, and 4 minutes is not considered as being in the agony. Captain Larson, of the schooner, acted wrongly, and is equally to blame for the collision, and the damage resulting. In view of this, the court did not deal with Captain Blouin's certificate, nor that of Second Officer MacDonald, but reprimanded them severely for a poor lookout, and returned their certificates with a warning. Capt. Larson's license was also returned, as it was not within the court's jurisdiction to deal with it, and the matter was placed in the hands of the U.S. authorities to deal with as they may deem fit.

Grounding of s.s. Imperoyal.

Held at Montreal, Sept. 28, into the grounding of Imperial Oil s.s. Imperoyal, at Bicquette reef, off Bic Island, St. Lawrence River, Sept. 17, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. Purvis and A. J. Gilbert, as nautical assessors. L. Beauregard appeared for the owners, and B. J. Kaine, Superintendent of Lights, Quebec District, watched the proceedings for the Marine Department. The pilot was not represented. Capt. A. Geddes, of the Imperoyal, stated that he left Quebec, Sept. 16, outward bound, light, on a speed of 10 knots. The two Kelvin compasses were not acting in accordance with the last adjustment, but frequent observations were taken. Full speed was maintained, though the visibility was not

good, being clear overhead, but somewhat hazy, and objects could be seen 1½ miles distant, and farther at times. He was on deck with the mate and pilot when Bic Island light was seen, and the course was immediately altered, but the ship grounded, or touched. Boats were got ready and soundings taken. A cast of the lead, which was reported as uncertain and unreliable, showing 15 fathoms, had been taken, just before the ship touched. Jules Asselin stated that he had been a pilot for 40 years, and had never appeared at a board of enquiry before. He acknowledged that he erred in not giving sufficient alteration to the course when the light was seen. When passing Green Island, he was in the center between Red and Green Islands, and shaped a course according to his usual practice; there was no wind, it was the last of the ebb, and it being neap tides, therefore he did not allow for its velocity. He could not account for the ship being brought towards Bic Island, except by a miscalculation of the strength of the ebb. The ship struck 2½ miles west of the light. The atmospheric conditions did not warrant a reduction of speed, though the telegraph was at stand by. E. Laprise, lighthouse keeper at Bicquette, stated that he was ill at the time, and had reported to headquarters, but notwithstanding, he had, in company with his two men, paid a visit to the light to remedy a little defect, about 1 a.m., when there was no fog. At about 2.30 a.m., his assistant reported fog, and he ordered the fog signal put into operation. The clock had not been regulated and he did not know if it showed correct time; it may have been 10 minutes out. In its report on the accident, the court mentioned the straightforward statement of occurrences by the captain and pilot; it felt that an undue speed was not maintained, and the steering was watched and was satisfactory, but where the court did not appreciate their conduct was that when the light was seen on the starboard bow, an alteration of only 5 points was made, whereas the situation demanded that the light be brought immediately to bear abeam. The captain trusted to the local knowledge of the pilot, whom he had had with him on various occasions, and had always found trustworthy, and he admitted his error in not starboarding more, and bringing the engines to a stop and sounding immediately. The pilot also admitted his error in starboarding so slightly, in view of the bearing of the light, and felt keenly his first mishap. The court therefore agreed unanimously that both captain and pilot committed grave errors of judgment, but owing to their straightforward statements, and the fact that the captain was highly recommended by his employer, and that it was the pilot's first appearance before a court of enquiry, their certificates were not dealt with, but Capt. Geddes was cautioned that, though he may have a pilot with him, he is not relieved of his responsibilities to suggest and even urge a course which prudence directs. Pilot Jules Asselin was reprimanded severely, and cautioned to be careful in future.

Twickenham Collision With a Pier.

Held at Montreal, Sept. 29, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. Purvis and A. J. Gilbert, as nautical assessors, into the collision of the s.s. Twickenham with the Louise embankment, Quebec harbor,

Sept. 4, damaging her bow and stem, while in charge of a pilot, with 2 tow boats fast to her bow and stem. The court reported that, as was usual and expected, some discrepancies crept up in course of the evidence, especially in that of the master, pilot and third officer. On the whole, however, it did not appear that the ship had been steered properly from the time the ship left anchorage until a few moments before the accident. When in the vicinity of the Louise embankment, with the object of entering the basin, the pilot gave various commands, and when within 100 ft. or more of the end of the pier, and while at slow speed, a cant towards the pier was perceived. A hard to port order was given and obeyed immediately; a tug boat was hauling on the starboard side, another was fastened 100 ft. from the stern, and it was seen that the bow tug hauled at right angles from the ship. It was stated that the captain then ordered full speed astern twice, the last order meaning full movement astern. The pilot stated that he gave that command, and the third officer asserted that the command was given when the ship was within a few feet of the embankment. The contradiction was considered immaterial. The tide was at the end of the ebb and the flood was making, and meantime the St. Charles River was emptying itself into the St. Lawrence, causing the usual eddy at the end of the pier, extending about 100 ft. westward and more. The ship was heading obliquely towards the end

of the pier, and a sheer took place, giving additional strain on the towing hawser, and with the slow speed, and the strength of the eddy, the tow rope parted, and though the engines were put full speed astern, the impact, stem on, was serious enough to damage the stem and both bows. The evidence did not show any negligence or carelessness on anyone's part. The pilot has been in active service for 40 years and has never had an accident; a remarkable record which the court decided to bring to the authorities' attention. He stated that had the towing cable stood the strain, the accident would not have occurred. The question as to whether the oblique direction according to the pilot's version, in view of the state of the tide, was advisable, is doubtful, and the court expressed the opinion that a slight error of judgment was made, and that the ship could have been kept farther away from the influence of the eddy, and headed up for the entrance when it was still water, or with the beginning of the flood, entering the basin with the ship headed westward, and that the pilot acted in good faith, basing his action on past experience. The ship was well manned and equipped, and well steered until she entered the eddy, when she became uncontrollable. The court therefore found Capt. G. E. Huntley blameless for the damages occasioned, but questioned, even though pilotage is not compulsory, his waiving aside the pilot's services after the accident, especially as he did not attach any

blame to the pilot. The tug boats were also exonerated. The pilot, A. Jouvin, erred in judgment, in an excusable manner, in entering the eddy at that stage of the tide, and was therefore cautioned for his future guidance. All others were exonerated and their certificates returned.

North Vancouver Drydock.—Work on the drydock which is being built by Burrard Drydock Co. at North Vancouver, B.C., is proceeding rapidly. One of the pontoons was completed and launched about the end of September, and the building of the others, of which there will be 11, progressed favorably during October. It is anticipated that the first section of the dock will be completed and available for use by the end of the year. This will be about 200 ft. long. The second section of about 300 ft. long will then be proceeded with, and a third section, making a total length of 700 ft., may be added later. An auxiliary pier, 400 ft. long, alongside the dock, where ships can lie waiting their turn in dock, has been completed. The pier, when fully completed, will be about 700 ft. long and 50 ft. wide, and will be built on concrete cylinders, similar to those used in the construction of the Ballantyne pier. It will have a 75-ton sheer leg crane, and a 7-ton portal travelling crane, with a 95-ft. boom, reaching to the center of the dock. Railway tracks will be laid to the end of the pier.

Ships Registered in Canada in July, 1923.

In compiling the following lists of ships registered, steamboats and motor boats operated by engines of less than 10 h.p., are eliminated, as also are sailing ships of less than 100 tons.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, h.p. etc.	Owner or Managing Owner	
150737	Anona.....	Toronto	Boston Mass., U.S.A.....	1904	119.5	18.2	9.9	166	113	36 Sc.	A. E. Mathews, Toronto.
150843	Beechbay (1).....	Montreal	St. Nazaire, France.....	1919	218.8	34.3	13.2	1219	658	77 Sc.	Beechbay Steamship Co., Montreal.
150841	Elmbay (2)*.....	Montreal	St. Nazaire, France.....	1919	218.6	34.2	13.1	1217	661	77 Sc.	Elmbay Steamship Co., Montreal.
151589	Glensannox (3)*.....	Montreal	Chicago, Ill.	1896	357.4	44.0	21.6	3193	1875	150 Sc.	Great Lakes Transportation Co., Midland, Ont.
150978	Ironbark**.....	Vancouver, B.C.....	New York, N.Y.....	1917	50.0	10.6	5.6	21	12	10 Sc.	Coal Harbor Wharf & Trading Co., Vancouver, B.C.
116618	Keno.....	Dawson, Yukon.....	White Horse, Yukon.....	1922	130.5	29.2	4.8	553	349	9 Pa.	British Yukon Navigation Co., Vancouver, B.C.
105797	Mogul (4)*.....	Victoria, B.C.....	Stockton, Eng.	1896	310.0	44.0	20.5	2935	1828	246 Sc.	Coastwise Steamship & Barge Co., Vancouver, B.C.
116619	Neecheah (5)**.....	Dawson, Yukon.....	White Horse, Yukon.....	1920	78.5	17.2	3.1	93	64	6 Sc.	British Yukon Navigation Co., Vancouver, B.C.
150847	Pinebay (6)*.....	Montreal	Grand Quevilly, France.....	1919	218.0	34.2	13.2	1222	657	77 Sc.	Pinebay Steamship Co., Montreal.
150833	Poplarbay (7)*.....	Montreal	Arles-Sur Rhone, France	1921	219.4	34.3	12.7	1263	664	99 Sc.	Poplarbay Steamship Co., Montreal.
96888	Red Island (8).....	Ottawa, Ont.....			102.0	22.0	10.6	153	131	20 Sc.	J. Couette and A. Albert, Quebec, Que.
150842	Rival.....	Montreal	Sorel, Que.	1923	84.4	24.0	11.1	196	15	64 Sc.	Sincennes-McNaughton Line, Montreal.
150979	Sea Wave**.....	Vancouver, B.C.....	Vancouver, B.C.....	1923	75.2	19.5	8.3	80	23	9 Sc.	Young & Gore Tow Boat Co., Vancouver, B.C.
150616	Valmont, T.**.....	Quebec, Que.	Matane, Que.	1923	93.1	27.3	8.6	118	63	14 Sc.	La Cie. de Transport de Fret de Gaspé, Quebec, Que.
150840	Weavercoal (9).....	Montreal	Buffalo, N.Y.	1878	260.8	34.9	14.9	1309	795	92 Sc.	F. P. Weaver Coal Co., Montreal.
150838	Willowbay (10)*.....	Montreal	Bordeaux, France	1920	218.8	34.4	12.6	1247	659	103 Sc.	Willowbay Steamship Co., Montreal.

(1) Formerly Riveur. (2) Formerly Nantes, and Perceur. (3) Formerly George E. Hartnell, sailing vessel. (4) Formerly Kingtor, and Caesar. (5) Formerly Kestrel. (6) Formerly Rouvray, and Mineur. (7) Formerly Biessard, and Peintre. (8) Formerly a sailing ship. (9) Formerly Winnipeg, recovered wreck. (10) Formerly Oissel, and Talier. *Equipped with wireless. **Motor boat.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner	
150880	C.R.M. No. 2.....	N. Westminster, B.C.	Barge.	New Westminster, B.C.....	1923	88.7	34.2	9.7	236	236	Campbell River Mills, Ltd., White Rock, B.C.
150984	Don III.....	Vancouver, B.C.....	Scow..	Vancouver, B.C.	1923	90.0	30.0	8.3	178	178	H. Goldie, Vancouver, B.C.
150983	Dredge P.W.D. No. 39.....	Vancouver, B.C.....	Drdge.	Chase, B.C.	1923	70.5	30.0	5.3	142	111	Minister of Public Works, Ottawa, Ont.
150982	Dredge P.W.D. No. 302.....	Vancouver, B.C.....	Drdge.	Nelson, B.C.	1923	75.7	32.0	5.8	177	129	" " "
116616	Hootalinqua.....	Dawson, Yukon.....	Scow..	White Horse, Yukon.....	1922	89.7	30.2	4.1	211	211	British Yukon Navigation Co., Vancouver, B.C.
150980	J. C. 33.....	Vancouver, B.C.....	Scow..	North Vancouver, B.C.....	1923	90.0	30.0	7.7	174	174	J. Crane, Vancouver, B.C.
116617	McQuesten.....	Dawson, Yukon.....	Scow..	Seattle, Wash.	1911	50.0	24.3	4.5	196	196	British Yukon Navigation Co., Vancouver, B.C.
150985	Norcon No. 50.....	Vancouver, B.C.....	Scow..	Vancouver, B.C.	1923	90.5	30.0	8.8	199	199	Northern Construction Co., Winnipeg, Man.
151061	R. F. 9.....	N. Westminster, B.C.	Barge.	Marpole, B.C.	1923	89.4	31.0	8.5	210	210	R. Fenton, New Westminster, B.C.

Vancouver's Harbor Facilities.

Lt. Col. G. H. Kirkpatrick, President, Vancouver Harbor Commissioners, presented the following statement to the Dominion Government's commissioner enquiring into the grain trade during its recent sittings at Vancouver: Elevator no. 1 is the existing elevator, built some years ago by the Dominion Government and taken over from the Board of Grain Commissioners by the Vancouver Harbor Commissioners on Aug. 1 last. Up to the present, this elevator has had a storage capacity of 1,200,000 bush., and has been equipped with 3 shipping legs. We are adding slightly over 800,000 bush. to the storage capacity, and are increasing the shipping facilities by approximately 100%. The elevator's turnover last year was limited by the shipping side. Under the new arrangements, as mentioned above, we expect to approximately double the shipping capacity. The receiving facilities are ample to cope with the increased shipping facilities. We expect this elevator to be complete, with its alterations and additions, and ready for operation, by approximately Nov. 1. In connection with elevator no. 1, plans have been drawn, and are at Ottawa awaiting approval, for the construction of a quick loading grain jetty for ships taking full cargoes of grain. This jetty will be equipped with 4 conveyor belts, and will berth 2 ships at a time. Construction will commence as soon as the plans are approved, and we expect to complete it in 100 days from the commencement of work. This jetty, together with the elevator's improved shipping facilities, will have the effect, as stated above, of practically doubling the berthing facilities for this elevator.

Elevator no. 2 is a new elevator under construction. It will have a storage capacity of 1,500,000 bush., will be equipped with 6 shipping legs and conveyor belts, and will have a receiving capacity of a minimum of 8 cars an hour, capable of being increased to a minimum of 12 cars an hour. We hope to have this elevator ready for operation about the end of March. In connection with elevator no. 2, the commissioners have prepared plans for a jetty similar to that at elevator no. 1, and as soon as further funds are available, they propose to recommend its immediate construction.

The Ballantyne pier is rapidly nearing completion, and will be equipped with grain conveyors on both sides, connected with elevator no. 2, thus providing four grain berths capable of taking the largest class of ships. This pier should be ready for operation about Nov. 1.

The foregoing development will, we expect, permit us to handle comfortably

50,000,000 bush. of wheat in a season, and possibly, under favorable conditions, 60,000,000. This is without regard to any private elevators which may be built, such as that now under construction by Mr. Woodward. In the case of both of the commissioners' elevators, it will be possible to provide further storage capacity should necessity arise. The works referred to above have been undertaken by the commissioners themselves, but other important works are also under way in the harbor, including, among others, a large and expensive pier about to be built by the C.P.R.

The commissioners have under consideration various other projects, among which is the provision of a special area where private elevators may lease suitable sites on reasonable terms. This area would be selected at some point apart from the congested portion of the waterfront, and would be provided with suitable trackage and waterfront facilities. Apart from such additions or extensions as may become necessary to elevators 1 and 2, it is hoped that private capital will carry on the work of providing the necessary further grain handling facilities, but, of course, should it prove backward, the commissioners will have to consider the advisability of providing further facilities themselves, should it become necessary to do so. There are other projects under consideration which are designed to build up the trade of the port in other directions, such as lumber, fruit, etc., and I wish to point out that all such development tends to bring more ships to the port, which is directly to the benefit of the grain trade.

The commissioners are endeavoring constantly to keep the development of the port abreast of, or a little ahead of, the needs of the port. This is very necessary, if the trade of the port is to grow freely and unhampered by lack of berthing space. It is evident that if the grain trade through this port develops to large proportions, the import trade is also likely to increase extensively. Keeping this in mind, it is clear that in order to properly develop the port for the grain trade, it will be necessary also to provide for an increase in the general cargo imports. As evidence of the necessity for courageous action in anticipating the future, and also as evidence of the growth of the port's commerce, I wish to instance the case of the Ballantyne pier. When work was commenced on it 3 years ago, it was thought in many quarters that its construction was premature, as at that time the existing harbor facilities were not utilized to anything like

their full capacity. Now as the pier, with its half mile of deep water berthage, approaches completion, the need for it is very obvious and the congestion in the harbor is so marked that ships are already using it in its incomplete state, while others are continually being forced to load in the stream.

I wish to corroborate the evidence of the shipping witnesses so far as the harbor records go. These records show a steady and rapid increase in shipping using the port. They also show that this increase is keeping pace with the growth of the cargo tonnage available. The cargo and shipping figures of the port for the first six months of this year, compared with last year, show that there is a steady increase in cargo tonnage and that the additional ships necessary to move it are apparently always available.

Automobile Ferry Boat on Ottawa River.

It is strange that, notwithstanding the increasing use of automobiles, and in spite of the huge sums spent in road building and maintenance, the average automobile ferry remains an antiquated Noah's ark, slow in speed, awkward in manoeuvring, rotten in condition, congested in deck area, and in fact, everything that an automobile ferry should not be. Some ships have a very curious history, if they are investigated, and many a fine and trim one is finishing its days as a coal hulk, or at least it used to be, but now they go one stage further, they become automobile ferries, to the apprehension and despair of the poor auto owner, who has no option but to use it. Who has not had the experience of being hustled and bullied into so backing, filling, and turning his car to suit the whims of the "expert," who packs cars into spaces which look impossible, until one's nerves are on edge, car fenders scraped, and a great deal of time wasted, partly due to waiting one's turn, and in part to the aforesaid packing process. With it all one is charged fares, out of all proportion to the service rendered, or to what it should cost, given proper equipment; for expenses of operation are usually in the inverse ratio of the age of the boat.

An exception to the rule is the steel automobile ferry built recently for the Norway Bay Ferry Co., for service across the Ottawa River between Sand Point, Ont., and Norway Bay, Que., which replaces an antiquated makeshift, which mercifully sank, after causing its owner to fail.

The old ferry was built of wood, to about the same size, carried 5 automobiles at a speed of 6 miles an hour, and was equipped with an old "original" gasoline engine of stationary type. The writer does not know what it cost to operate, but it did not do a great deal of business, as it was a thing to avoid as far as possible. The fuel cost would probably be about 5 to 6c a car mile.

The new ferry is equipped with a semi-Diesel oil engine by Crude Oil Engine Co. of Canada. It is 67½ ft. long by 20 ft. beam by 4½ ft. draft, and carries 8 cars at a speed of 15 miles an hour, at a fuel cost of about ½c a car mile. It is hardly to be wondered that the new service is a success, where the old one was a failure, and the new ferry is at-

Ships Added to and Deducted from the Canadian Register During July, 1923.

Added.	Steam.—Tonnage—			Sailing.—Tonnage—		
	No.	Gross	Net	No.	Gross	Net
Built in British Possessions.....	17	1,256	689	0	1,559	1,480
Purchased from foreigners.....	11	7,791	4,303	2	199	199
Transferred from United Kingdom.....	1	2,935	1,828
Registered anew.....	2	3,346	2,006
Totals.....	31	15,328	8,826	11	1,758	1,679
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Deducted.	Steam.—Tonnage—			Sailing.—Tonnage—		
	No.	Gross	Net	No.	Gross	Net
Wrecked or otherwise lost.....	1	1,530	937
Broken up or unfit for use.....	1	1,517	924	1	17	17
Sold to foreigners.....	1	7	5	.....	.....	.....
Transferred to United Kingdom.....	4	22,789	14,406	.....	.....	.....
Registered anew.....	2	61	53	4	3,533	3,423
Totals.....	9	25,904	16,325	5	3,550	3,440

tracting a much larger clientele, which shows that if the automobile ferry business was treated as a commercial proposition, and participated in by responsible and business men with proper equipment designed and built for the purpose, and managed with the same degree of regard for the safety and convenience of its patrons as other transportation units are, it would be a profitable venture, even with considerably lower fares than at present in vogue, and instead of being an annoying experience, ferrying would be a break in the monotony of driving and a pleasurable relaxation. There are many excellent roads and routes, built and maintained at much expense, which are largely avoided by the motorist because they entail the use of an expensive and dangerous ferry. It isn't so inconsistent to be against public ownership in general or as a principle, and yet be in favor of a provincial or municipal owned and operated ferry, as it is to have first class roads spoilt for motorists by their connecting links—the ferries.

There are one or two features of interest in connection with this ferry. The location is isolated so far as navigation is concerned, the Chats Falls being just below it. Consequently it was necessary to either build on the spot, with local equipment and labor, or else to transport the hull in sections. The difficulty was eventually overcome by building and completing the hull in Canadian Vickers yard at Montreal, then disconnecting it up the centre line, and shipping it on cars, substantially in two pieces. In this way the longitudinal stiffness of the hull was preserved and the plating was very largely riveted and caulked prior to shipment.

The oil engine of 60 b.h.p., was the first of its kind in the locality, and is a source of much interest to the local shipping fraternity. It is operated successfully by the chief owner's son, who had never seen an oil engine prior to its installation. It may be suggested that for a boat of the above dimensions to attain a speed of 15 miles an hour with an engine of 60 b.h.p. is open to considerable doubt. In fact, even the designer questioned it very dubiously, with the result that the route was surveyed by a government surveyor, and found to be exactly three miles from pier to pier, while the time could not be questioned, being between 11 and 12 minutes, which shows that excessive beam to length does not necessarily jeopardize propulsive efficiency. The boat was not placed in service until the end of July, and will continue running until the end of September or possibly later, each year, but normally the season will commence in the middle of May. It is used in part by the local rural population, and also by tourists and frequenters of the Norway Bay summer hotel. It is also intended that it shall be used for moonlight and other excursions for the hotel guests. It was designed by Walter Lambert, M.I. N.A., Montreal, and built by Canadian Vickers Ltd., Montreal.

Proposed St. Lawrence Waterways Deepening.—The Minister of Public Works, Mr. J. H. King, is reported to have said at Ottawa, Oct. 18, that he did not think the Government or the people were in a position to even consider the project of deepening the St. Lawrence waterways, and they would not be in a position to do so, until it is thoroughly investigated by a board of engineers representing Canadian interests.

Public Works Marine Contracts Awarded.

The Dominion Public Works Department has awarded contracts as follows: Aug. 2, dredging at Lunenburg, N.S., Acadian Contractors Ltd., Halifax, N.S., class A. at \$9 a cu. yd. in situ, class B. at 58c a cu. yd., scow measure; Aug. 27, construction of wharf connecting present Government wharf and eastern breakwater, and construction of protection pile work along present Government wharf, at Matane, Que., to J. R. and J. Elz, Boulanger, Que., at unit prices; Aug. 27, extension to eastern breakwater, at Matane, Que., to J. R. and J. Elz, Boulanger, Que., at \$3.78 a cu. yd. for crib-work complete and stone ballasted; Aug. 31, dredging basin and channel at St. Emilie, Que., to National Dock & Dredging Corporation, Levis, Que., class B., at 39c a cu. yd., scow measure; Aug. 30, repairs to breakwater adjacent to southern shore at Toronto Island, Toronto, to Randolph-Macdonald Co., Toronto, at \$10 a ton of rubble stone; Sept. 4, dredging at Whitby, Ont., to Randolph-Macdonald Co., Toronto, class B., at 65c a cu. yd., place measure; Sept. 4, dredging channel at Mitchell's Bay, Toronto, to Chatham Dredging & General Contracting Co., Chatham, Ont., class B., at 28c a cu. yd., place measure; Sept. 5, overhauling and repairing dredge Fruhling, no. 303, British Columbia dredging fleet, to B.C. Marine Engineers & Shipbuilders Ltd., Vancouver, B.C., for \$15,490 and unit prices; Sept. 5, dredging channel and basin at Pointe Traverse, Ont., to Frontenac Dredging Co., Toronto, class B., at \$1.10 a cu. yd., place measure; Sept. 6, dredging eastern entrance channel, Toronto, to John E. Russell, Toronto, class B., at 56c a cu. yd., scow measure; Sept. 7, plumbing, heating and electric lighting systems in lavatory building at Champlain drydock, Quebec, Que., to Jobin & Paquet, Quebec, for \$8,250; Sept. 7, dredging slips and deepening harbor at Port Arthur, Ont., to Canadian Dredging Co., Midland, Ont., class B., at 35c a cu. yd., place measure, and \$1,500 for deepening harbor and removal of temporary pile breakwater; Sept. 8, dredging Canadian National Rys. slips at Pictou, N.S., to Glasgow Dredging Co., Queensport, N.S., class B., at 70c a cu. yd., scow measure; Sept. 10, dredging in front of Aberdeen elevator, Tiffin, Ont., to W. Birmingham, Kingston, Ont., class B., at 75c a cu. yd., scow measure; Sept. 10, lavatory building at Champlain drydock, Quebec, Que., to Jos. Dorval, Lauzon, Que., for \$10,300; Sept. 10, repairs to wharf at Pointe au Pic, Murray Bay, Que., to E. Methot and N. Fournier, Montmagny, Que., at unit prices; Sept. 12, dredging area on east side of revetment wall, at Hamilton, Ont., to C. S. Boone Dredging & Construction Co., Toronto, at \$10 each for piles; Sept. 12, rebuilding 170 lin. ft. of east pier superstructure, at Cobourg, Ont., to V. T. Bartram, Toronto, at unit prices; Sept. 14, dredging at Canso, N.S., to W. McFatridge, Halifax, N.S., at \$95 a day of 10 working hours, \$5 an hour to be deducted from rental rate for 5 hours or more lost at any one time due to stress of weather; Sept. 17, dredging at Curry's Cove, N.B., to J. A. Gregory, St. John West, N.B., class A. at \$8 a cu. yd., class B. at \$1.10 a cu. yd., barge measure; Sept. 19, dredging channel and basin at Valleyfield, Que., to Les Chantiers Manseau, Sorel, Que., class B., at 49c a cu. yd. in situ.

Canadian Great Lakes Ships' Grain Carrying Capacity.

A Winnipeg paper published a table on October 2, which it stated had been checked by ship owners and agents at Winnipeg, and which showed the Canadian Great Lakes ship wheat carrying capacity from October 1 to the end of navigation for each trip as follows, in bushels: Canada Steamship Lines, 3,600,000; Great Lakes Transportation Co., 2,000,000; Mathews Steamship Co., 1,500,000; Canadian Government Merchant Marine, 880,000; Algoma Central Steamship Co., 800,000; a total of 8,780,000. On the assumption that each ship made a round trip, they would deliver 5,580,000 bush. to Georgian Bay ports and 3,200,000 to Port Colborne, and figuring 3½ trips to bay ports and 3 trips to Port Colborne for October, 3½ trips to bay ports and 3 to Port Colborne for November, and one trip to bay ports and one to Port Colborne for December, it was calculated that 67,040,000 bush. would be handled. Adding to this an assumed quantity of 4,000,000 bush. to be carried direct to Montreal during the period, it was concluded that the total capacity of the Canadian fleet would be 71,040,000 bush. from October 1 to the end of navigation.

Canadian Railway and Marine World's information is that this estimate is probably too low. The table given below contains what we consider a fairly accurate estimate of the Canadian fleet's carrying capacity. We have included several ships which were not in the Winnipeg paper's estimate, have assumed that 4 trips will be made to bay ports in October instead of 3½, as 4 trips should be made with good dispatch, and we have calculated that the smaller ships handling direct from Fort William to Montreal should take nearer 6,000,000 bush. than 4,000,000.

	Bushels.
Canada Steamship Lines.....	3,600,000
Algoma Central Steamship Co.....	800,000
Great Lakes Transportation Co.....	2,000,000
Mathews Steamship Co.....	1,500,000
Canadian Government Merchant Marine	880,000
S.s. Jolly Inez.....	115,000
Geo. Hall Coal Co.....	240,000
S.s. T. J. Drummond.....	105,000
S.s. J. A. McKee.....	110,000
S.s. Turret Court.....	110,000

Total capacity in one trip..... 9,460,000
Assume that in one trip 6,000,000 bush. would go to Bay ports and 3,460,000 to Port Colborne.

4 trips to Bay Ports in October.....	24,000,000
3 trips to Port Colborne in October.....	10,380,000
3½ trips to Bay ports in November.....	21,000,000
3 trips to Port Colborne in November.....	10,380,000
1 trip to Bay ports in December.....	6,000,000
1 trip to Port Colborne in December.....	3,460,000
Add grain carried direct to Montreal by smaller ships not included in above.....	6,000,000

Total carrying capacity in period..... 81,220,000

If to the above be added a one-trip capacity of 680,000 bush., of ships which are not of Canadian registry, but which at the same time are not of U.S. registry and are amenable to Canadian inspection while in the Canadian grain trade (made up as follows: British s.s. John Shaw, 80,000 bush.; British s.s. Belchers, 100,000 bush.; British s.s. North American, 100,000 bush.; British and Norwegian tramp ships now in the trade, aggregating 400,000 bush.; total, 680,000 bush.), the total one trip capacity becomes 10,140,000 bush. instead of 9,460,000. Assuming that 6,450,000 bush. would go to Bay ports and 3,690,000 to Port Colborne for one trip by all ships, and on the basis of the same trip schedule as used above, the total carrying capacity from Oct. 1 to the close of navigation would be 86,655,000 bush.

Welland Canal Lock Gates Accident.

The Bay Line Steamships Ltd. s.s. Poplarbay, loaded with wheat, while downbound on Oct. 11, at 7.45 a.m., collided with the lower gates of lock 10, Welland Canal, east of St. Catharines, carrying them out. The water released from the reach above the lock also carried out both upper gates. The rear slopes of the canal banks at the head of locks 9 and 8, were washed out somewhat, but not extensively. Quite a large area of land was flooded with water on account of the long reach of canal above lock 10, but most of it was canal land, and the damage to private property from flooding was very small. Four spare gates were placed in position at the lock in record time, and the canal was ready for resumption of traffic at 9 p.m. the same evening, but practically no ships, except small motor craft, were able to proceed until the following morning, owing to very dense fog. The estimated cost of repairing damages to government and private property is \$15,000. It is said the ship was damaged somewhat, as she had difficulty in keeping afloat below lock 10. There was some wet grain. After part of the cargo was lightered, she was able to proceed down the canal on October 14. About 10 ships were delayed for varying periods, due to the break.

Proposed Disuse of Welland Canal from Port Dalhousie to Merritton.

It having been stated that, on the completion of the Welland Ship Canal, the portion of the present Welland Canal between Port Dalhousie and Merritton, Ont., would be abandoned, the St. Catharines, Ont., Chamber of Commerce passed a resolution recently that, while aware that public policy would be against its maintenance as a waterway for either navigation or power, and its retention in either capacity would be unwise, they felt that the drying up of the channel would cause risks of accidents to pedestrians and children, pollution by reason of dumping, injury from weed growth, and disfigurement by being an eyesore, and urging on the Railways and Canals Department that a culvert system be arranged, to keep in motion a flow at present levels throughout the present canal, from Merritton to Port Dalhousie,

and that future bridge building in the area be designed to accommodate such a flow under permanent structures; that the Department be responsible for the annual cutting of weeds and cleanliness of the canal bed, and that such staff as is retained be utilized to keep sluices open and regulate the flow. The Railways and Canals Department's Secretary replied that the matter had been fully considered by its engineers, that adequate drainage of the abandoned canal will be provided, that steps will be taken to prevent objectional dumping of refuse therein, and that to obviate the creation of a breeding place for mosquitoes, etc., it will be desirable for the present levels to be lowered as much as possible, otherwise each reach would become a stagnant pool, with the small allowable flow passing through it.

On the abandonment of the portion of the present canal between Port Dalhousie and Merritton, Port Dalhousie will, of course, cease to be the terminus of water traffic between Lakes Erie and Ontario, and its place will be taken by Port Weller, the new Lake Ontario terminus.

Ballantyne Pier at Vancouver Opened.

The Ballantyne pier at Vancouver, B.C., the construction of which was started in 1920, and which is said to be the largest and the most modern on this continent, was formally opened Oct. 8. Lt.-Col. G. H. Kirkpatrick, Chairman Vancouver Harbor Commissioners, presided, the opening ceremony being performed by Hon. Ernest Lapointe, Minister of Marine and Fisheries, Ottawa. Its general dimensions are: length, 1,200 ft. on one side and 1,070 ft. on the other; breadth, 341 ft. It provides berths for 2 oceangoing ships on each side, and when the shore quays are completed, there will be accommodation for 2 more ships. There are 4 sheds on the pier, 3 of them 500 x 110 ft., and one 408 x 110 ft. The contractors are the Northern Construction Co. and Major-General Stewart, the estimated total cost being approximately \$6,000,000. The most modern freight handling devices are provided, and there are 8,000 ft. of railway track, connecting with the harbor commissioners' track, which give connection with all the railway lines entering Vancouver.

The Minister of Marine, in the course of his speech, said:—"I have the deep conviction that the building of this pier

and of the elevator now under construction is only the first step toward providing the port of Vancouver with the terminal facilities which natural conditions and the normal flow of trade will necessitate."

After the speaking, the Canadian Government Merchant Marine s.s. Canadian Winner was placed in her berth, and the spectators were shown the pier equipment in action, loading her with grain for shipment to Liverpool. In the evening the Vancouver Harbor Commissioners gave a dinner in honor of the event.

Hay Carried Twice Across the Atlantic and Then Thrown Overboard.

A strange story of a steamship, 740 bales of pressed hay, and government red tape has been related in Montreal. Shorn of details, the story is that a consignment of 740 bales of pressed hay was loaded on a steamship for London, where she was unable to discharge it owing to labor trouble, and she went on to Antwerp, where the hay was unloaded, picked up another cargo, and left for Canada. On her next trip to Antwerp, the hay was loaded on here again, and taken to London, where government red tape regulations stepped in, refusing to permit the hay to be landed, owing to the fact that there was foot and mouth disease on the continent, and the hay having been for some time in Antwerp, might have become tainted. The hay was then taken back to Montreal, where, under the Dominion Government regulations, it was refused a landing, and the ship underwent a thorough fumigation. The steamship has taken the hay out of Montreal again, and on reaching somewhere in the ocean. it will be thrown overboard. Why should it not have been burned?

Ships Under 200 Tons Cannot Carry Export Alcoholic Beverages.

The following Dominion order in council, 1794, was passed Sept. 12. The Governor General in council, on the recommendation of the Minister of Customs and Excise, and under and by virtue of the powers in that behalf conferred on the Governor General in council by the Customs Act, R.S.C. 1906, chap. 48, sec. 81, and the Inland Revenue Act, R. S. C. 1906, chap. 51, sec. 140, or otherwise vested in the Governor General in council, is pleased to make the following regulation, and the same is hereby made and prescribed accordingly: No intoxicating liquors imported into Canada and no intoxicating liquors subject to duties of excise and on which such duties of excise have not been paid, may be exported from Canada in bond in any vessel under the burden of 200 tons gross registered tonnage.

The Ship S. F. Tolmie Ltd. has been incorporated under the British Columbia Companies Act, with \$150,000 authorized capital, and office at Vancouver, to buy the sailing ship S. F. Tolmie, and carry on a general shipowning and shipping business. As mentioned in our last issue, the S. F. Tolmie was sold by the Dominion Government to The Hastings Mills Ltd. for operation in that company's lumber business. Since she was taken over by the Government from the building company, on its bankruptcy, she has been operated by Canadian Government Merchant Marine.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during September:

Articles	Canadian Canal	U.S. Canal	Total
Lumber	7,069	23,341	30,410
Flour	697,470	664,800	1,362,270
Wheat	2,842,131	19,829,765	22,671,896
Grain, other than wheat.....	1,919,549	6,439,802	8,359,351
Copper	3,004	4,048	7,052
Iron Ore .....	.....	9,467,787	9,467,787
Pig Iron	417	2,800	3,217
Stone	2,500	5,300	7,800
General Merchandise	3,789	4,628	8,417
Passengers	2,827	1,600	4,427
Coal, Soft	36,675	1,908,669	1,945,344
Coal, Hard	1,000	72,461	73,461
Iron Ore .....	.....	13,104	13,104
Manufactured Iron and Steel..	3,799	2,618	6,417
Salt	1,298	7,587	8,885
Oil	4,800	21,107	25,907
Stone .....	.....	53,633	53,633
General Merchandise	21,792	47,884	69,676
Passengers	2,436	977	3,413
Summary			
Vessel Passages	Number 578	2,615	3,193
Registered Tonnage	Net 888,059	9,233,534	10,121,593
Freight—Eastbound	Short tons 224,216	10,355,405	10,579,621
Westbound	Short tons 69,364	2,127,063	2,196,427
Total Freight	Short tons 193,580	12,482,468	12,776,048

Mainly About Marine People.

Capt. James Buchanan, Cleveland, Ohio, master of the s.s. Luzon, the stranding of which is referred to on another page, suffered a paralytic stroke and was removed to the McKellar General Hospital, Fort William, Ont., on Oct. 8, where he died Oct. 12, without regaining consciousness. He was 59 years of age, and had sailed on the Great Lakes for 41 years.

Capt. G. C. Evans, O.B.E., was presented with a silver tea and coffee service at Liverpool, Eng., recently, by Capt. Henry Parry of the C.P.R. s.s. Montrose, on behalf of the staff, on his retirement from C.P.R. steamship service after 48 years of active life at sea.

Capt. Robert D. Foote, formerly ranking captain of the Northern Navigation Co.'s fleet, who died at Fergus, Ont., Oct. 15, aged 72, was one of the best known mariners on the Great Lakes. Born at Fergus, May 1, 1851, he began sailing the lakes at the age of 17, and in 1884 was appointed to command the Great Northwestern Transit Co.'s s.s. Atlantic. He remained with that company until it was absorbed by the Northern Navigation Co., and subsequently commanded the latter company's steamships Atlantic, Pacific, Germanic, Majestic, City of Collingwood, Huronic, Hamonic and Noronic. He resigned from his last command in 1918, but remained with the company as relief captain, and maintained close touch with lake navigation. He stayed in Sarnia from 1918 until last spring, when he removed to Fergus. During his 55 years' service, he never got into serious difficulty with any of the ships under his command, and never lost a passenger. **Capt. J. B. Foote**, of the Toronto Insurance and Vessel Agency; **Capt. Jas. N. Foote**, of the Great Lakes Transportation Co.'s s.s. Glencova, and **Arthur Foote**, Superintendent, Canadian Dredging Co., Toronto, and formerly with the Port Arthur Shipbuilding Co., Port Arthur, Ont., are nephews.

Lieut.-Col. Francois Gourdeau, who was Deputy Minister of Marine from 1896 to 1908, died at Ottawa, Oct. 1, after a long illness. He was born in Quebec in 1846. Prior to entering the Dominion Government service, he was connected with Quebec Trinity House, which was responsible for the examination of pilots and the investigation of marine casualties. It consisted of 5 members, and was abolished in 1870. In 1872 he was appointed private secretary to Hon. Peter Mitchell, the first Minister of Marine, and was later transferred to the Dominion Government's Accountancy Department. He was made an officer of the Legion of Honor in 1905, when he acted as Canadian Commissioner to the Paris Exposition.

F. E. Hook, Port Superintendent Engineer, Canadian Pacific Railway Agency (Belgium), Antwerp, was presented with a silver tray and address by his colleagues and other friends recently on retiring. He joined the C.P.R. service as Chief Engineer of the s.s. Milwaukee in 1903, after 23 years' service with the Elder Dempster Co., and was subsequently Assistant Superintendent Engineer at London, going to Antwerp after the close of the war.

John Laxton, Superintendent, Consumers Gas Co., and one of the Toronto Harbor Commissioners, who died in Toronto Aug. 15, left an estate valued at \$281,805.

Richard Lewis, storekeeper on the

C.P.R. s.s. Montclare, died suddenly in a house on Craig St. West, Montreal, Oct. 12, aged 45.

Dr. W. L. McDougald, President Montreal Harbor Commission, addressed the Canadian Association of British Manufacturers, meeting in Montreal, Oct. 4, on "Transportation from the angle of increasing British trade with Canada."

W. L. McDougald, President, Montreal Harbor Commission, has resigned from the British Empire Steel Corporation's directorate.

Captain D. Murdock, who died at Coldwater, Ont., Oct. 2, aged 91, was a native of Scotland, and followed the sea for many years, making his first call at a Canadian port about 65 years ago. After some service in the United States navy, he retired and came to Canada, and lived principally in Toronto and Belleville.

J. W. Norcross, Vice President Canada Steamship Lines, returned to Montreal Oct. 17, from New York, where he is reported to have met Dr. Cuno, of the Hamburg-America Line, and discussed trans-Atlantic shipping plans.

Arthur O'Brien, Chief Steward of the Boston & Yarmouth Steamship Co.'s s.s. Prince George, retired from active service at the beginning of October, after 17 years with the company.

Capt. S. Robinson, R.N.R., commander of the C.P.R. s.s. Empress of Australia, and who did excellent work during the recent disaster at Yokohama, Japan, was the guest of the Vancouver Board of Trade at dinner at the end of September. The Vancouver Harbor Commission gave him a silver mounted walking stick. **E. W. Beatty**, K.C., President C.P.R., was also present.

G. W. Stephens, formerly Chairman, Montreal Harbor Commission, who has been appointed a member of the Saar Valley Commission, under the League of Nations, sailed from Montreal, Oct. 1, for Europe, to take up his new duties. Prior to his departure, he was entertained at dinner by the Montreal Harbor Commissioners on their steam yacht Bethalma.

Atlantic and Pacific Oceans.

A Moscow, Russia, press cable of Oct. 14 states that an agreement has been entered into between the Canadian Pacific Steamships Ltd., the Cunard Line and the Holland-America Line and the Russian Volunteer fleet, for emigrant business to America.

The White Star s.s. Canopic will inaugurate the White Star and American Lines' joint service between Hamburg, Germany; Southampton, England; Cherbourg, France, and Halifax, N.S. The service will be maintained by the Canopic, Pittsburgh, Mongolia and Minnekha.

Furness-Withy & Co.'s steamships operating between England and British Columbia, are reported to be cutting off 5 days on the scheduled steaming time. The London Shipper was the first steamer to reach the Pacific coast, under the new schedule. She left on Oct. 25 on her return voyage.

The oil tanker Gedenia, while en route from Mexico to Montreal with oil, ran aground near Port Hastings, Canso Strait, N.S., Oct. 10, in a dense fog. An unsuccessful attempt was made to pull

her off by the s.s. Imperoyal. The s.s. Mina Brea was used subsequently to lighten her, and the Lord Strathcona also rendered aid. She was taken to Montreal for repairs.

The Norwegian s.s. Mirjam, which was wrecked on Black Ledge, Mud Island, Sept. 23, during a fog, while on a voyage from Portland, Me., has been condemned by the underwriters. Salvage operations of the fittings were reported to have started Oct. 6. A St. John Drydock & Shipbuilding Co.'s representative is reported to have been investigating the possibilities of refloating her.

The salvage tug Ocean Eagle, towing the tug Ballindalloch, both owned by the St. John Drydock & Shipbuilding Co., from Southampton, England, to St. John, N.B., met with severe weather about 200 miles west of the Irish coast, and had to put back into Queenstown on Sept. 23. After repairs had been made, they left Queenstown Sept. 28, but meeting again with severe weather, they were forced into St. John's, Nfld., on Oct. 12, through shortage of coal. They reached St. John, N.B., safely a few days later.

Maritime Provinces and Newfoundland.

The Dominion Public Works Department received tenders to Oct. 22, for dredging at the deep water berths and the Canadian National Rys.' long wharf at St. John, N.B.

Plans and specifications for Partridge Island breakwater, St. John, N.B., are reported to have been completed at Ottawa, and it is said that tenders for the work will be invited at an early date.

Full particulars of the damage done to ships on the Atlantic coast by the hurricane of Oct. 1 are given on an earlier page of this issue, under "Extensive Damage by Hurricane on Land and Sea."

The s.s. Seal is in the St. John's, Nfld., drydock undergoing repairs, including the replacement of a number of plates damaged during the last sealing season, and the fixing of a new propeller and shaft.

The Newfoundland schooner Freedom arrived at her destination, at Carbonnear, Nfld., Oct. 18, after being missing for 27 days. Capt. Noseworthy had his wife and their two young children on board with him.

The crew of the schooner Mary O'Connor, formerly the cruising yacht Chanticleer, owned in New York, entered suit recently in the Admiralty Court at Halifax, N.S., to recover wages amounting to about \$7,000. The schooner is lying at Brookfield's wharf, Halifax.

The Red Cross Line is reported to have put in force its winter rate of \$35 from St. John's, Nfld., to Halifax, N.S., and \$65 from St. John's to New York. The rate on the Canada Steamship Lines s.s. Manoa, from St. John's to Montreal, is reported to have been reduced to \$70.

The fishing smack, Margaret Grey, sank off Flat Point, near North Sydney, N.S., Oct. 16, owing to the explosion of the gasoline tank. Her stern was blown 25 ft. into the air, carrying one of the crew with it. He was rescued, and the crew arrived at Point Aucoin, Oct. 17, in a small boat.

The Revillon Bros.' auxiliary schooner, Jean Revillon, arrived in St. John's, Nfld., Oct. 8, from Hudson Bay, having been on a supply trip. She left subsequently for Liverpool, N.S., where she

will winter. She was built at Shelbourne, N.S., specially for this trade, and this was her first voyage.

Five steamships loaded at Charlottetown, P.E.I., in October, with certified seed potatoes for the southern states, U.S.A., the purchases having been made by the Southern Produce Association, Norfolk, Va. It is expected that the total export from the Island this year will be 180,000 bush.

The French s.s. Yport, 506 tons, was reported ashore on Scatterie Island, off the Cape Breton coast, Oct. 1, and was stated to be a total loss, the crew being saved. She sailed from Sydney, N.S., early in August, with 20,000 cases of spirits for southern points, and called at Halifax to bunker.

The St. John, N.B., ferry is reported to have carried in September 129,733 passengers and 8,193 teams, against 127,972 passengers and 7,914 teams in Sept. 1922; while the passenger revenue was \$2,009.57, and the team revenue \$745.95, against \$1,935.34 from passengers and \$692.83 from teams for Sept. 1922.

In connection with the loading of 25,000 barrels of Nova Scotia apples on the Atlantic Transport Co.'s s.s. Minnewaska, at Halifax, Oct. 15, A. G. Jones & Co., the company's general agents, entertained representatives of the Annapolis Valley shippers at luncheon on board the ship. F. J. Comeau, General Freight and Passenger Agent, Dominion Atlantic Ry., was also a guest.

Mr. Justice Rogers, sitting in the Admiralty Court at Halifax, N.S., Oct. 12, directed that the s.s. Mary Smith be sold and the proceeds paid into court. There are claims for wages and for a second mortgage, and the court heard arguments as to priority of claims on Oct. 23. The ship was in trouble some time ago in connection with an alcoholic beverages landing episode at Dartmouth, N.S.

The s.s. Petrel, owned by Labrador Goldfields Ltd., was sold by the sheriff at Halifax, N.S., Sept. 30, for \$701, to H. C. Bellew, Montreal, President of that company, to satisfy a judgment for wages. It is stated that she was bought in the interests of the shareholders, and will be taken to Montreal for general overhauling preparatory to being placed on the Great Lakes. She was owned formerly by the Dominion Marine Department and was built at Owen Sound, in 1892, is screw driven by engine of 50 h.p. and has the following dimensions: length 116 ft., breadth 22 ft., depth 10.3 ft.; tonnage 192 gross, 98 net.

The automatic radio beacon which the Marine Department has established at Cape Ray, Nfld., at the entrance to the Gulf of St. Lawrence, transmits on a wave length of 1,000 meters with a 500 spark frequency. The characteristic is a series of groups of 3 dashes transmitted for 60 seconds, followed by a 4-minute silence. Each individual group of 3 dashes occupies 3 seconds, with 1 second interval between the group. The station is in operation continuously during thick or foggy weather, and there are also 2 routine transmissions daily for test purposes. The transmitting range is approximately 50 miles. Masters of ships which are equipped to receive these signals, are requested to listen in when in the vicinity of the station and report results to the radio inspectors at H.M.C. dockyard, Halifax; Marine Department, Montreal, or St. John; or direct to the Radio Director, Marine Department, Ottawa.

The Dominion Government s.s. Aberdeen ran aground on Devil's Limb Ledge, Seal Island, N.B., Oct. 14, and was reported to be hard aground and full of water. It is feared that she will be a total loss. She left Yarmouth, N.S., on the morning of Oct. 13 for the Cape Sable light, on an inspection trip, and is reported to have got out of her course during a dense fog, and got into the breakers before her position was discovered. She went aground and began to make water fast. A wireless call was sent out for assistance, and the Dominion Government's steamships Laurentian, Arleux and Acadia arrived at different times during the night of Oct. 13. The Arleux rescued the crew, and all movable property was removed to the Laurentian. There may be a possibility of saving the vessel. The Aberdeen was built at Paisley, Scotland, in 1894, her dimensions being: length, 180 ft.; breadth, 31.6 ft.; depth, 16.9 ft.; gross tonnage, 674; registered tonnage, 274. She is fitted with engines of 200 h.p., and is screw driven.

Province of Quebec.

Lachine Canal shipments during September included 14,317,422 bush. of grain, against 14,013,958 in Sept. 1922.

Approximately 6,000 tons of Scottish anthracite coal reached Montreal, Oct. 15, on the s.s. Sheaf Mead from Glasgow.

The Dominion Government s.s. Montcalm left Quebec, Oct. 20, with winter supplies for the river and gulf light-houses.

A large painting of Paul de Chomedey de Maisonneuve, the first governor and founder of Montreal, originally named Ville Marie, has been hung in Canada Steamship Lines' s.s. Montreal, at the head of the main stairway.

Capt. L. A. Demers, Dominion Wreck Commissioner, opened an investigation at Montreal, Oct. 15, into the carrying away of the gates of Lachine Canal no. 1 lock, Aug. 29, when a number of lake and ocean ships were damaged owing to the rush of water.

The Quebec Harbor Commission is reported to have let contracts to the Linde Canadian Refrigeration Co., Montreal, and to T. E. Rosseau, Ltd., Quebec, for supplying the materials and constructing a cold storage warehouse, power plant and fish storage house.

The s.s. Ethelfreda is reported to have loaded 275,000 bush. of Manitoba wheat at Montreal in 11 working hours, before sailing for Plymouth, Eng., Oct. 16. The previous record is said to have been made by the s.s. Clearpool, which loaded 240,000 bush. in 10½ working hours in 1922.

The s.s. Mincio, which lost her anchor and chain shortly after sailing from Montreal, at the end of September, was later reported to be adrift with damaged steering gear about 20 miles off the Magdalen Islands. She was towed by the s.s. Comino to Sydney, N.S., for repairs.

The depth of water in the St. Lawrence River at Cap a la Roche, Que., Oct. 17, was reported to be 23.9 ft. at low water, and 26.9 ft. at high water, about 18 in. lower than last year's minimum. As a result, oceangoing ships are not able to complete loading at Montreal, and are completing it at Quebec.

The Canada Steamship Lines' s.s. Richelieu, which grounded at Grondines recently during a fog, and was towed off, was given temporary repairs at Montreal, prior to resuming her regular

service. It is expected that she will be put in drydock for permanent repairs at the close of navigation.

The Quebec Harbor Commission reports that during September, 50 ocean-going ships stopped at the port, of which 29 were passenger ships and 21 ocean freighters, having a combined tonnage of 317,615. In the coasting trade, 29 ships of 25,637 tons used the port, including grain-laden ships from the upper lakes.

The pilot boat Jalobert, stationed at Father Point, Que., for transferring pilots to and from ships, became disabled owing to a machinery breakdown, and was towed into Quebec Oct. 10, by the Dominion Government s.s. Druid. While she is undergoing repairs, the Dominion Government s.s. Loos is acting as pilot tender.

Judgment was given against Canada Steamship Lines by Chief Justice Francois Lemieux, in the Quebec Superior Court, Oct. 5, for \$20,000, in favor of the Municipal Debentures Corporation, out of an original claim of \$101,003, for commission, etc., in connection with the handling of \$3,609,200 of bonds, part of a total issue of \$6,000,000.

A German firm has entered action in the Quebec Superior Court against Auger & Sons, Quebec, to recover \$10,136.64, for loss of goods. Soon after navigation to Montreal was opened last spring, the s.s. Beluchistan went ashore near Quebec bridge, and some freight was transferred to Auger & Sons' lighter, which sank near Levis, the cargo being lost.

The new grain elevator at Windmill Point, Montreal, which at the time of writing (Oct. 20) is expected to be ready for operation by Oct. 31, has a capacity of 1,300,000 bush., and will bring the total elevator capacity at Windmill Point up to 3,500,000 bush. The Montreal Harbor Commission's two elevators have a capacity of 6,662,000 bush., so that the total elevator capacity of the port will be in excess of 10,000,000 bush.

The 900-ton counterweight attached to the short arm of the bascule span over the Lachine Canal at Ville St. Pierre, Que., broke away from its bearings, Oct. 4, crashing to the roadway, and letting the span fall 7 ft. to the canal bank. Without the counterweight the span could not be moved, and traffic was blocked. The engineering staff at once set to work to get the span moved, and by arrangement with the C.P.R., it was hauled straight south under the direction of F. P. Sherwood, Chief Engineer, Dominion Bridge Co. About 80 ft. of the width of the canal had been cleared of the obstruction to navigation and vessels were permitted to move on Oct. 8 during daylight.

Ontario and Great Lakes.

The Boone Dredging Co. commenced dredging operations in Collingwood harbor, Sept. 28.

New gates are reported to have been installed at the head locks on the St. Lawrence Canal east of Prescott, Ont.

The United States s.s. F. G. Hartwell cleared from Fort William, Ont., Oct. 15, with 480,000 bush. of wheat, the largest cargo for this season.

The water in Welland Canal was, on Oct. 16, reported to be 1 ft. below the required depth. This, together with some small breaks, had interfered with ships' movements.

Ships reaching Sault Ste. Marie and Fort William between Oct. 8 and 12,

reported heavy smoke clouds over portions of Lake Superior, making navigation difficult.

The Dominion Public Works Department has given the Port Arthur Construction Co., Toronto, a contract for the reconstruction of the south pier at Burlington Channel, Ont.

The Dominion Public Works Department has given a contract for building a storage annex to the Dominion Government elevator at Port Colborne, Ont., to E. G. M. Cape & Co., Montreal.

The Public Works Department's Chief Engineer at Ottawa is preparing plans and specifications for improvements at Port Stanley, including a pier, for which Parliament provided \$50,000 at its last session.

The Dominion Public Works Department will receive tenders to Nov. 2, for the reconstruction of a 40 x 80 ft. floating wharf, with 3 new 16 x 16 ft. approach panels, at Frasers Landing, Kootenay Lake, B.C.

The s.s. Interoro, owned by Southgate Marine Corporation, Norfolk, va., formerly in the frozen meat trade between South American and United States ports, arrived at Port Arthur, Oct. 13, to enter the grain-carrying trade.

The Canada Steamship Lines' package freighter Maplebrook, en route from Fort William, Ont., to Montreal, went ashore on Oct. 16 about a mile west of Dickenson's Landing, near Prescott, Ont. She was lightered and released.

The Eastern Steamship Co.'s s.s. Watkins F. Nesbitt arrived at Montreal, Sept. 29, being 23 days out from Liverpool, due to heavy gales and head winds, which she encountered all the way, after rounding the north of Ireland.

The Hamilton city board of control has expressed itself in favor of continuing to make a grant to the Hamilton Harbor Commission, in lieu of that body charging harbor dues. The grant for 1923 was \$4,000, and it is expected that the same will be appropriated for 1924.

The Dominion Public Works Department has given Canadian Dredging Co., Midland, Ont., a contract for the construction of a section of rubble mound breakwater at Port Arthur, a full description of which was given in Canadian Railway and Marine World for October, pg. 509.

The Great Lakes Harbor Association was formed at a meeting in Milwaukee, Wis., Oct. 19, W. G. Bruce, Milwaukee, being President; Mayor Maguire, Toronto, First Vice President; D. L. White, Midland, Ont., Fourth Vice President; Comptrollers J. Gibbons and W. W. Hiltz, Toronto, being among the directors.

An enquiry is being conducted into the strange disappearance of Terence Murray, second mate of the Bay Steamship Co.'s s.s. Beachbay, who went on duty on Sept. 21 at 7 a.m., while the ship was passing Coteau Lake, and has not been seen since. He is 53 years old, was born at Elgin, Ont., and lived for some years at Kingston.

The s.s. Berryton, owned by Mathews Steamship Co., Toronto, and the s.s. Bennington, owned by D. Sullivan Co., Chicago, Ill., collided head on in the Detroit River, near the foot of Ouellette St., Detroit, Mich., Sept. 29. The Bennington was towed to a Detroit dock by another freighter, the Berryton proceeding on her trip to Port Arthur.

The Detroit & Cleveland Navigation Co., which is building two steamships,

the Greater Detroit and the Greater Buffalo, for its Buffalo-Cleveland-Detroit route, will next season place the steamships now on that present route, on a new route between Detroit and Chicago, calling at Mackinac Island. They will be operated on a 36-hour schedule.

The Cleveland Cliffs Iron Co.'s s.s. Luzon, which left Port Arthur, Ont., Oct. 7, for Buffalo, N.Y., with 200,000 bush. of wheat, ran ashore on Passage Island that night during a fog, which was intensified by smoke from forest fires. A tug and lighter were sent, and as she was not in a dangerous position, she was got off and proceeded on her trip.

The s.s. Turbinia, which was built for the Toronto-Hamilton run, which left Toronto in the summer of 1918 for special war service overseas, and which returned to Canada in 1920, since when she has been lying at Sorel, Que., was brought to Toronto by two tugs, arriving Oct. 3. It is stated she will be reconditioned and put back on her old route next year.

The United States Lake Survey reports the mean stages of the Great Lakes for September, in feet above mean sea level, as follows:—Superior, 602.10; Michigan and Huron, 579.64; St. Clair, 574.49; Erie, 571.55; Ontario, 245.03. Compared with the average September levels for the past 10 years, Superior was 0.66 ft. below; Michigan and Huron, 1.09 ft. below; Erie, 0.94 ft. below; Ontario, 1.16 ft. below.

The Hamilton Harbor Commission's chairman submitted to the Hamilton Chamber of Commerce directors on Oct. 16, the commission's proposals for the improvement of the harbor. They include a municipal dock to be served by a siding from the Canadian National Rys., and the building of a warehouse in the rear of the revetment wall. The directors endorsed the proposals, and decided to ask the Dominion Government to consider them favorably.

The Marine Department is placing 3 metering buoys, small kegs, 200 ft. apart, and about 1,000 ft. upstream from Iroquois Point, in the St. Lawrence River, and extending directly across the river in the direction of Tilden on the U.S. shore. These buoys will be in place between 1 and 6 p.m. daily, and as they are not connected in any way, may be passed on either side. Ship navigators are requested to interfere as little as possible with these buoys.

The s.s. Pabjune, owned by Mapes-Ferdon Steamship Co., Montreal, which went ashore on Ogden Island, St. Lawrence River, 20 miles below Prescott, Ont., after being lightered of 22,000 bush., was released from a rather serious and difficult position on Sept. 30, by the Reid Towing & Wrecking Co. She was considerably damaged, but with air compressors to keep down the water, she proceeded to Montreal, where, after discharging the balance of her cargo, she was put on drydock for examination.

As a result of dredging, the anchorage and manoeuvring area below the locks in the St. Mary River, an additional 200 ft. in width has already been obtained. Dredging to remove portions of shoals to a minimum depth of 22 ft. at the upper entrance to Hay Lake channel and Bayfield Rock Course, was discontinued Aug. 25. The result has been the securing of a 22 ft. depth through the greater portion of the southern half of the channel, on Bayfield rock course, and for about 350 ft. in width at the upper end of Little Rapids cut.

The Minnesota-Atlantic Transit Co.'s Diesel-electric ship, Twin Ports, made

her maiden voyage between Ashtabula, Ohio, and New York, via the Welland and Erie Canals and the Hudson River, during September. She has a total cargo capacity of 2,600 tons, of which 600 tons is refrigerator space. Her dimensions are: length 258 ft., breadth 42 ft. She has been built expressly for canal and coastwise service. She is equipped with 250 h.p. d.c. motors, supplied from two 250 k.w. generators, operated directly by 2 Lombard-Diesel engines, for a speed of 13 miles an hour in deep water. A sister ship, to be named Twin Cities, will be ready for service shortly. During the winter the ships will be run between New York, southern ports and the West Indies.

Mathews Steamship Co.'s s.s. Huronton, upbound, was struck and sunk in St. Mary's River on Oct. 11, during a heavy fog, by the s.s. Cetus, owned by Interlake Steamship Co., Cleveland, Ohio, which was downbound with ore. The Cetus' stern was badly twisted. After picking up the Huronton's crew, she went down the bay and into the upper St. Mary's River, anchoring above Big Point. Captain Beatty and the Huronton's crew arrived at Sault Ste. Marie on Oct. 12, on the tug Iowa, reporting that the Huronton was struck amidships and sank in 18 minutes. The Huronton was built at Loraine, Ohio, in 1898, her dimensions, etc., being: length 238 ft., breadth 42 ft., depth 22.4 ft.; gross tonnage 2,072, registered tonnage 1,242; horsepower of engines and mode of propulsion, 127, sc.

Canada Steamship Lines' s.s. Turbinia was towed into Toronto harbor, Oct. 1, where, it is stated, she will be thoroughly overhauled and renovated for replacing in the Toronto-Hamilton service next spring. She was built at Hebburn-on-Tyne, Eng., in 1904, and was among the earlier of the turbine driven ships, and probably the first to be built for Great Lakes service. She was built by the Turbine Steamship Co., controlled by the T. Eaton Co., Toronto, and later passed to Canadian Northern Ry. ownership, and finally to Canada Steamship Lines Ltd. During the war, she was utilized for carrying troops, etc., chiefly across the English Channel, between Dover and Boulogne and Southampton and Havre. For some time her headquarters were at Falmouth, Eng. She returned to Canada in 1920, and for two years was laid up at Sorel, Que., afterwards being taken to Quebec, then to Ogdensburg, N.Y., where her hull was cleaned, and finally to Toronto.

Manitoba, Saskatchewan, Alberta and Northwest Territories.

The Hudson's Bay Co.'s s.s. Athabasca River is reported to have been laid up for the winter at Fort McMurray, Alta.

The Northland Transportation Co.'s s.s. Northland Echo has arrived at Waterways, Alta., from northern points and has gone into winter quarters.

The Alberta & Arctic Transportation Co.'s s.s. Slave River has arrived at Waterways, Alta., from Great Slave Lake, and gone into winter quarters.

The Alberta & Arctic Transportation Co.'s motorboats Canadusa and Rallim arrived at the head of navigation at Waterways, Alta., on the Clearwater River, from the Slave Lake and other points north, Oct. 6, bringing out the crews of boats laid up in the north.

The Dominion Marine Department's Hydrographic Service Department has completed a topographical survey of the

entire river system, from McMurray, Alta., north to the Arctic coast.

The Manitoba Pulp & Paper Co.'s tug, Archibald, collided head on with the Northern Fish Co.'s tug Guest in the Red River about 8 miles from Selkirk, Man., Oct. 5, during a fog. An explosion in the Guest's engine room resulted, causing the death of two men.

British Columbia and Pacific Coast.

The steamboat Whitehorse left Dawson, Yukon, Oct. 12, for Whitehorse, closing the navigation season.

The Victoria, B.C., Chamber of Commerce has completed a list of the 21 lines, coastal and oceangoing, whose ships call regularly at that port.

The name of the scow R. F. No. 8, Vancouver, B.C., official number 150,520, owned by Thos. G. McBride & Co., Vancouver, has been changed to McB. No. 5.

The tug Peggy McNeill, of Vancouver, capsized in Porter Pass, near Ladysmith, B.C., towards the end of September, 5 of the crew being lost, the mate being the only survivor.

During September, 72,922 bush. of wheat were shipped from Vancouver, through the Dominion Government elevator, in 4 ships, all destined for the United Kingdom.

Vancouver Merchants Exchange is reported to have estimated that about 3,850,000 bush. of grain left there in October for the United Kingdom and the Orient.

The Pacific Tow & Barge Co.'s steam barge Peggy McNeill, of Vancouver, capsized in Porlier Pass, off the east coast of Vancouver Island, at the end of September, and 5 of the crew were reported missing.

The tug Czar, of the Greer, Christie Co.'s fleet, Vancouver, went ashore in Margaret Bay, Smith Inlet, Oct. 11, but was refloated. She is a new boat, 75 ft. long, and had only been in operation about a month.

The Alert Towing Co. has been incorporated under the British Columbia Companies Act, with an authorized capital of \$10,000 and offices in Vancouver, to carry on a general towing, lighterage, transportation and agency business.

The Canadian National Rys. will, a Victoria press report states, ask tenders shortly for building an additional steamship for the coast service. It is stated that the ship will be similar in type to the Prince Rupert, but about 30 ft. longer.

The Canadian National Rys.' s.s. Prince George and Prince Rupert will maintain a semi-weekly service between Vancouver and Prince Rupert and way ports during the autumn. The Prince George made the first sailing on the new schedule, Oct. 1.

The C.P.R. coast s.s. Charmer, outward bound for Powell River, B.C., collided, on Oct. 11, with the Norwegian motorship Theodore Roosevelt, which was lying in English Bay fogbound. The latter ship received some damage to the plates above waterline. The Charmer was undamaged.

The Hudson's Bay Co.'s schooner Lady Kindersley has returned to Vancouver from a trip to the most northerly of the company's posts in the Arctic. She penetrated to Prince Albert Sound, 1,200 miles east of Point Barrow, Alaska's most northerly cape, and established a trading post there.

The Grand Trunk Pacific Coast Steam-

ship Co.'s autumn schedule, effective from Oct. 1, shows the steamships Prince George and Prince Rupert on a weekly service between Vancouver and Prince Rupert, and the s.s. Prince John on a fortnightly service to Prince Rupert and Queen Charlotte Islands.

A signal, made of boiler plate about 2 ft. square, has been placed on the top of the draw bridge, over the Fraser River at New Westminster, which will be displayed when the bridge happens to be out of use. When the swing span cannot be opened, the signal will be raised about 8 ft. above the bridge steel, and at night will show a red light.

Wireless news bulletins are sent each Tuesday, Thursday, Friday and Sunday to the Grand Trunk Pacific Steamship Co.'s ships operated by Canadian National Rys., the regular news bulletins that are sent from Toronto and placed on C.N.R. transcontinental trains, being telegraphed to Vancouver and repeated from there by wireless to the ships.

Capt. J. D. Macpherson, with Captains B. Coombe and H. Mowatt as nautical assessors, opened an investigation at Victoria, Oct. 4, into the stranding of Furness-Withy Co.'s s.s. Siberian Prince, which went aground on Bentinck Island, near Race Rocks, B.C., July 27. The investigation was concluded Oct. 6, and judgment was expected to be delivered by Oct. 31. The Siberian Prince, which has been undergoing repairs at Victoria, was expected to sail for Great Britain Nov. 1.

The Canadian National Rys.' s.s. Prince Albert, operated on the Vancouver-Prince Rupert run, is reported to have been sold to the Western Freighters, Ltd. It is also reported that she was laid up, Oct. 8, for overhauling before being put in the Mexican ore trade. She was built for the Grand Trunk Pacific Coast Steamship Co. at Hull, Eng., in 1892, and has the following dimensions: length 232 ft., breadth 30 ft., depth 14.1 ft.; tonnage, gross 1,015, register 587. She is screw driven with engines of 170 n.h.p.

The Union Steamship Co. of British Columbia's new Howe Sound steamship, for which an order has been given to the Coaster Construction Co., Montrose, Scotland, as mentioned in our last issue, will be for day passengers only. She will be 225 ft. long and 37 ft. beam, and will be equipped with propelling machinery for driving twin screws, with Yarrow type boilers, placed amidships, for a speed of 15 knots. She will have a large dining room, capable of being used as a ball room, private rooms, etc., and a space will be set apart forward for the carriage of some cargo. She is expected to be ready by May, 1924.

A Victoria press dispatch says that under an agreement reached between the Dominion Minister of Marine and the British Columbia Government, six harbors: Vancouver, Victoria, New Westminster, Nanaimo, Esquimalt and Alberni, will remain under the Dominion Government's control, and that all remaining harbors in British Columbia will be controlled by the B.C. Government; that while Burrard Inlet, or Vancouver harbor proper, will remain under Dominion Government control, English Bay and False Creek, which goes into the heart of Vancouver's industrial harbor, will be controlled by the B.C. Government.

The automobile traffic between the mainland and Vancouver Island by the Bellingham, Anacortes, Port Angeles and Nanaimo ferries, during this year, totalled 6,847, an increase of 2,416 over 1922.

This increase is due to the development in the service by the C.P.R. and other companies. The C.P.R. operated its new motor car ferry Motor Princess during the season and, in addition, cars were carried on the C.P.R. steamships Charmer and Princess Patricia, the first named running between Bellingham and Sydney, and the other between Vancouver and Nanaimo. The Motor Princess made her last trip for the season Sept. 30, after which she was laid up for the winter in Victoria inner harbor.

The Pacific Salvage Co., Victoria, B.C., is carrying out extensive salvage operations on the wreck of the motorship Kennecott, ashore on Hunter's Point, Graham Island, the most northerly of the Queen Charlotte group, 600 miles from Victoria. The company's tug, Cordova, reached the stranded ship Oct. 10, soon after the casualty, and found the Kennecott to have been holed fore and aft, full of water, and lying broadside to the sea, with the waves breaking completely over her. The crew, who were on the beach, were taken to Seattle, Wash., by the Cordova, the captain and two men remaining by the Kennecott. The salvage tug Algerine left for Hunter's Point Oct. 11, but ran ashore on Oct. 13 on Brodie rock, Principi Channel, between Banks Island and the B.C. mainland north of Swanson Bay. The salvage tug Hercules was sent to her assistance, and she was refloated, apparently undamaged.

Toronto-Montreal-Vancouver Steamship Service.

The experimental service which was arranged under T. Harling & Son's management between Montreal and Vancouver, via the Panama Canal, and given by the s.s. Margaret Coughlan, which has recently completed the first east to west trip, is reported to have been a success. The Margaret Coughlan left Vancouver Oct. 4, for Fraser River points to load lumber, subsequently proceeding to Victoria to complete her cargo, and thence sailed for Montreal, via the Panama Canal, with lumber and canned salmon, after which she will take cargo for a second return trip to the Pacific coast. In the meantime, Robert Reford Co. announce that arrangements have been made with the Donaldson Line to operate a monthly service on the same route. The first ship will be the Argalia, scheduled to sail from Montreal Nov. 1. During the winter the sailings will be from St. John, N.B., and Halifax, N.S.

Since the foregoing was put in type, a Montreal press dispatch has been received stating that the s.s. Argalia will not sail as announced, but that this does not imply the cancellation of the new Montreal-Vancouver regular service, but merely its postponement until next spring.

The Kirkwood Line Ltd., announced recently that its s.s. J. H. Plummer will sail from Toronto, Nov. 20, for Victoria and Vancouver, B.C., via the Panama Canal, without calling at any foreign port. T. M. Kirkwood has been in Hamilton, Ont., in consultation with the harbor commissioners and the chamber of commerce, and it was stated Oct. 16, that an arrangement would probably be made for having the ship start from Hamilton.

H. B. Elworthy, Secretary, Pacific Salvage Co., Victoria, B.C., writes: "We read Canadian Railway and Marine World and enjoy it very much."

Privileges for United States Fishing Ships on Atlantic and Pacific Coasts.

Canadian Railway and Marine World has received an enquiry, as to the regulations under which U.S. fishing ships may enter Canadian Atlantic and Pacific coast ports, for certain purposes. The regulations are contained in two orders in council passed at Ottawa, Jan. 15, as follows:—

No. 73. His Excellency the Governor General, by and with the advice of the King's Privy Council of Canada, is pleased to grant, and doth hereby grant, authority to the Minister of Marine and Fisheries to issue licenses to United States fishing vessels on the Pacific Coast of Canada, which will permit them, during the present calendar year (1923) to enter any port in British Columbia for the following purposes, or any of them: 1, To purchase bait, ice, nets, lines, coal, oil, provisions and all other supplies and outfits; 2, To ship crews; 3, To land their catches without the payment of duty, and, (a) Tranship them in bond to any port in the United States; (b) Sell them in bond to such local dealer or dealers as may be properly authorized therefor by the Minister of Customs and Excise, which dealers shall export the same in compliance with the bonding requirements; (c) Sell them for use in Canada on payment of the duty. The fee on such license shall be at the rate of \$1 per vessel.

No. 74. His Excellency the Governor General, by and with the advice of the King's Privy Council, for and under the provisions of sect. 3 of chap. 47 of the Revised Statutes of Canada, 1906, is pleased to grant, and doth hereby grant, authority to the Minister of Marine and Fisheries to issue licenses to United States fishing vessels applying therefor, which will permit them to enter any port on the Atlantic coast of Canada during the present calendar year (1923) for the purposes of: (a) The purchase of bait, ice, seines, lines, and all other supplies and outfits; and (b) The transshipment of catch, and the shipping of crews. The fee on such license shall be at the rate of \$1 per vessel.

The Canadian Fisheries Association's executive committee adopted the following resolution at a meeting in Montreal recently:—"Whereas the United States Government has rescinded legislation which enabled our Atlantic fishing vessels to make use of their eastern ports, and whereas recent legislation in the U.S. renders it more difficult to place our fish commodities on the U.S. market, therefore be it resolved that the Dominion Government be urged to revoke all special privileges to U.S. fishing ships in our Atlantic ports not specifically provided for in the treaty of 1818, this to include the abolition of the so-called *modus vivendi*, which has been in vogue since the eighties of the last century, thus reducing the privileges of U.S. fishing vessels in our Atlantic ports to the 'humanities' so-called, viz.: wood, shelter, water and repairs; and that the Government be urged to take immediate action; also that a copy of this resolution be forwarded to the Government at Ottawa, and at Halifax, to the Premier, to Hon. Ernest Lapointe, Hon. W. S. Fielding, the press, and boards of trade in the maritime provinces, with a request for endorsement, and to members from fishing constituencies who sit in the House of Commons for the maritime provinces."

U.S. Hydrographic Service on Great Lakes.

The U.S. Navy Department's Hydrographic Office maintains branch hydrographic offices on the Great Lakes at Duluth, Minn.; Chicago, Ill.; Sault Ste. Marie, Mich.; Cleveland, Ohio; and Buffalo, N.Y. The branch hydrographic office maintained at Sault Ste. Marie for a number of years has had insufficient personnel to disseminate hydrographic information properly. In view of the vast amount of tonnage passing through the Sault Ste. Marie Canal, the Hydrographic Office made certain readjustments this year in personnel in order that masters passing through the locks may obtain the latest hydrographic information, and in turn the branch office may receive the latest hydrographic information from masters for dissemination. This office was opened on April 1 by Lt.-Commander B. K. Johnson, U.S.N., who will remain in charge during the navigational season. In addition, a clerk was detailed to the office and the necessary equipment supplied to issue a daily mimeographed memorandum of hydrographic information. These memoranda are made available to all masters passing Sault Ste. Marie. In order that lake mariners may derive the maximum benefits from this service, it is incumbent upon them to furnish the branch offices promptly with changes in aids or menaces to navigation. As many vessels on the Great Lakes are not fitted with radio and are therefore unable to benefit by the broadcasts of hydrographic information by radio, the service at Sault Ste. Marie is of considerable assistance to vessels not carrying radio apparatus.

The Great Lakes Naval Radio Station, call letters NAJ, commencing on the opening of navigation, broadcasted hydrographic bulletins at 10.45 a.m. and 5 p.m. (75th meridian time), on 4,650 meters C. W. This schedule is copied by all radio compass stations in operation on the Great Lakes and rebroadcasted by them on 600 meters, spark, at 11 a.m. and 5.15 p.m. Great Lakes rebroadcasts the same bulletin at 11 a.m. and 5.15 p.m. on 1,988 meters, spark.

The branch hydrographic offices at Duluth, Sault Ste. Marie, and Cleveland transmit messages to be broadcasted to the branch hydrographic office, Chicago. The Chicago office, from the information received prepares the bulletins and telephone them to the Great Lakes Naval Radio Station in time to be broadcasted on schedule.

All branch offices on the Great Lakes are making every possible effort to obtain information of changes in aids or menaces to navigation from the U.S. Army Engineers, Lighthouse Service, U.S. Coast Guard, masters, the Lake Carriers' Association, and ship operators, in order that bulletins may be disseminated promptly. These offices supply the local press and shipping interests with daily memoranda containing the latest hydrographic information.

Clothes that Passed in the Night.

Passenger (after the first night on board ship)—I say, where have my clothes gone?

Steward—Where did you put them?

Passenger—In that little cupboard there, with the glass door to it.

Steward—Bless me, sir, that ain't no cupboard. That's a porthole.—Reynold's Newspaper.

Protection of Aids to Navigation.

Owing to the destruction of a number of aids to navigation, and others having been tampered with recently, the Marine Department has issued a warning as follows:—

"The attention of mariners is specially drawn to the following regulations for the protection of lightships, buoys, beacons and floating lights, adopted by order in council May 20, 1907, under the provisions of Secs. 839 and 840 of the Canada Shipping Act, chapter 113, R.S.C. 1906, and now having the force of law:—"1. Any person who wilfully or negligently injures any lightship, buoy, beacon or floating light, or who removes, alters, or destroys the same, or who causes, or permits any vessel or tow under his control to ride by, make fast to or run foul of any such aforesaid aids to navigation shall be liable to a fine not exceeding \$200 for each offence. 2. Any person who, through unavoidable accident, or otherwise, has run down, dragged from its position or in any way injured any lightship, buoy, beacon or floating light, shall, as soon as practicable give notice of the accident to the customs officer at the nearest port. Failure to give such notice, shall be punishable with a fine not exceeding \$50 for each offence."

Bounty for Fishing Ships, Etc.

In answer to an enquiry it may be stated that the following was approved by the Governor-General on Jan. 26, and passed as order in council 155:—"The Committee of the Privy Council, on the recommendation of the Minister of Marine and Fisheries, advise that \$160,000, payable under the provisions of the Revised Statutes, 1906, chap. 46: 'An Act to encourage the development of the sea fisheries and the building of fishing vessels,' be distributed for the year 1922-23 upon the following basis:—

"Vessels.—The owners of the vessels entitled to receive bounty, shall be paid \$1 per registered ton, provided, however, that the payment shall not exceed \$80, and all vessel fishermen entitled to receive bounty, shall be paid \$6.95 each.

"Boats.—Fishermen engaged in fishing in boats, who shall also have complied with the regulations entitling them to receive bounty, shall be paid \$5.35 each, and the owners of fishing boats shall be paid \$1 per boat."

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Hamilton Electric Co., Ltd., Hamilton, Ont.—Charles E. Dickson, who entered the John Bertram & Sons Co.'s service at Dundas in 1900, as clerk in the Superintendent's office, under Alexander, now Sir Alexander, Bertram, and who in 1908 was appointed Cashier, which position he held continuously until his recent resignation, has bought an interest in

the Toronto & Hamilton Electric Co., of which he has been appointed Manager. It is an old established company, which was started by Mr. Dickson's uncle, Robert Lynch, and the late Hubert Job, B.Sc.

Guy Tombs Ltd., 285 Beaver Hall Hill, Montreal, has added a steamship ticket department to its general transportation business, as a result of Mr. Tombs' recent visit to Europe.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

Bureau of Explosives—A. H. McMullen, Inspector, lines east of Port Arthur, 354 New Union Station, Toronto.—D. W. McNabb, Inspector, lines west of Port Arthur, C.P.R. station, Winnipeg.

Canadian Car Demurrages Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.—Western Lines—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Electric Railway Association—Eustace Smith, Jr., 35 Yonge Street, Toronto.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke St., Montreal. Meetings at Montreal 2nd Tuesday, each month, except June, July and August, at 8.30 p.m.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, Chairman, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 Canadian National Rys. General Office, Montreal.

Hydro Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorfner, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cadomin Bldg., Winnipeg, Man.

Transportation Meetings, Etc., in 1923 and 1924.

The names of persons given below are those of the Secretaries, unless stated otherwise:—

Nov. 6 to 9.—Association of Railway Electrical Engineers, Chicago, Ill. J. A. Andreucetti, Chicago and Northwestern Ry., Chicago, Ill.

Dec. 4.—National Association of Railway and Utilities Commissioners, Miami, Florida. J. B. Walker, 49 Lafayette St., New York, N.Y.

Dec. 10 to 12.—American Association of Port Authorities, New Orleans, La. T. S. McChesney, New Orleans.

Jan. 15 to 17, 1924.—American Wood Preservers Association, Kansas City, Mo. P. R. Hicks, 1146 Otis Building, Chicago, Ill.

Jan. 17, 18.—National Association of Railway Tie Producers, Kansas City, Mo. J. T. Penny, T. J. Moss Tie Co., St. Louis, Mo.

March 11 to 13.—American Railway Association, Division IV, Engineering, Chicago, Ill. E. H. Fritch, 431 South Dearborn St., Chicago.

March 13, 14.—American Railway Association, Division IV, Signal Section, Chicago, Ill. H. S. Balliet, 30 Desey St., New York, N.Y.

April.—American Railway Association, Division VII, Freight Claims, New Orleans, La. L. Pilcher, 431 South Dearborn St., Chicago.

May.—Association of Railway Claim Agents, West Baden, Ind. H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

May 14 to 16.—American Railway Development Association, Savannah, Ga. W. H. Hill, Agriculture Agent, New York Central Rd., Chicago, Ill.

May 20 to 23.—Master Boiler Makers' Association, Chicago, Ill. H. D. Vought, 26 Cortland St., New York, N.Y.

June 3.—American Association of General Baggage Agents, Montreal. E. L. Duncan, 332 South Michigan Ave., Chicago, Ill.

June 18 to 20.—American Association of Railroad Superintendents, Buffalo, N.Y. J. Rothschild, 400 Union Station, St. Louis, Mo.

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Plans, specifications and form of contract to be entered into can be seen on and after this date at the office of the Deputy Minister of the Department of Trade and Commerce, Ottawa.

Copies of plans and specifications may be obtained on the payment of the sum of \$100.00. To bona fide tenderers this amount will be refunded upon the return of the above in good condition.

An accepted bank cheque on a chartered bank of Canada for a sum of \$50,000, and made payable to the order of the Minister of the Department of Trade and Commerce, must accompany each tender. A like amount of Dominion Bonds, properly assigned to the Minister will be accepted. This sum will be forfeited if the party tendering declines entering into contract for the work at the rates stated in the offer submitted.

The cheque or bonds thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque or bonds of the successful tenderer will be held as security or part security for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,
F. C. T. O'HARA,
Deputy Minister.

Department of Trade and Commerce,
Ottawa, October 5th, 1923.

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THE Canadian Pacific Railway, through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In the Reference Libraries maintained at Montreal, Chicago and New York are complete data on natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added. No charge or obligation attaches to this service. Business organizations are invited to make use of it.

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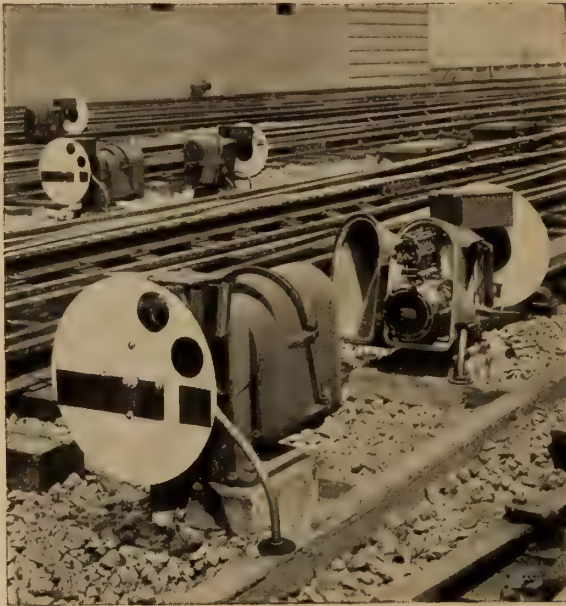
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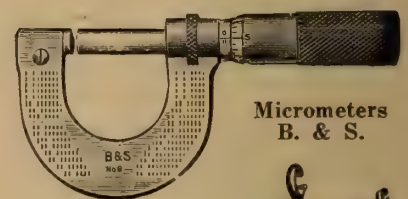
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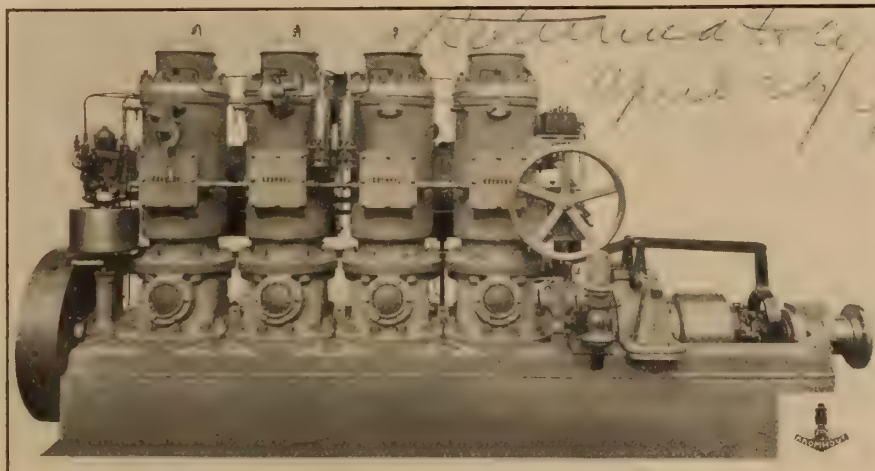
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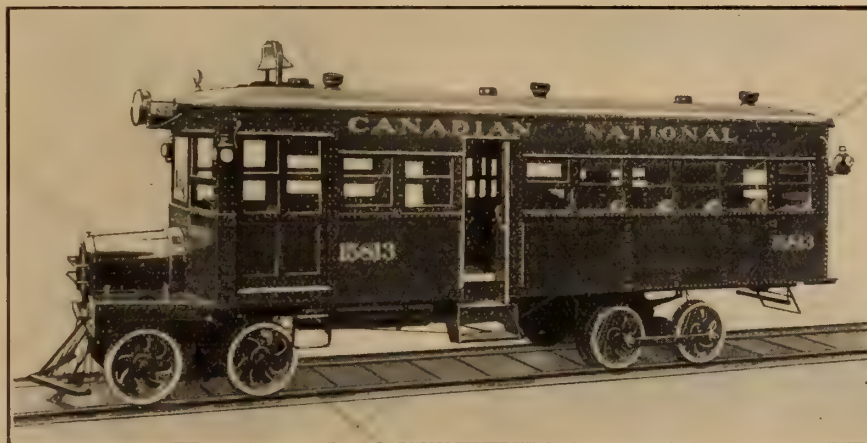
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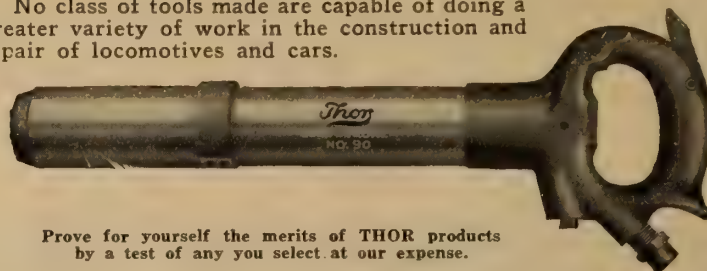
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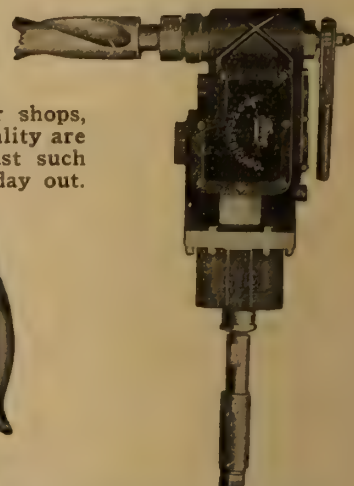
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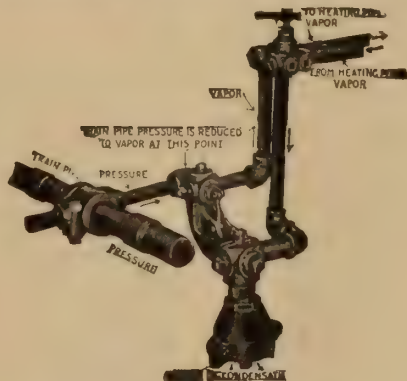
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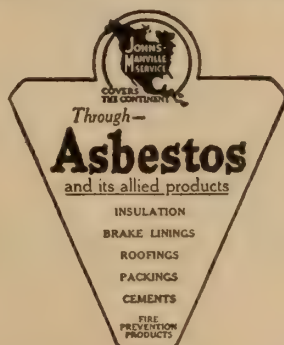
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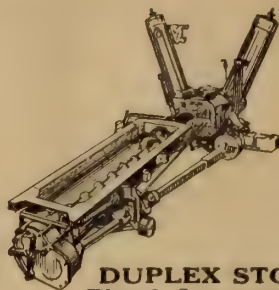
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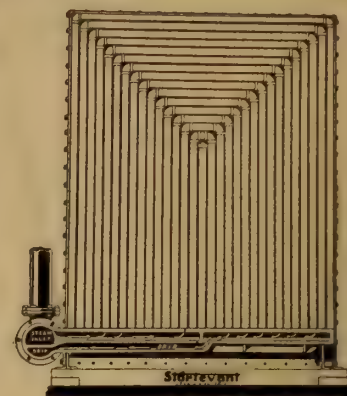
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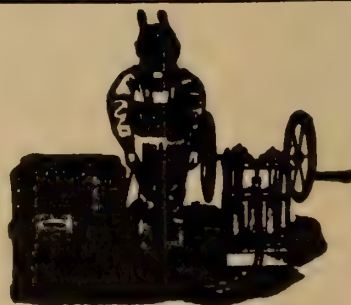
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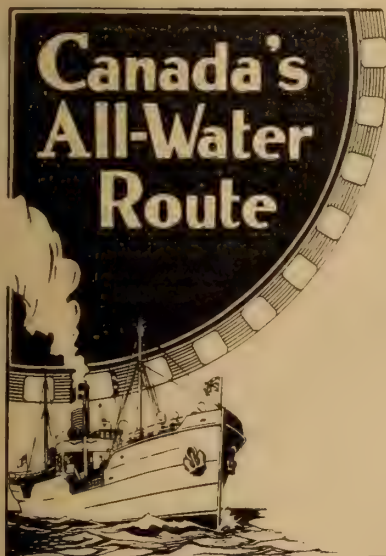
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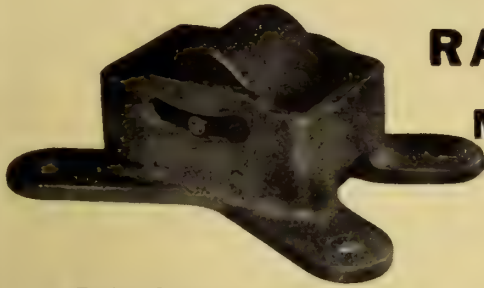
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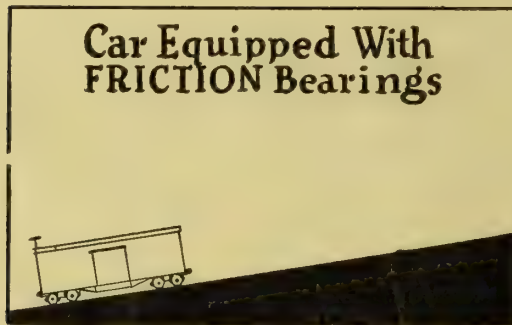
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Number 310.

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See page 581 for
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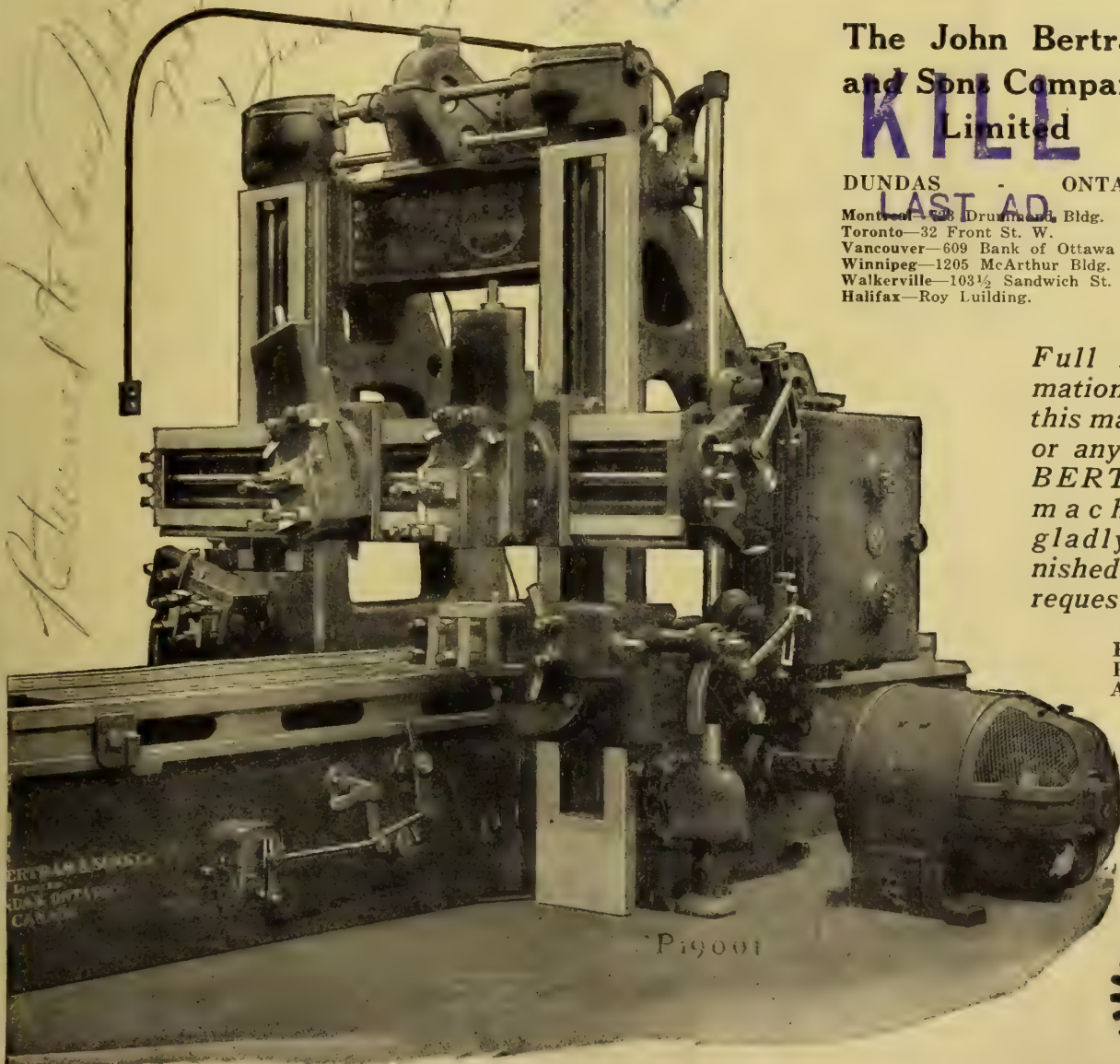
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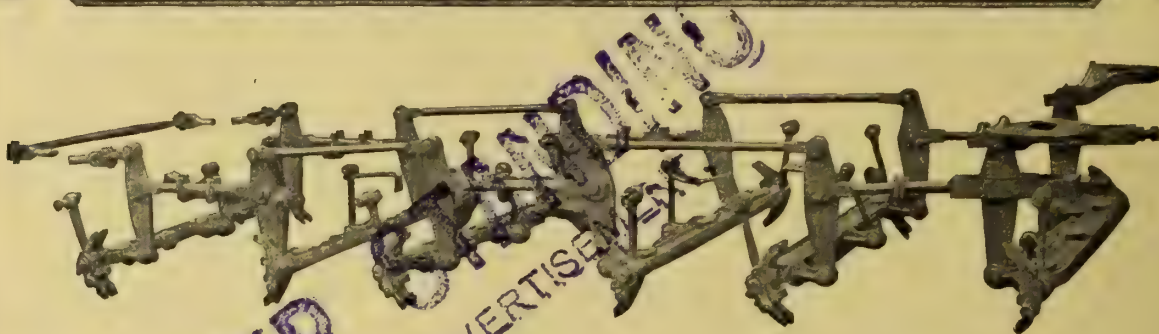
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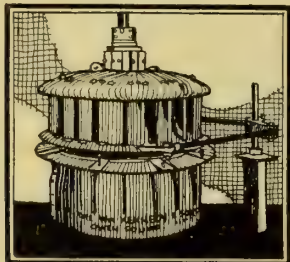


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MONTREAL, QUEBEC, CANADA.

Get Your
**WATER-POWER PLANT
MACHINERY** — *from*

KENNEDYS · OWEN · SOUND ·



Turbines
Vertical & Horizontal
Single & Double Runners

In special Penstocks with special fittings to suit every requirement.

Turbine Parts
Headgate and Stoplog Winches
Bridgetrees—Hoists
Cut or Cast Tooth Gears

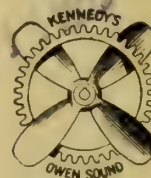
Special Machinery built to Engineers' Specifications.

The **Wm. KENNEDY & SONS Limited**
OWEN SOUND · ONTARIO

COBALT
M. B. SAUNDERS,
8 Silver St.
'Phone 153

MONTREAL
H. C. KENNEDY
232 St. James St.
'Phone Main 394

HALIFAX
C. A. FOWLER
Tramway Bldg.
'Phone Sackville 1700



KILL
LAST AD.

Service shows the most successful car roof to be the

All Steel Dry Lading Roof

which made possible the following specifications:

No. 1. That should be weather-proof under all conditions, also rust-proof, fire-proof and burglar-proof.

No. 2. That should not require maintenance for at least ten years.

No. 3. That should be of low deadweight and give the car a low center of gravity.

No. 4. That should lessen strain on the superstructure of the car when the car is in motion.

No. 5. That should strengthen, rather than detract, from the strength of the car frame.

No. 6. That should give the greatest interior capacity and the lowest clearance limits.

No. 7. That should be flexible enough to conform to every service condition of the car.

No. 8. That should be possible to use again on the same or another car, even in case of partial or total destruction of the rest of the car by fire or wreck.

No. 9. That should not require roofing boards.

No. 10. That should be of low first cost.

No. 11. That should permit of inspection on the part of any shipper by merely closing the doors of the car and if no rays of light are seen through the roof, the shipper to consider it a weather-tight roof.

No. 12. That should be so constructed that the carlines, purlines and ridge, tie the sides and ends of the car together firmly, so that the weather-proof roof has only the one duty of protecting the contents of the car from the elements.

HUTCHINS CAR ROOFING CO., LTD.

MONTREAL

Westinghouse Electric Locomotives



50-Ton, Class B. Westinghouse Electric Locomotive

are successfully fulfilling the passenger and freight requirements of many electric roads throughout the country in city and interurban service.

To meet the demand for moderate capacity units, Westinghouse Electric Locomotives have been divided into Classes A, B, C and D.

Class A, 25-35 Tons Class C, 40-50 Tons
Class B, 35-50 Tons Class D, 50-65 Tons

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Bank of Hamilton Bldg.
HALIFAX, 105 Hollis Street
CALGARY, Canada Life Bldg.

MONTREAL, 285 Beaver Hall Hill
FORT WILLIAM, Cuthbertson Block
VANCOUVER, Bk. of Nova Scotia Bldg.

OTTAWA, Ahearn & Soper, Ltd.
WINNIPEG, 158 Portage Ave. E.
EDMONTON, 211 McLeod Bldg.

Repair Shops:

MONTREAL—512 William St.
WINNIPEG—158 Portage Ave. E.

VANCOUVER—1090 Mainland St.

TORONTO—366 Adelaide W.
CALGARY—316 Third Ave. E.



Railroad Lubrication



Worth Saving

The expensive equipment represented by the cylinders, pistons, bearing and motion parts of the locomotive; the journals and brasses of cars and coaches; the gears and pinions of electric motors cars; the machinery of the shop or power house — all parts of the largest investment of steam and electric railways—is certainly entitled to careful consideration as to the protection and maintenance that will insure its full service life.

Galena lubricants were developed and perfected for exactly this purpose. Their superior quality is maintained for the sole reason of furnishing adequate protection to this class of equipment. Good quality is as essential to the lubricant, as to the lubricated part itself, if economy and efficient operation is to be secured. None but the best of oils are capable of withstanding the stress of railway service without breaking down.

It has been demonstrated to the satisfaction of many railroads—steam and electric—that Galena lubricants are capable of literally saving an amount equal to their cost through the extra service attained and the lessened depreciation in equipment—when compared with the performance of the ordinary refinery products marketed for this use. The matchless service records established by Galena Oils are convincing evidence of their superiority.

*"More miles to the pint;
Better service to the mile."*



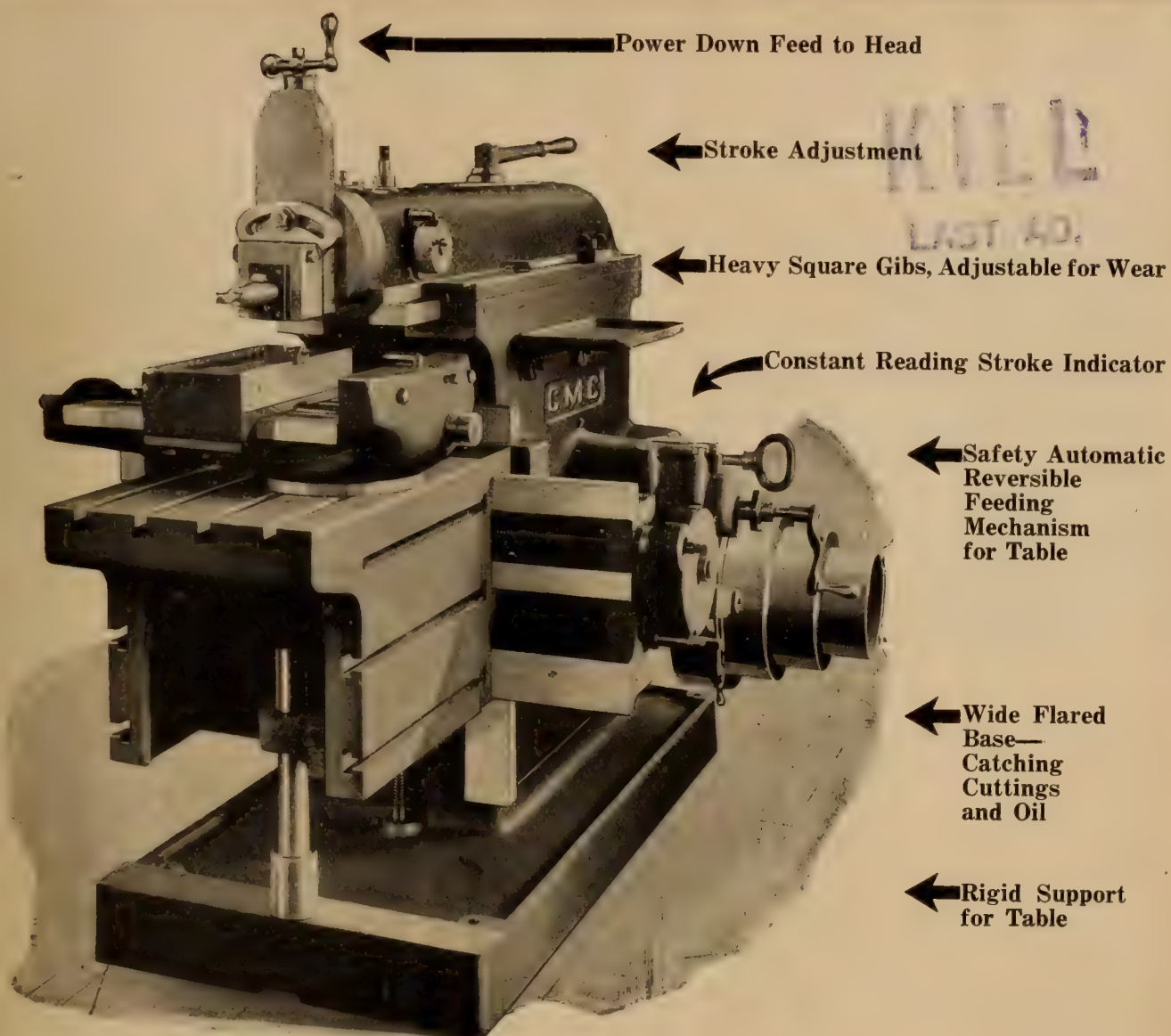
Galena-Signal Oil Company

Toronto

of Canada, Limited

Montreal





26" x 30" Back Geared Crank Shaper

Our exclusive design of feed change on this shaper is an outstanding feature of first importance.

The feed can quickly and easily be changed while the machine is in operation without the slightest danger of accident to the operator; not so on other makes.

Other equally desirable features are found in this shaper.

Our bulletins describing these details is yours for the asking.

CANADA MACHINERY CORPORATION

LIMITED

GALT - ONTARIO

Manufacturers of Wood and Ironworking Machine Tools

Toronto Sales Office

721 Bank of Hamilton Building



"Brownhoist Cranes are Unsurpassed"

Brownhoist builds cranes, buckets, chain and belt conveyors, bins and other handling equipment. The cranes are mounted on creepers or 8 or 4 wheel railroad trucks and are powered by gas engine, steam or electricity.

"Our company has used several makes of locomotive cranes and we know by comparison that the Brownhoist is not surpassed by any other," says the Franc Slag Company. This company operates many slag and stone crushing plants in Ohio and Michigan and have used Brownhoist cranes for years.

The Brownhoist at their Toledo plant handles an average of 500 tons of slag a day at a cost of 4 cents per ton. Besides its regular work of handling crushed slag this Brownhoist does all kinds of odd jobs around the plant.

With the increasing cost and difficulty in getting labor the money-saving possibilities of a Brownhoist are worthy of your careful study. Write for a copy of catalog K and let us go into your problem with you.

The Brown Hoisting Machinery Co., Cleveland, Ohio

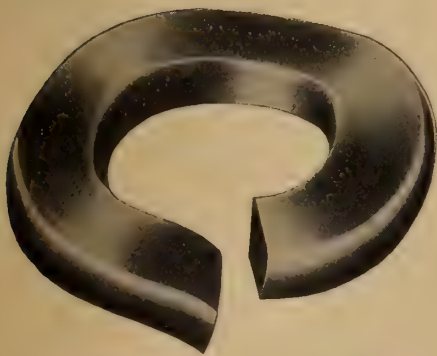
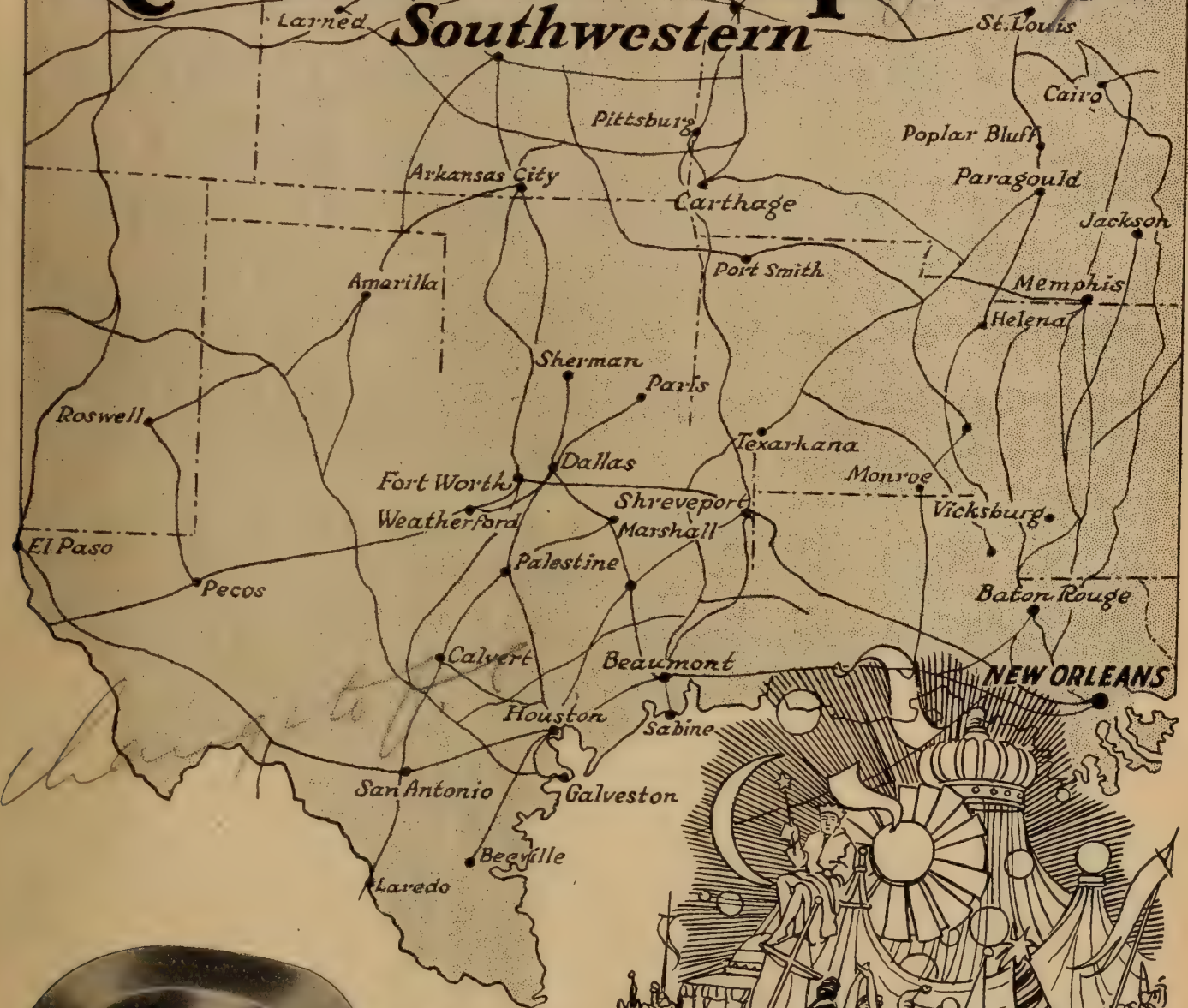
Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

BROWNHOIST

M A T E R I A L H A N D L I N G M A C H I N E R Y

Routes of Hipower

Southwestern



The Routes of **HIPOWER**
Lead to Economy

Watch for your road
in this series

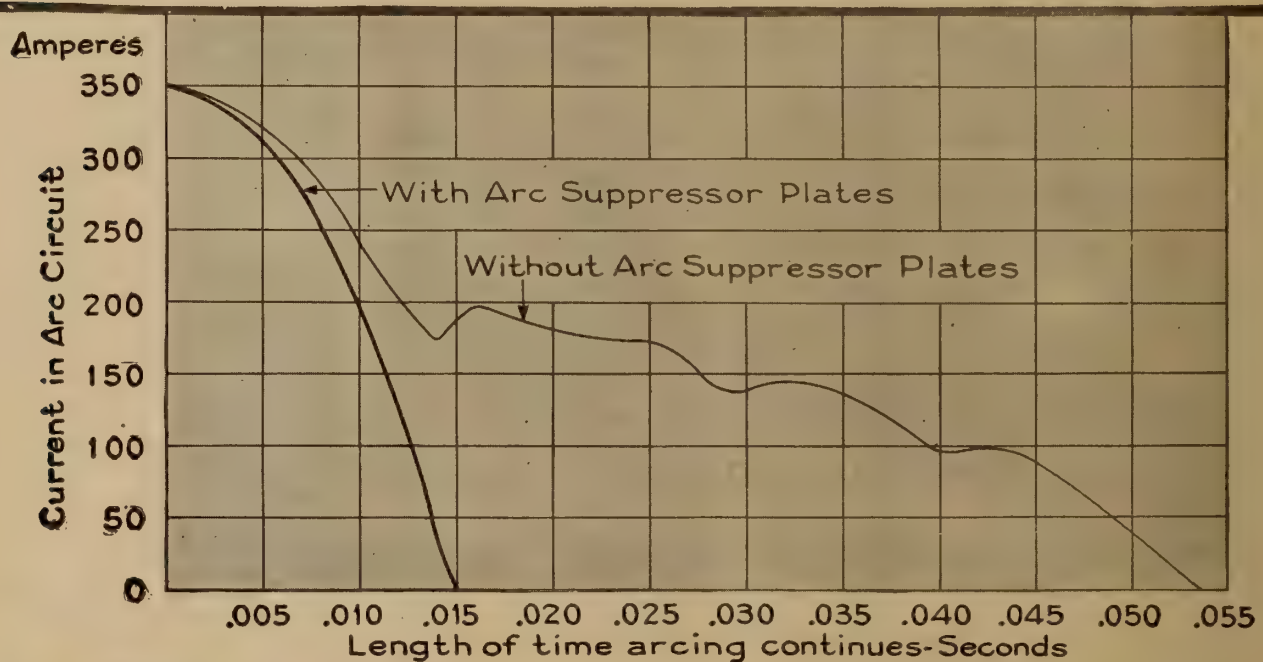
FESTIVE time in old New Orleans—whirling carriages and dancing throngs—all under the mystic glow of swaying lanterns and a southern moon—how enticing to the pleasure lover who journeys thence over routes secured by **HIPOWER**

HIPOWER adequately, economically and permanently maintain the bolted security of track joints.

That's why they are universally used.

THE NATIONAL LOCK WASHER CO.
Newark, N.J., U.S.A.

What C-G-E Arc Suppressor Plates Do



C-G-E Arc Suppressor Plates are installed opposite the fingers where there is the most arcing. They narrow the arc passages, which increase the resistance of the arc and the cooling effect of the plates.

NOTE the difference in time required to disrupt the arc in a K-35 controller as shown by actual test. This difference means there's considerably less burning of controller fingers, segments, and arcing plates when the equipment is protected with C-G-E Arc Suppressors.

Consider the value of these auxiliary plates in reducing maintenance costs. They reduce carbonization and eliminate much of the trouble from pitting of contacts. Modern controllers are equipped with them to give better, longer service.

Arc Suppressor Plates can be used to advantage in any C-G-E controller having individual finger blow-outs. Installation requires only a few minutes. They are inexpensive. Try them.

"Made in Canada" by

Canadian General Electric Co., Limited

HEAD OFFICE  TORONTO

Branch Offices: Halifax, Sydney, St. John, Montreal, Quebec, Sherbrooke, Ottawa, Hamilton, London, Windsor, Cobalt, South Percupine, Winnipeg, Calgary, Edmonton, Vancouver, Nelson and Victoria.

TO APPLY STOKER SIMPLY BOLT IT IN PLACE

THE DUPONT SIMPLEX STOKER is designed to fit the engine.

It's not a big job to apply a DUPONT SIMPLEX STOKER.

There are no changes to be made in the boiler back head.

Adjustments for stoker weight, such as increased bearing areas or heavier springs, are not required.

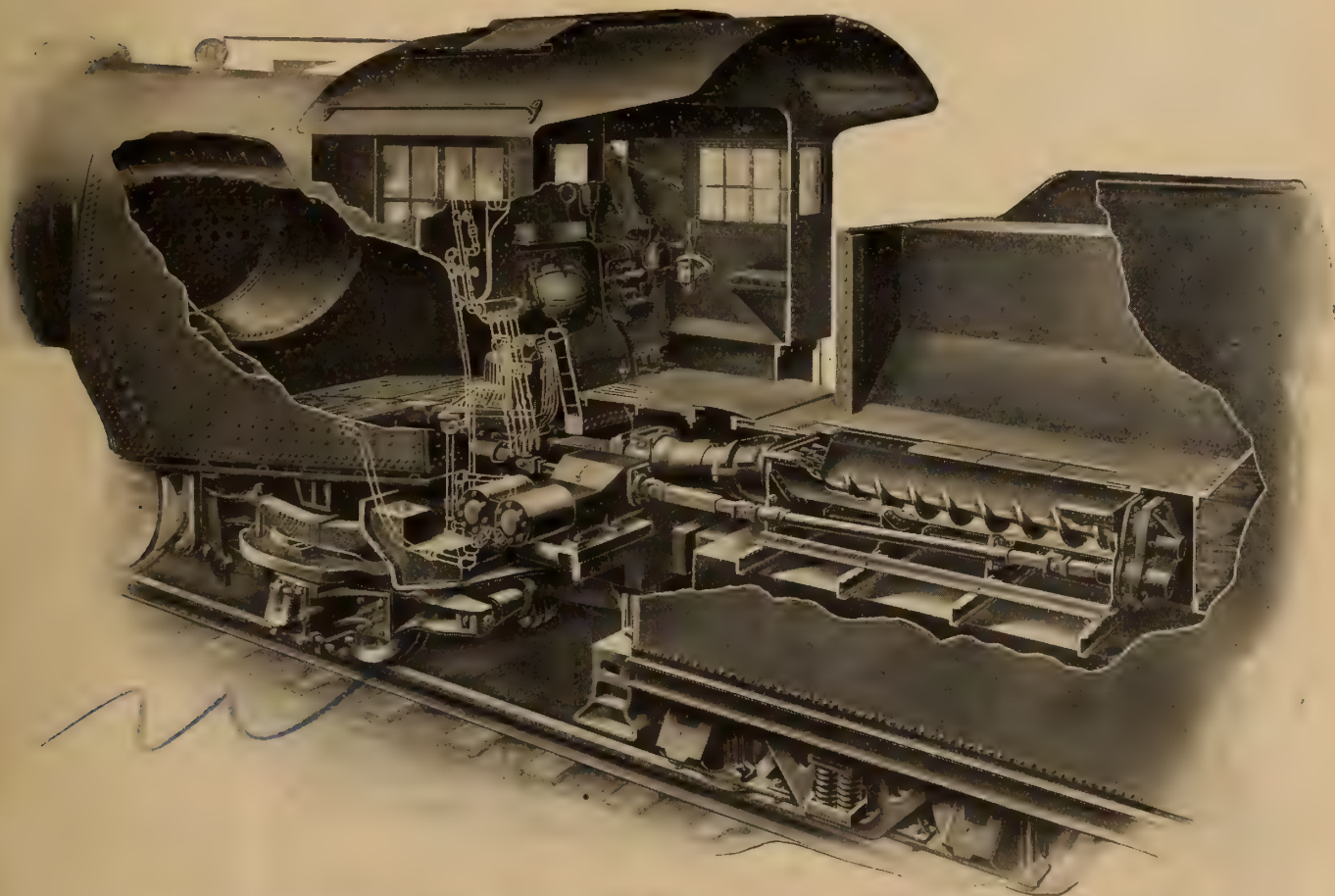
The DUPONT SIMPLEX STOKER comes to your shop in three simple units designed to fit the locomotive. Application is largely a matter of bolting these units in place.

STANDARD STOKER COMPANY, INC.

Grand Central Terminal, New York, N.Y.

McCormick Bldg., Chicago, Ill. duPont Bldg., Wilmington, Del.

Foundries and Works, Erie, Pennsylvania



DUPONT-SIMPLEX STOKER

Scientific Treatment of Boiler Feed Water



Dearborn

Leading the Way For 36 Years

For 36 years Dearborn has maintained that accurate analysis of the boiler feed water, proper reagents compounded for the injurious salts found and laboratory control of changing conditions, constitute the only effective method of water treatment.

While other propositions have been tried out from time to time through the years, none have withstood the test of actual service. The injurious salts in the water must be changed, and made harmless—so-called “metal” or “protective” coatings, etc., are useless, otherwise, and “one formula compounds” cannot meet the problems presented by different supplies of varying character.

We keep constantly ahead of our subject—and give individual attention in our laboratory, engineering and manufacturing departments to each customer's need.

—With this result:

For 36 years we have gained and held an average of more than three new accounts daily.

Have you tried Dearborn Service? If not, will you talk over your feed water problems with the Dearborn Salesman next times he calls?

Dearborn Chemical Company
Limited

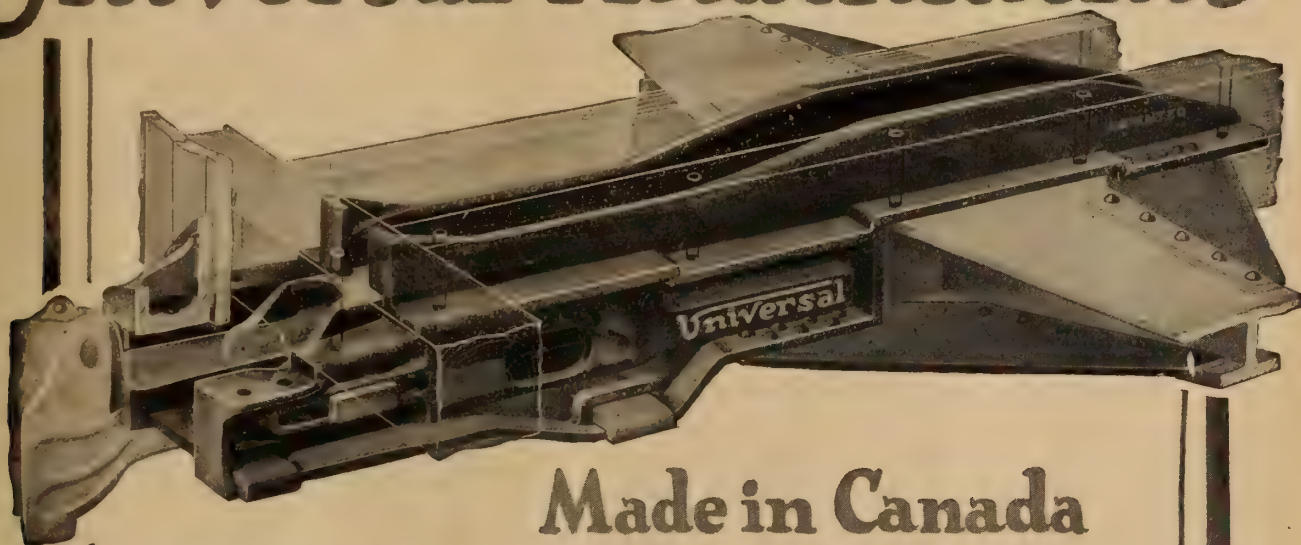
2454-2464 Dundas St. W. TORONTO, CANADA

Cardwell Friction Draft Gear



Made in Canada

Universal Attachments



Made in Canada

**Reinforcing Draft Arms
Tandem Spring Draft Rigging
Twin Spring Draft Rigging
Frictionless Side Bearings
Draft Lugs or Plates
Cast Steel Yokes**

WEBB. G. KRAUSER
TRANSPORTATION BLDG. MONTREAL

Advertising Made to Serve You

Merchandise lives or dies as it does or does not meet a human need. Advertising is subject to the same law of service. The real measure of its value is what it *gives*, not what it gets.

But you are not interested in *all* advertising any more than you are in all merchandise. That is one big reason why you have a highly specialized Business Paper in your field such as the one carrying this advertisement.

LIST OF MEMBERS

Each has subscribed to and is maintaining the highest standards of practice in its editorial and advertising service.

Advertising and Selling
American Architect & Architectural Review
American Blacksmith, Auto & Tractor Shop
American Exporter
American Funeral Director
American Hatter
American Machinist
American Paint Journal
American Paint & Oil Dealer
American Printer
American School Board Journal
Architectural Record
Automobile Dealer and Repairer
Automobile Journal
Automotive Industries

Baker's Helper
Bakers Weekly
Boiler Maker (The)
Boot and Shoe Recorder
Brick and Clay Record
Building Age & The Builders Journal
Buildings and Building Management
Building Supply News

Canadian Grocer
Canadian Machinery & Manufacturing News
Canadian Railway & Marine World
Candy and Ice Cream
Chemical & Metallurgical Engineering
Clothing and Furnisher
Coal Age
Concrete
Cotton

Daily Metal Trade
Domestic Engineering
Dry Goods Economist
Drygoodsman
Dry Goods Reporter

Electric Railway Journal
Electrical Merchandising
Electrical Record
Electrical World
Embalmers' Monthly
Engineering and Mining Journal-Press
Engineering News-Record

Factory
Farm Implement News
Fire and Water Engineering
Foundry (The)
Furniture Manufacturer and Artisan

Garment Weekly (The)
Gas Age-Record
Good Furniture Magazine
Grand Rapids Furniture Record
Haberdasher (The)
Hardware Age
Hardware & Metal

How It Works for You

What it does for you and your field editorially is self evident, but its *aditorial* service is just as vital. Instead of a buyer having to depend upon gossip, hearsay and dribbles of information from this or that source, he gets it all between two covers.

Yet advertising is NOT an added expense, but an improved distributive process, which takes the place of slower, more costly and less efficient methods.

That is why it pays to read advertising even more than it pays to advertise. Especially if you read it in papers which have met the exacting requirements of membership in The Associated Business Papers, Inc., for one of its standards of practice requires that a paper must decline any advertisement which has a tendency to mislead or which does not conform to business integrity.

You are invited to consult us freely about Business Papers or Business Paper Advertising

LIST OF MEMBERS (Continued)

Heating and Ventilating Magazine
Hide and Leather
Hospital Management
Hotel Monthly

Illustrated Milliner
Implement & Tractor Trade Journal
Industrial Arts Magazine
Industrial Engineer
Inland Printer
Iron Age
Iron Trade Review

Lumber
Lumber World Review

Manufacturers' Record
Marine Engineering & Shipping Age
Marine Review
Millinery Trade Review
Mill Supplies
Modern Hospital (The)
Motor Age
Motorcycle and Bicycle Illustrated
Motor Truck
Motor World

National Builder
National Cleaner & Dyer
National Hotel Review
National Laundry Journal
National Miller
National Petroleum News
Nautical Gazette
Northwest Commercial Bulletin

Oil News
Oil Trade Journal

Power
Power Boating
Power Plant Engineering
Printers' Ink
Purchasing Agent

Railway Age
Railway Electrical Engineer
Railway Engineering & Maintenance
Railway Mechanical Engineer
Railway Signal Engineer
Retail Lumberman
Rock Products
Rubber Age

Sanitary & Heating Engineering
Shoe and Leather Reporter
Shoe Retailer
Southern Engineer
Sporting Goods Dealer

Tea and Coffee Trade Journal
Textile World

Welding Engineer
Western Contractor
Wood-Worker (The)

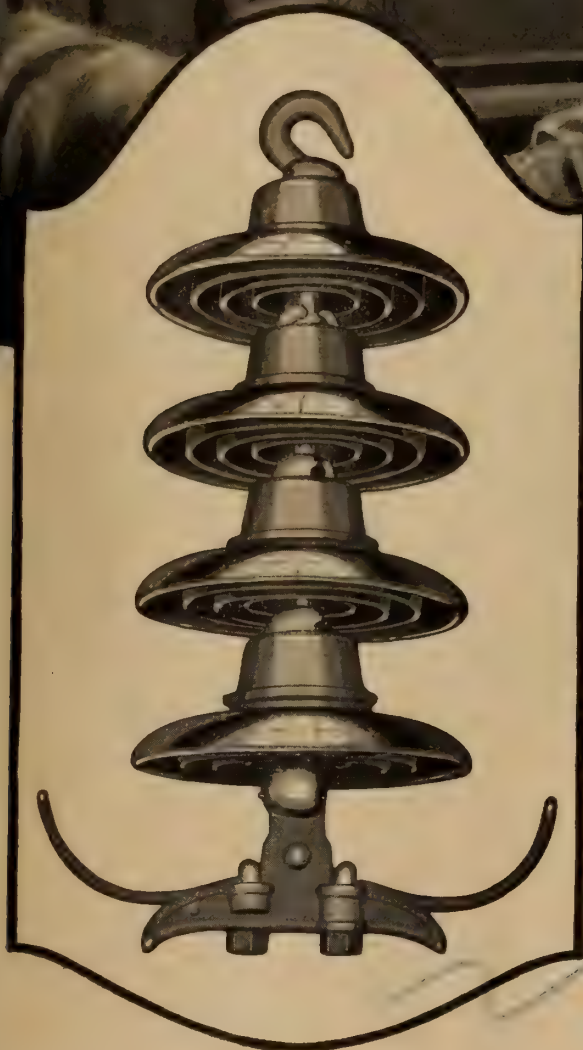
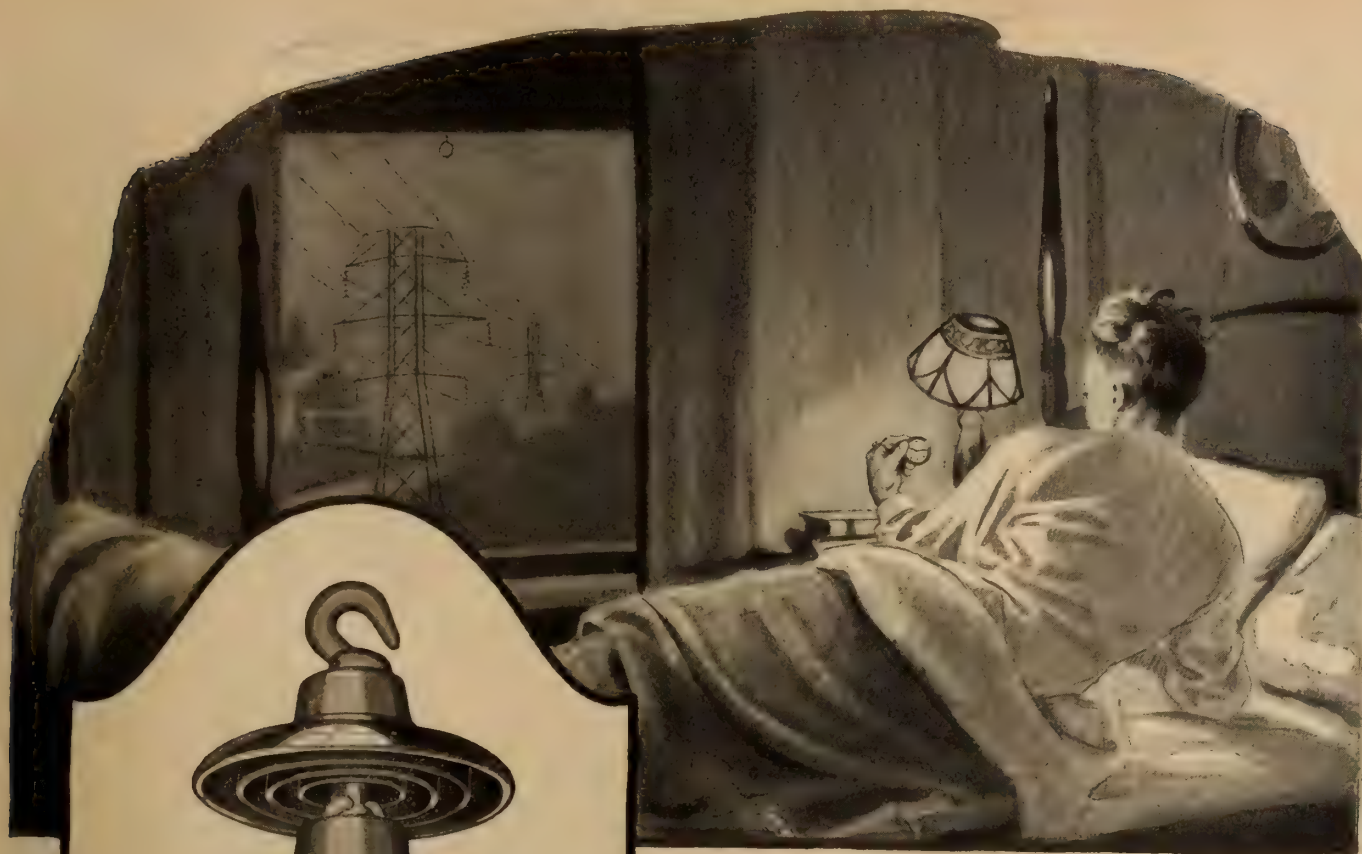
THE ASSOCIATED BUSINESS PAPERS, INC.

JESSE H. NEAL, Executive Secretary

HEADQUARTERS:

220 West 42nd Street

NEW YORK CITY



CONTINUOUS SERVICE

WHILE you sleep, while you work and while you play your watch is ticking busily—ready to tell you the time whenever you call on it.

And for every tick of the watch there is stress and strain on the insulators that carry your transmission lines. Yet the line must be reliable so, when a customer pushes the button that lights his lamp or throws the switch that starts a factory, he will be served.

O-B Insulators are helping maintain continuous service on transmission lines all over the world.

O-B Designs *Improve* the Lines

Dominion Insulator & Mfg. Co., Limited

Manufacturing Ohio Brass Company Products in Canada

Niagara Falls

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Ontario

Canada's Commerce Carriers

Canadian Government Merchant Marine, Limited



REGULAR FREIGHT, PASSENGER and MAIL SERVICE

Every three weeks from Montreal in Summer and Halifax, N.S., in Winter,
To Bermuda, Bahamas, Jamaica, and British Honduras.

Reasonable Fares. Superior Passenger Accommodation. Excellent Cuisine.
VACATION CRUISES (Summer and Winter)

REGULAR FREIGHT SERVICES

From Montreal and Quebec in Summer
From St. John, N.B., and Halifax,
N.S., in Winter

- To London and Antwerp, Cardiff and Swansea, fortnightly.
- To St. Kitts, Antigua, Barbadoes, Trinidad and Demerara, fortnightly.
- To Australia and New Zealand, monthly.
- To Charlottetown, P.E.I., and St. Johns, Nfld., every 21 days.

From Vancouver, B.C.

- To the United Kingdom (Avonmouth).
- To Australia and New Zealand, monthly.
- To China and Japan, monthly.
- To India and Straits Settlements.

Pacific Coastal Service
(Sailings Weekly)

- From Vancouver and Vancouver Island ports,
- To Seattle, San Francisco, Wilmington, Blainey, Nanaimo, Powell River, Ocean Falls, Astoria, San Pedro, Victoria.

B. C. KEELEY, Pacific Coast Manager, Vancouver, B.C.
WM. PHILLIPS, European Manager, 17-19 Cockspur St., London, S.W.1., Eng.

F. G. WOOD, General Ontario Freight Agent, Toronto.
W. A. CUNNINGHAM, Traffic Mgr., Montreal.

R. B. TEAKLE, General Manager, 230 St. James St., Montreal.



Canadian National Railways

50

*Delivery
Points*

CHILLED IRON WHEELS
for railway and street car
service. Capacity 20,000 per
day. 25,000,000 in service.

ASSOCIATION OF MANUFACTURERS
OF CHILLED CAR WHEELS
1847 McCormick Bldg., Chicago

THE map above shows the location of the 50 foundries in the United States and Canada, represented by the Association of Manufacturers of Chilled Car Wheels.

Chicago, 4	Sayre, Pa.
St. Louis, 2	Berwick, Pa.
Buffalo, 4	Albany
Pittsburgh, 2	Toronto
Cleveland, 2	New Glasgow, N. S.
Amherst, N. S.	Madison, Ill.
Montreal	Huntington, W. Va.
Mich. City, Ind.	Wilmington, Del.
Louisville	Houston, Tex.
Mt. Vernon, Ill.	Hannibal, Mo.
Ft. Wayne, Ind.	Reading, Pa.
Birmingham	Baltimore
Atlanta	Richmond, Va.
Savannah	Ft. William, Ont.
Boston	St. Thomas
Detroit	Hamilton
St. Paul	Ramapo, N. Y.
Kansas City, Kan.	Marshall, Tex.
Denver	Los Angeles
Tacoma	Council Bluffs
Rochester, N. Y.	

**American Railroad Association
Standards**

650 lb. wheel for 60,000 Capacity Cars
700 lb. wheel for 80,000 Capacity Cars
750 lb. wheel for 100,000 Capacity Cars
850 lb. wheel for 140,000 Capacity Cars

The Standard Wheel for Seventy-Two Years

CHILLED IRON WHEELS

ELECTRICAL CONDUCTORS TELEPHONE TELEGRAPH AND POWER CABLES



Northern Electric Company
LIMITED

MONTREAL
HALIFAX
QUEBEC

TORONTO
HAMILTON
LONDON

WINDSOR
WINNIPEG
REGINA

CALGARY
EDMONTON
VANCOUVER

"Makers of the Nation's Telephones"

MANUFACTURING

Manual Telephones
Automatic Telephones
Wires & Cables
Fire Alarm Systems
Radio Sending and
receiving Equipment

DISTRIBUTING

Construction Material
Illuminating Material
Power Apparatus
Household Appliances
Electrical Supplies
Power & Light Plants
Marine Fittings



BOLTS

RIVETS
NUTS
WASHERS

*From Ore to Finished Product
— All Within the Empire*

All sizes and shapes for every purpose, including machine and carriage bolts and nuts (square or hexagonal), with rolled or cut thread; track bolts and nuts (square or hexagonal).

NOVA SCOTIA STEEL & COAL COMPANY, LIMITED

A Unit of The

BRITISH EMPIRE STEEL

CORPORATION LIMITED

CANADA CEMENT BUILDING

MONTREAL, CANADA



Track supports for the new Union Station in Chicago are of concrete. This picture shows one of the tracks laid on short concrete cross ties mounted on a ten-foot wide concrete base.

25 Acres of Concrete in Chicago Union Station

Practically all tracks in the new Union Station in Chicago, for the joint use of four large railroads will be placed on concrete slabs.

In the train shed proper the rails will rest on short ties embedded in concrete roadbed, that in turn rests on a concrete slab 10 inches thick and 14 feet wide. All approach tracks, with the exception of one section 800 feet long, laid three years ago, will be laid in ballast on top of a 10-inch concrete slab. The total area of concrete slab track support will be slightly over 25 acres.



On many of the Chicago Union Station tracks, a concrete base is used and the track laid and ballasted on it in the usual manner.

Four Chicago Railways Invest In Permanence And Safety

PROBABLY no other railway tracks in the world will be subject to more severe wear than those now being completed at the new Union Station at Chicago. For that reason practically all tracks will be laid on concrete slabs.

The officials of these railways found such a striking reduction in maintenance costs effected by a section of concrete track support laid in 1920, they did not hesitate to adopt concrete construction for this subsequent work.

The use of concrete for railroad construction has long since passed the experimental stage. Each year sees a decided increase in its use for this type of construction where permanence and lower maintenance cost is the paramount consideration.

Railroad officials have come to realize that the same qualities that have won for concrete nation-wide recognition as the ideal paving material to insure Highways of Permanence are the qualities necessary to insure for railroad construction low maintenance cost, permanence and safety.

**CANADA CEMENT
CONCRETE
FOR PERMANENCE**

*Specify
CANADA CEMENT
Uniformly Reliable*

We maintain a Service Department to co-operate in all lines of work for which Concrete is adapted. Our Library is comprehensive and is at your disposal at all times without charge.

Canada Cement Company Limited
Canada Cement Company Building
Phillips Square, Montreal

Sales Offices at:

MONTREAL

TORONTO

WINNIPEG

CALGARY



Steel Frame Motor Car. 50 built 1922-3 for Toronto Transportation Commission.

ELECTRIC CARS

for City, Suburban and Interurban Service

MOTOR CARS

SWEEPER CARS

TRAILER CARS

SPRINKLER CARS

PASSENGER CARS

DUMP CARS

FREIGHT CARS

SNOW PLOUGHS

ET CETERA

KILL

LAST AD.

Canadian Car & Foundry Company, Limited

General Offices
307 Craig Street W.
MONTREAL



Steel Frame Trailer Car. 100 built 1923 for Toronto Transportation Commission.

St. John Drydock & Shipbuilding Co., Limited

DRYDOCK AND MARINE SLIPWAY

St. John, New Brunswick, Canada

Ship Repairs of All Kinds
To
Hull and Machinery

Drydock

1150 Feet Long With 42 Feet
Draught Over Sill Can Be
Used As One Dock or Two
Separate Docks 650 Ft. and
500 Ft. Each.

Marine Slipway

All Steel Construction
Capable of Hauling
Out Vessels up to
1800 Tons.

Both Drydock and Marine Slipway Fully Equipped
For Temporary and Permanent Repairs

Equipped With

Large Dock Crane, Machine Shop, Boiler Shop, Plate
Shop, Locomotive Cranes, Pattern Shop, Joiner Shop

Towing and Salvage

St. John, N.B.

Quebec, P.Q.

Towing and Marine Salvage Work of All Kinds Undertaken

Tugs

"Gopher"

"J. H. Hackett"

"Margaret A. Hackett"

"Ballindalloch"

"Katherine K"

Salvage Tug "Ocean Eagle" stationed at Sydney, N.S. from May to December
and at Halifax, N.S. from December to May.

Tugs "Ocean Eagle" and "Gopher" equipped with wireless.

Owners

St. John Drydock & Shipbuilding Co., Limited



Railway
Switch Ropes
and
Wre king
Cables

We make a wide variety of
**Locomotive Switching, Wrecking or
Ballast Unloader Cables for
Ordinary and Special Service**

The DOMINION WIRE ROPE Co., Limited
Head Office: MONTREAL. Branches: TORONTO, WINNIPEG

“MARION” Railway Type Shovels *Can Now Be Furnished With* **Crawler Trucks**

**“MARION”
CRAWLER
TRUCKS**



**THEY MAKE HARD
GOING EASY**

are now perfected to such a degree that we can genuinely urge the abandonment of other types of mounting for railroad-type shovels. The inefficiency of common labor, combined with the high cost of track materials—ties, rails and jack blocks, and the resultant loss of time due to slower move-ups—make these new trucks especially desirable and economical.

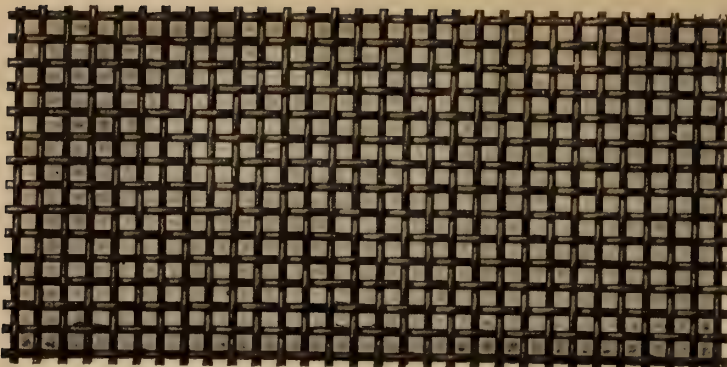
**With these Trucks “MARION” Shovels are
*Always Ready for Work***

**“Jordan” Spreaders, “Industrial Works” Cranes
RR. & Contractors’ Equipment**

Branch:
**108 Mail Building
TORONTO**

F.H.Hopkins & Co.
Limited

Head Office:
MONTREAL



Greening's Wire Cloth and Screens

The superiorities that users have come to expect from any article bearing the name Greening results from the highest standards of manufacture plus a long and intimate knowledge of the conditions of service under which their products are used.

For more than sixty years the B. Greening Company have kept accurate records of all statistics that affect the wear, service and cost. These statistics are at the disposal of anyone and frequently save purchasers time and money.

THE **B. GREENING WIRE CO., LIMITED**

HAMILTON, ONTARIO

MONTREAL

WINNIPEG

Kearney & Foot Great Western American Arcade Globe **FILES**

KILL Human Energy Costs **More Than Files** LAST AD.

The wages you pay to a workman bulk larger than the cost of the file he uses.

If he is wasting his time and energy with a dull file, **YOU** are suffering.

Keep him supplied with fresh, keen files; scrap those that have lost their original keenness. For long service, buy the above standard brands.

Made in Canada by
NICHOLSON
FILE COMPANY
Port Hope, Ont.

Putnam

STORAGE BATTERY

Reserve lead determines plate life—possible life by quantity available—actual life by rate at which it is consumed.



THE
SAFETY
CAR HEATING AND
LIGHTING
COMPANY



MONTREAL

NEW YORK

What is Rivalac?

It is a protective paint for iron and steel that will positively protect against rust.*

Rivalac is far superior to the ordinary coal tar and asphalt paints because of the way it is made. Ordinary coal tar and asphalt paints are made by taking a brittle or semi-brittle base and dissolving them either in oil or tar or gasoline, which, after the solvent has evaporated away, leaves the same brittle substance as was present at the start. Rivalac, on the other hand, is a refined material containing the essential oils in combination and the time of complete evaporation is thereby greatly lengthened.

Rivalac is used by leading manufacturers for stacks, boiler fronts, stills and drums—Dip for pipe, structural steel and metal lath—Concrete waterproofing — Protection against acid fumes.

Write for copies of testimonials showing wide range of uses.

Railway and Power Engineering Corporation Ltd.

133 Eastern Avenue Toronto

Branches : Montreal

Winnipeg

New Glasgow

Buffalo Brake Beam Company

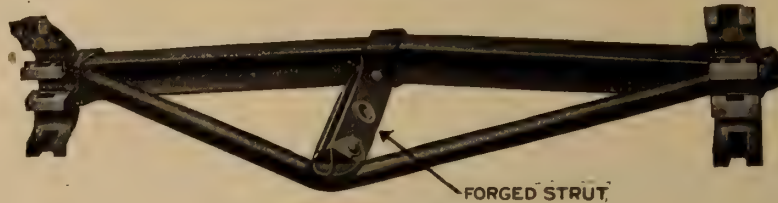
BUFFALO BEAMS ARE BEST BEAMS

Offices:

NEW YORK
32 Nassau Street

ST. LOUIS
Syndicate Trust
Bldg.

MONTREAL
10 St. Antoine St.



Works:
BUFFALO,
N. Y.

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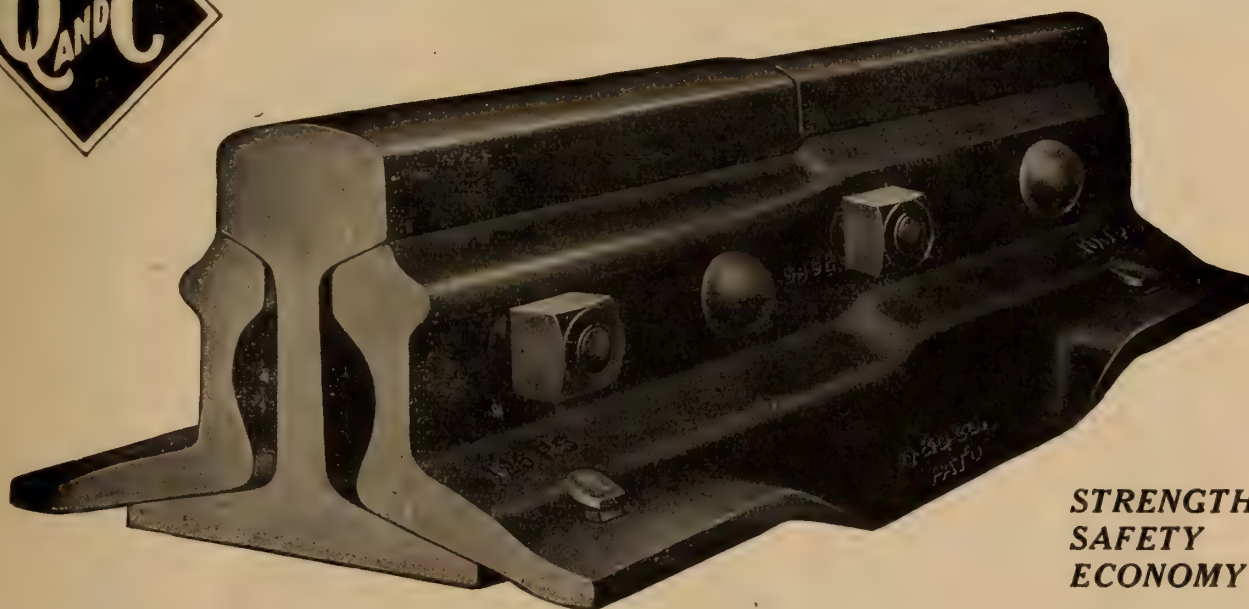
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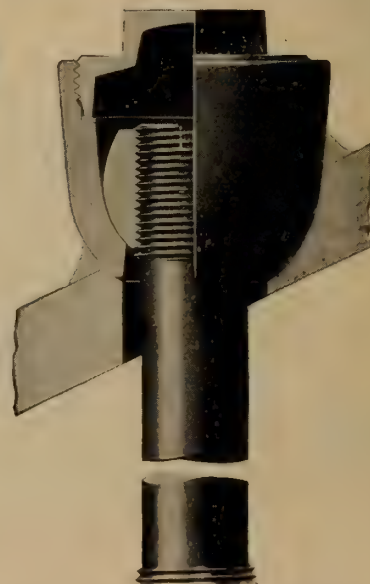
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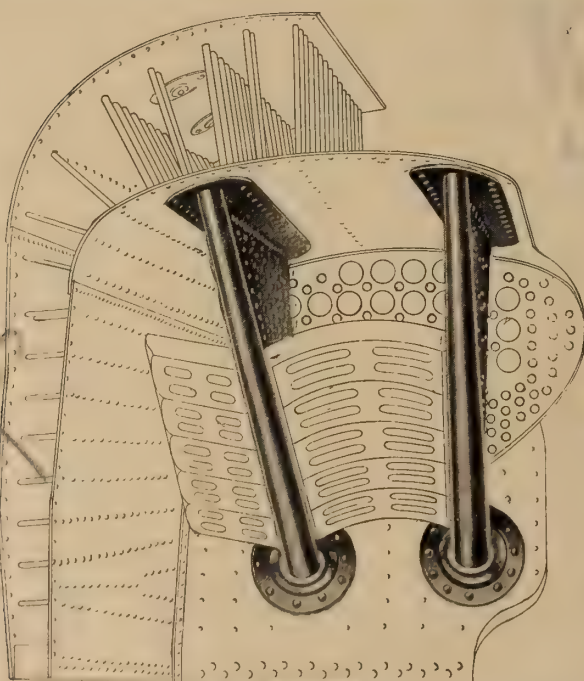
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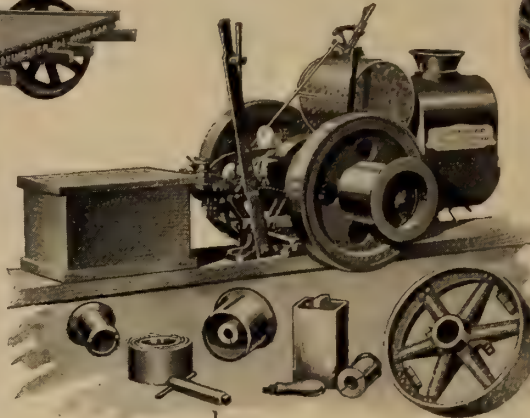
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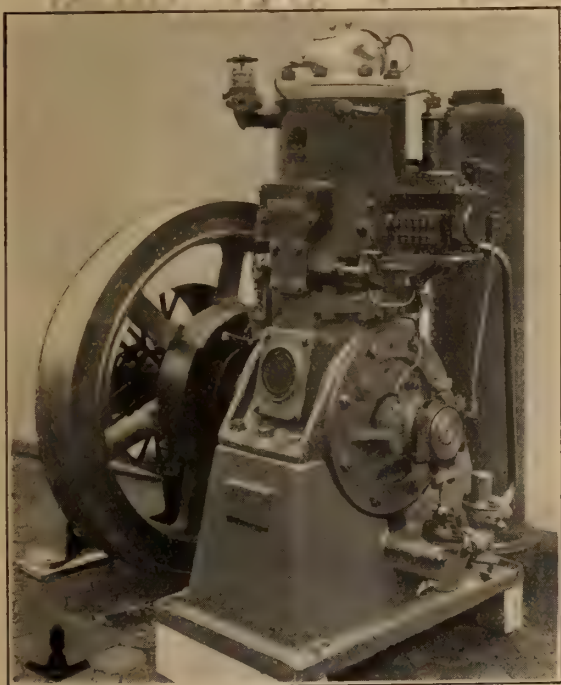
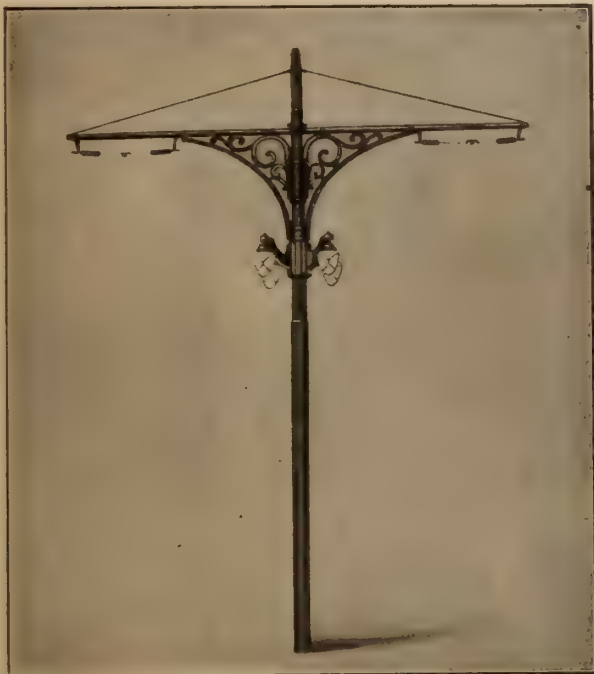
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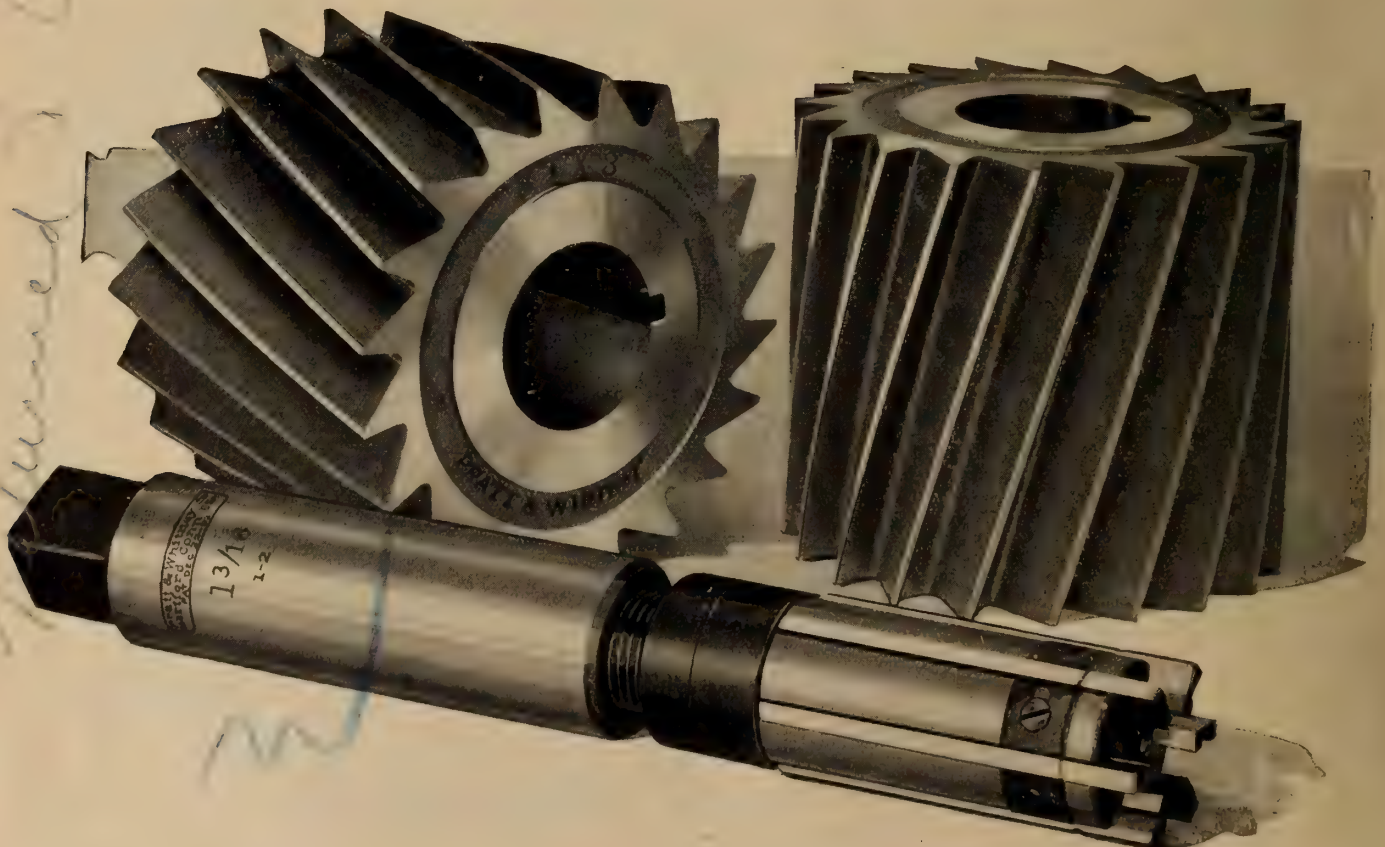
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Canadian Railway and Marine World

December, 1923

Locomotive Freight Tonnage Ratings

By W. U. Appleton, General Superintendent, Atlantic Region, Canadian National Railways.

The importance of establishing correct tonnage ratings on every subdivision of a railway cannot be over estimated. It is plainly apparent to everyone that it is uneconomical to set a tonnage rating too low, but it may not have occurred to some that two or three cars over the correct rating for a subdivision may prove almost as expensive to haul as another train. For example, an overloaded locomotive may stall and be compelled to double over a couple of grades and eventually cut and run for coal before its train can be brought into the terminal. The cost of running this train will be much higher and out of all proportion to the extra load hauled, and if

tonnage, is incorrect on some of the districts. This is more or less of a side issue and it is mentioned here chiefly to show how far-reaching may be the effect of a faulty tonnage rating.

Contrary to popular opinion, the establishment of locomotive tonnage ratings is far from being an exact mathematical science, but neither is it one of those jobs where we figure a little and then guess a whole lot. There are so many extraneous factors which exert a certain amount of influence on the correct potential or possible tonnage, such as length of subdivision, speed at which trains must be operated, density of traffic, location of passing tracks, water tanks, coal-

can be sustained over the ruling grades at the speed which is called for by operating conditions. On a subdivision with short, steep grades, where a considerable part of the grade can be covered on momentum, it is good practice in most cases to figure on topping the grade at a moderate speed, with the locomotive developing its full tractive effort, but on a subdivision with constant grades many miles long, such as are encountered on the former National Transcontinental Ry., it is necessary to figure on the tractive effort which can be sustained indefinitely at whatever speed is required by the operating conditions of that particular subdivision.

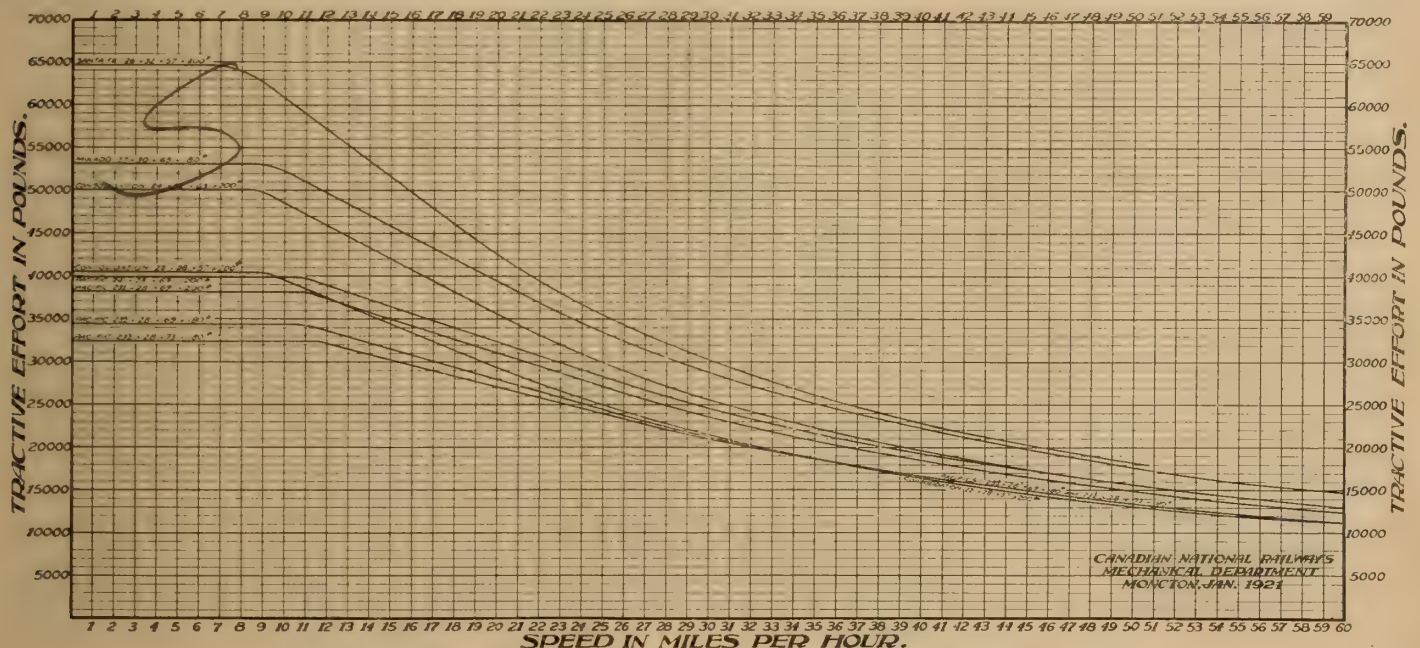


Fig. 1. Curves of Tractive Efforts of Locomotives at Different Speeds.

the extra expense due to delaying other trains which may be running on the same division is considered, it is hard to tell where the expense due to delay and disorganization of traffic will cease. There is just one correct tonnage rating for each section of the road; if the rating is set either above or below the correct figure, the result is a loss of efficiency, and it is therefore the aim of railway officials to establish ratings which are correct.

The organization of some of the larger railway systems includes a bureau of statistics, from which certain information is issued periodically concerning all the different districts on the system. One of the chief objects of issuing these statements is to stimulate competition between districts, get every man on his toes and thus improve the efficiency of the system as a whole. One of the factors of which the statistician has to keep close record is the ratio of the actual tonnage hauled to the potential tonnage, and it will readily be realized that the value of this ratio will be entirely lost if the tonnage rating, i.e., the potential

ing plants, etc., that the purely mathematical end of the work must be discounted to a certain extent. Some of these conditions may also vary from time to time and permit a variation in the tonnage rating, but notwithstanding all this, particular stress should be laid on the fact that with any particular set of conditions there is just one correct tonnage rating for a specified class of locomotive over a specified subdivision, and further, it is possible to determine accurately the correct rating. Primarily there are just two main factors which govern the correct tonnage rating for any subdivision. First, the drawbar pull exerted by the locomotive, and second, the resistance of the train, two equal and opposite forces acting upon the locomotive drawbar. Each of these main factors may be influenced by a host of minor factors and a careful analysis of all conditions is necessary before a tonnage rating is definitely established.

The tractive effort used in computing a tonnage rating is not necessarily the maximum starting tractive effort of the locomotive, but the tractive effort which

This sustained tractive effort is naturally lower the higher the speed required, and it may be even further limited, on grades which are 20 or 30 miles long, by the steaming capacity of the boiler or by the coal shovelling capacity of a fireman. There is a limit to human endurance and it is quite necessary to take cognizance of this, although the human endurance factor is being eliminated as rapidly as possible, by the application of mechanical stokers to our heaviest classes of power. Poor location of coaling stations and water tanks may also in some few instances lower the tractive effort which can be obtained from the locomotive, for it is futile to draw so heavily on the power plant that the coal or water supply is exhausted before there is an opportunity of replenishing it.

The accompanying chart, fig. 1, shows the highest tractive effort which can be obtained from various classes of Canadian National locomotives at different speeds. The locomotives mentioned are designated by type, diameter of cylinder, stroke of piston, diameter of driving wheel and boiler pressure; thus, the top

curve is for a Santa Fe type, with a 26 in. diameter cylinder, 32 in. piston stroke, 57 in. diameter driving wheel and 200 lb. per sq. in. boiler pressure. The tractive effort indicated by these curves is theoretical, and can only be approximated at the higher speeds under the very best of conditions. The starting tractive effort can always be relied on, provided the locomotive is in good shape, but in order to meet the average conditions encountered on the Atlantic Region it is necessary to figure on developing only about 85% of the theoretical tractive effort at the higher speeds.

Tractive Effort and Drawbar Pull.—It will be well to distinguish clearly between the terms "tractive effort" and "drawbar pull." Tractive effort is the horizontal force exerted on the rails by the driving wheels' tires, whereas the drawbar pull is the force exerted at the drawbar at the rear of the tender. As it must take a certain amount of effort to move the locomotive and tender, it is quite clear that the drawbar pull can never equal the tractive effort, unless the locomotive is running down grade. An increase in drawbar pull is particularly noticeable sometimes when a locomotive has just passed the crown of a heavy grade, and is travelling down hill with the greater part of the train still coming up the grade. Under such circumstances it is possible for the drawbar pull to equal or even exceed the tractive effort exerted by the locomotive. This point has, however, only been mentioned as a matter of interest and has no particular importance. Fig. 2 shows the approximate resistance of the locomotive and tender on different grades, for the same classes of locomotives as are shown in fig. 1.

Computation of Drawbar Pull.—Supposing, by way of example, we wish to locomotive naturally has to be draughted

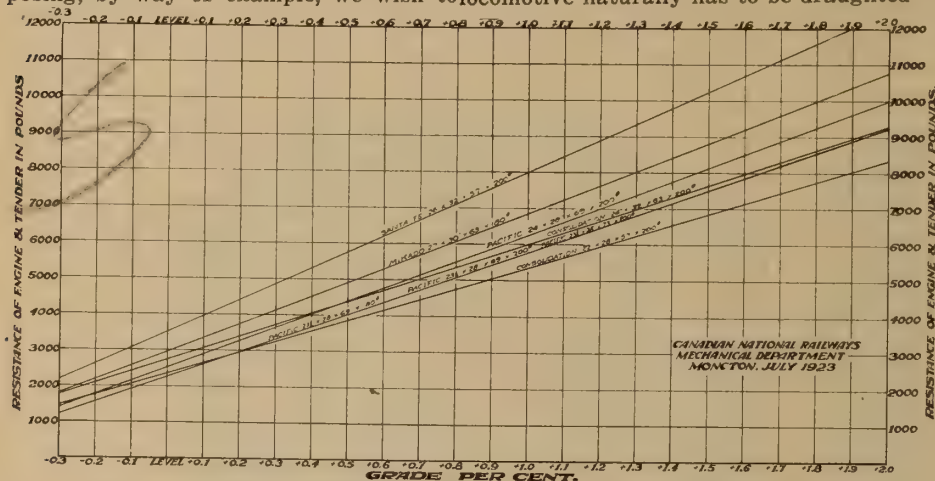


Fig. 2. Approximate Resistance of Locomotive and Tender for Different Grades.

ascertain the drawbar pull which can be sustained at a speed of 15 miles an hour by the consolidation $24 \times 32 \times 63$ in. \times 200 lb. on a 0.6% compensated grade: Referring first to fig. 1, the tractive effort for this particular locomotive, at 15 m.p.h., is shown as 42,000 lb. This can only be obtained, however, under ideal conditions, and it is necessary to make the proper reduction to suit all the conditions encountered on the district concerned. It was mentioned above that on the Atlantic Region only 85% of the theoretical tractive effort can be relied on at the higher speeds, and this will reduce the tractive effort in this particular instance to 35,700 lb. By referring to fig. 2, it will be seen that the approximate resistance of the same locomotive and tender on a 0.6% grade will

be 4,700 lb., and this leaves a drawbar pull of 31,000 lb. available for hauling tonnage. This has been proved by repeated tests to be the maximum drawbar pull which can be sustained indefinitely by this class of locomotive on this grade, under the conditions which exist in this particular locality.

If this class of locomotive was being rated for a subdivision with short, heavy grades, such as are found at many points along the former Intercolonial Ry., it would be possible to figure on the maximum tractive effort, which can be developed up to a speed of over 8 miles an hour (see fig. 1). Supposing the grade was 1.3%, the tractive effort available at low speed is 49,700 lb., the approximate resistance of the locomotive and tender on this grade is 7,000 lb. (see fig. 2), and this will leave a drawbar pull of 42,700 lb. for hauling tonnage.

Influence of Quality of Fuel on Tractive Effort.—The reasons for the greater drop in tractive effort with increased speed than that indicated by the curves shown in fig. 1, are various, but the most important reason is directly traceable to the grade of fuel which is used in the maritime provinces. To thoroughly analyze this point would take considerable time and the following short explanation will have to suffice. The fuel in a locomotive firebox is burned by means of an induced draught, which is created by a jet of exhaust steam from the cylinders impinging upon the sides of the smokestack. Some grades of fuel require a fiercer draught than others. A low grade of fuel, which tends to clinker badly, needs a very heavy draught to assist combustion and bring out its best steaming qualities. Some of the coal used on the Atlantic Region is fairly good and some is anything but the best, and a

very low speeds.

The Resistance of a Train is due to grade, curvature, and friction. The resistance due to curvature is, of course, a frictional resistance, but as it is due to a track condition, it is computed with the grade, and not confused with the frictional resistance of the moving parts of the train. The resistance due to grade is the only mathematically accurate factor which is used in tonnage computations. It amounts to 20 lb. per ton (2,000 lb.) hauled per 1% grade and cannot be more or less. The resistance due to curvature is generally added to the grade resistance in cases where the grades are not compensated for curvature, and the usual practice is to add 0.04% to the grade percentage for each degree of curvature and figure on the equivalent

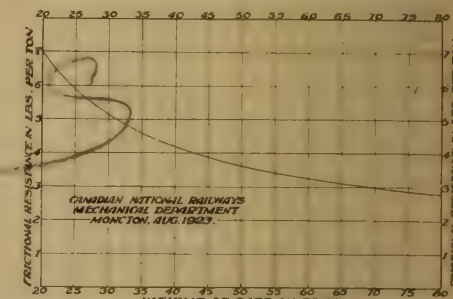


Fig. 3. Resistance of Freight Cars on Level Track at Moderate Speed.

grade. For example, the resistance due to grade and curvature per ton hauled on a 1% grade, with a $2^\circ 30'$ curve would be taken as $20 \times 1.1 = 22$ lb. On some sections of our road the ruling grades are all compensated for curvature, that is to say, the gradient is sufficiently reduced wherever curves are encountered, to make the combined resistance for grade and curve equivalent to the ruling grade resistance on straight track. In cases of this kind it is not necessary to consider track curvature when computing tonnage.

The frictional resistance of a train is produced by a variety of conditions which may be briefly summed up as follows:— 1. Journal friction. 2. Rolling friction of the wheels on the rail. This includes concussion on rail joints, flange friction, etc. 3. Atmospheric resistance. It is practically impossible to determine just what resistance originates from either of these sources, and no useful purpose could be served by analyzing the subject to that extent, but, by years of careful test and experiment, the total frictional resistance for various weights of cars under favorable conditions has been determined.

Fig. 3 shows the frictional resistance per ton of various weights of cars, and fig. 4 shows the combined grade and frictional resistance per ton for various weights of car on different grades. These charts are plotted for freight cars at moderate speeds, i.e., 20 miles an hour or less. The frictional resistance of the locomotive per ton is considerably higher than that of the cars, as machinery friction runs rather high, especially on a locomotive with 4 or 5 pairs of driving wheels, but this has all been taken care of in the chart, fig. 2.

Computation of Tonnage Ratings.—If the characteristics of the road and the operating conditions are known for any subdivision, it is a simple matter to determine the tonnage which should be hauled by means of the charts figs. 1, 2 and 4. Suppose that we wish to set a tonnage rating for the $24 \times 32 \times 63 \times 200$ lb. consolidation locomotive on a sub-

division with a 0.6% compensated ruling grade 20 miles long, and that the operating conditions necessitate a speed of 15 miles an hour being maintained over this grade:—Referring first to fig. 1, the tractive effort at this speed is found to be 42,000 lb., taking 85% of this, 35,700 lb., as the maximum tractive effort which can be relied on at this speed under local conditions and then subtracting 4,700 lb. for the resistance of the locomotive and tender (see fig. 2), the available drawbar pull for hauling tonnage will be 31,000 lb. Now referring to fig. 4, the resistance per gross ton for 50-ton cars on a 0.6% grade is 15.64 lb.; therefore the tonnage rating for cars with an average weight of 50 tons should be $31,000 \div 15.64 = 1,980$ tons.

In the case of a subdivision on which the tonnage is limited by a comparatively short heavy ruling grade, and the operating conditions permit the crown of the grade to be covered at low speed, the computation of tonnage is even simpler. Supposing that the grade is 1.2% with a curve of $2^\circ 30'$ uncompensated, the equivalent grade will then be 1.3%. From the chart, fig. 1, the tractive effort available with the same class of locomotive at low speed is 49,700 lb., the resistance of the locomotive and tender on a 1.3% grade is 7,000 lb. (see fig. 2), which leaves a drawbar pull of 42,700 lb. available for hauling tonnage. From fig. 4 the resistance per gross ton for 50-ton cars is 29.64 lb., therefore the tonnage rating for cars with an average weight of 50 tons should be $42,700 \div 29.64 = 1,440$ tons.

Equivalent Tonnage.—It will be perfectly clear even to the most inexperienced that a train consisting of 50 cars, averaging 20 tons gross, will require considerably more power to haul it than a train of 20 cars averaging 50 tons gross, owing to the greater frictional resistance of the longer train, so it is quite evident that it would be useless to set tonnage ratings in gross tons without taking into consideration the length of the train. In former years this was taken care of on the Government Rys. by setting all tonnage ratings in equivalent tons, and, in figuring the equivalent tonnage of a train, a string of cars of light average weight would get the benefit of an allowance which compensated for the increased wheelage and higher frictional resistance per gross ton. The method which was followed was to sub-

tract one-half the total contents of the train from the total tare and to add 10%, 20%, or 30% of the remainder, according to the nature of the subdivision, to the gross tonnage of the train. The gross tonnage, plus this amount added for train resistance, was known as the equivalent tonnage of the train.

On subdivisions with very easy grades the trains are naturally much longer than on those with heavy grades, and a greater allowance is necessary for train resistance. For this reason 30% of the difference between half the contents and the tare was added to the gross tonnage for ruling grades up to 0.4%, 20% for grades over 0.4% and up to 1%, and 10% for grades over 1%. With the average fully loaded freight car the contents will be about double the tare weight, and in the case of train consisting of cars all loaded to capacity, it is plainly apparent that there will be no allowance for train resistance, as half the total contents will be equal to, or perhaps greater than, the total tare. Equivalent tonnage was therefore a haulage equivalent based on a train of fully loaded cars.

This method of figuring tonnage involved considerable work when making up trains, and, what is worse, there were great opportunities for error, and for the last few years the Canadian National Rys. have published their tonnage tables in such a way as to entirely eliminate the necessity of considering equivalent tonnage.

The tonnage rating for the Springhill Subdivision, which is given herewith, is typical of the tonnage tables which are included in every issue of Canadian National timetables. It will be noticed that full tonnage is hauled only when the average weight of cars is 50 tons or over, and that reductions are shown for lighter average weights. The grades are heavy on this subdivision and the ratings for 40, 30 and 20-ton cars are therefore 97½%, 95% and 90%, respectively, of the full rating. If the ruling grades were 0.4% or under, much heavier tonnage would be hauled, and the reductions for the lighter average cars would be 92½%, 85% and 70% of the full rating, and for grades over 0.4% up to 1%, 95%, 90% and 80% for the 40, 30 and 20-ton car average respectively. With this style of table the gross tonnage of the train which should be hauled by any locomotive can be picked out at a glance

when the average weight of the cars is known. The locomotives shown—in this particular case 65%, 53%, 50% and 30%—include all the classes in regular freight service on the subdivision, there is no 100% locomotive on the system, and this line is only included to facilitate calculating the tonnage for a locomotive which does not happen to be shown in the table. For example, if a 41% locomotive was working on the Springhill Subdivision, its tonnage rating would be taken at 41/100 of the tonnage shown for the 100% locomotive. The locomotive percentages are based on their maximum tractive effort, 1% being equivalent to 1,000 lb. tractive effort, thus the 65% locomotive will be our Santa Fe with a maximum tractive effort of 65,000 lb.

The practice of including tonnage ratings in the timetables, instead of publishing them in book form, has a great deal to recommend it, and one of the chief advantages is that timetables are constantly being reissued, and any changes necessary in tonnage ratings due to changing conditions, transferring of power, etc., can be kept up to date, without the necessity of putting out new books or issuing supplementary bulletins.

Tonnage Tests.—From the foregoing it should be clear that, provided all the conditions are known, it is possible to set a tonnage rating for any subdivision which will come within very close limits of the correct loading for the locomotives operating on it. This being the case, the inference may be drawn that conducting tonnage tests is neither necessary or desirable. This impression is erroneous, however, and there are many reasons why it is important to test tonnage ratings on all main lines, and also on any branch lines where full tonnage is hauled. To begin with, conditions are not always exactly as they are represented; the grades and curves may not be exactly as shown on the track profile; we know that long dumps will sag and that the track will get slightly out of alignment at curves, especially on a single track road where comparatively fast running is tolerated in the opposite direction down the ruling grades. It may be found on testing a short, heavy grade that momentum may be utilized to a greater or lesser extent than that calculated.

Conceding then the advisability of making tonnage tests, why is a dynamometer necessary? In the first place, it is essential to be sure that the loco-

Locomotive Tonnage Ratings, Canadian National Railways, Maritime District.

To arrive at the proper load for a locomotive, tonnage ratings must be modified by the authorized allowance for car resistance, weather conditions, and air pump and train line capacity. The tonnage ratings in the tables below make due allowance for car resistance.

When the average weight of all loads and empties in the train is 20 tons use 90% rating	When the average weight of all loads and empties in the train is 30 tons use 95% rating	When the average weight of all loads and empties in the train is 40 tons use 97½% rating	For a train consisting of cars having an average weight of 50 tons or over 100% rating			For a train consisting of cars having an average weight of 50 tons or over 50 tons use 100% rating	When the average weight of all loads and empties in the train is 40 tons use 97½% rating	When the average weight of all loads and empties in the train is 30 tons use 95% rating	When the average weight of all loads and empties in the train is 20 tons use 90% rating
Westbound—(read down)				Springhill Subdivision		Eastbound—(read up)			
2455	2590	2660	2730	Truro to Springhill Jct.	100% locomotive	2950	2875	2800	2650
1595	1685	1730	1775		65% “	1915	1865	1820	1720
1305	1375	1415	1450		53% “	1565	1525	1485	1410
1230	1295	1330	1365		50% “	1475	1435	1400	1325
740	780	800	820		30% “	885	860	840	795
2555	2700	2770	2840	Springhill Jct. to Moncton	100% locomotive	2950	2875	2800	2650
1660	1750	1800	1845		65% “	1915	1865	1820	1720
1355	1430	1465	1505		53% “	1565	1525	1485	1410
1275	1350	1385	1420		50% “	1475	1435	1400	1325
765	805	825	850		30% “	885	860	840	795

tive used on the test train is in a condition to develop the tractive effort for which it is rated under the test conditions and that the locomotive crew are operating the locomotive to best advantage. The value of tonnage tests as a means of educating locomotive drivers and firemen should never be disregarded, as such tests provide an excellent opportunity to demonstrate on the spot the superior results to be obtained by correct operation of the locomotives. The dynamometer which is used on locomotive

viduals making the test, and has also the disadvantage that a really complete impression of the efficiency of operation cannot be formed at any particular instant during the test. There are advantages, however, which far outweigh these disadvantages: first, the initial cost of the equipment; the cost of the apparatus on car 84, the Atlantic Region dynamometer, was a very small fraction of that of the equipment of the Westinghouse car. Then take into consideration the fact that car 84 is used as an ordinary

of there being any doubt as to the accuracy of the gauge showing the drawbar pull, as the buff gauge may be cut in without any trouble and the readings of the two gauges checked one against the other.

When making a tonnage test with this car the observer keeps a record of the drawbar pull, speed, mileposts, time, etc., and the master mechanic, or some other competent person, rides in the locomotive cab and makes notes of all changes in steam pressure, reverse lever position, throttle opening, etc., so that at the end of the run all essential information is available, and it is only necessary to plot a chart from which the railway officials concerned may get a complete impression of the performance. When a tonnage test is to be made, the profile of the subdivision should first be examined, and the ruling grades picked out, then the operating conditions should be studied, and questions such as the speed required over the grades, whether the trains may have to stop near the foot of a grade, or whether a run for the grade may be depended on, should be settled. The theoretical tonnage should then be set to suit these conditions, and the test train made up, every car being weighed at the terminal from which the test run is being made. The result of the test may show the tonnage correct, or that a slight adjustment is desirable, and in either case the official tonnage table may be made up and issued to the operating department.

The chart, fig. 5, illustrates a test of a Santa Fe locomotive on the ruling grade, eastbound, between Moncton and Springhill Jet. The train consisted of 53 cars, with a gross tonnage of 1,802, or an average weight per car of 34 tons. The locomotive struck the foot of the

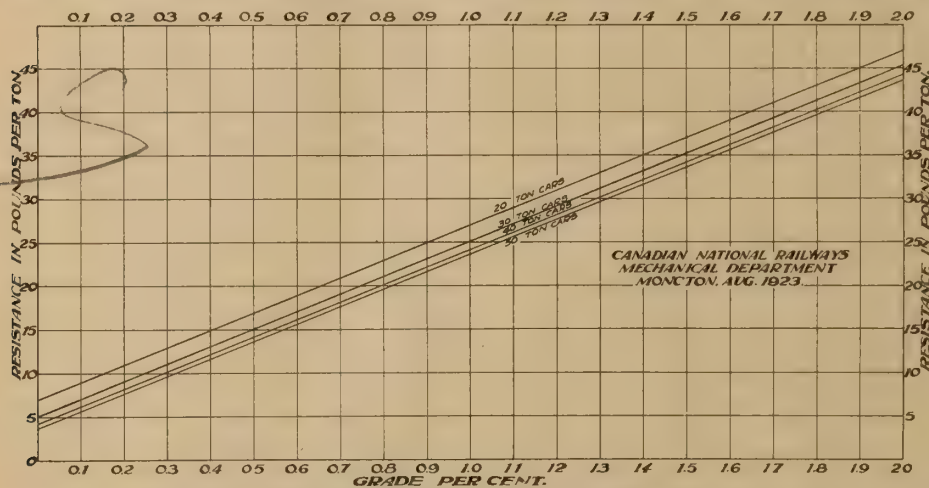


Fig. 4. Total Resistance of Freight Cars on Different Grades at Moderate Speeds.

tests is very simple in principle. It consists of a cylinder rigidly bolted to the underframes of a car, the cylinder is completely filled with oil and the piston rod connected in tandem with the drawgear of the car. When a pull is exerted on the coupler, this pull is transmitted by the drawgear to the piston of the dynamometer and sets up a pressure in the oil at one end of the cylinder. This pressure has a definite relation to the pull exerted, according to the effective area of the piston, and if the oil is piped from the end of the cylinder to a pressure gauge in the observation room, the pull on the coupler can be read directly from the gauge.

About seven years ago tonnage tests were conducted on practically all the Atlantic Region main lines, the dynamometer car which was used being loaned by the Westinghouse Air Brake Co. This car is probably the most elaborately complete piece of locomotive tonnage testing equipment in existence; it automatically records on a chart, in full view of the observers, not only the drawbar pull, but the speed at which the locomotive is travelling, the position of the reverse lever, the amount of throttle opening, the steam pressure in the boiler and even each shovel full of coal which is thrown on the fire. The air brake train line pressure is recorded, and the period and the amount of the reduction for each application of the brakes is shown, so that a complete record is kept of the locomotive driver's operating methods throughout the entire run. The Canadian National Rys. have a dynamometer car in service on each of the three regions and, although they have not the elaborate equipment of the Westinghouse car, they will perform exactly the same functions; the chief difference being that whereas on the Westinghouse car the drawbar pull, speed, etc., are recorded automatically, on the railway cars they have to be noted by observers, at certain intervals of time or distance, and the chart plotted after the completion of the test. This entails more work by the indi-

business car far oftener than for locomotive testing. If it was equipped similarly to the Westinghouse car, it would be practically useless as a business car, whereas the apparatus actually installed does not occupy one inch of floor space and the car's usefulness in other capacities is not interfered with in any way.

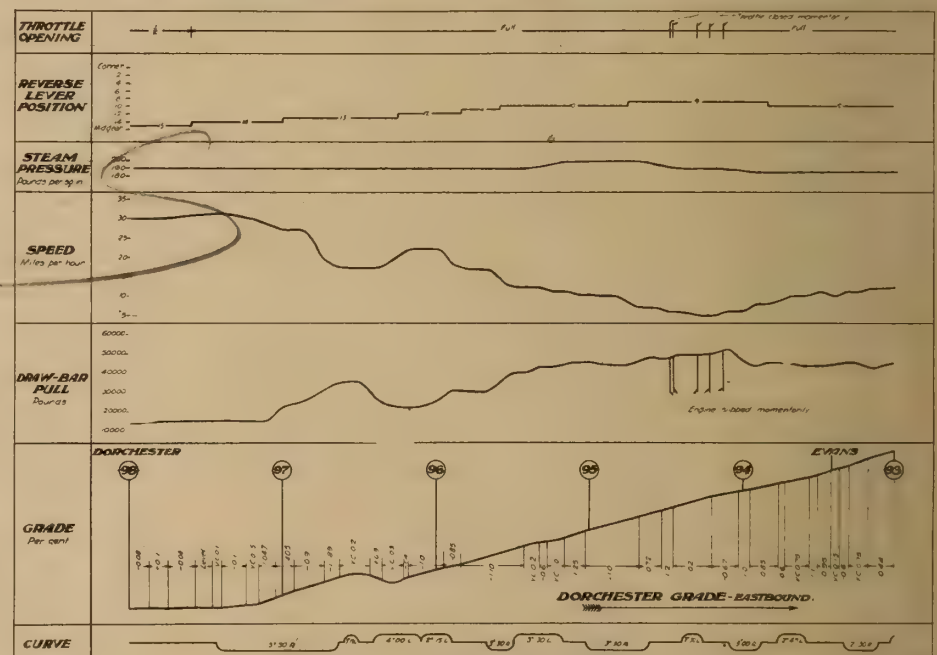


Fig. 5. Test of Santa Fe Locomotives.

The only instruments which are visible in the observation room are 2 pressure gauges which indicate the drawbar pull and the buff, the speed indicator, and the air brake recording gauge. The pressure gauge dials are graduated to show drawbar pull or buff from zero to 75,000 lb., and the oil is piped in such a way that by opening one cock and closing another both gauges will register drawbar pull or both register buff as required. This feature is very convenient in the event

grade at a speed of 30 miles an hour and made full use of its momentum. It would be difficult to improve on this locomotive driver's method of operating his locomotive; the whole of the grade was taken on a full throttle and the reverse lever dropped down notch by notch as required. If the wheels had not momentarily slipped on five different occasions, on a bad piece of rail, the speed would not have dropped below 7 miles an hour, which is the maximum speed at which

this class of power can be expected to develop full tractive effort (see fig. 1). The tonnage rating in effect for this subdivision is shown on an earlier page, and it will be seen that the rating for a 65% locomotive with 30-ton cars is 1,820 tons; the loading of the test train was within 1% of this figure and was handled with a slight reserve of power to spare, therefore, the test sustains the rating as correct.

In the majority of cases a dynamometer test will prove the theoretical rating to be correct, but occasionally it

shows that some adjustment is necessary, and in some rare instances the test may have to be repeated. A test train which is very much over or under the correct loading does not give any reliable data on which to work, and in order to establish a tonnage rating definitely, the loading of test train must be very close to the correct tonnage.

The foregoing paper was read before the Engineering Institute of Canada's maritime branch, at St. John, N.B., recently.

Birthdays of Transportation Men in December.

Many happy returns of the day to:—

A. G. Albertsen, Manager, Royal Mail Steam Packet Co., San Francisco, Cal., born at Copenhagen, Denmark, Dec. 31, 1887.

G. F. Ancrum, Treasurer, Headquarters and Subsidiary Companies' Accounts, Canadian National Rys., Montreal, born at Bristol, Eng., Dec. 9, 1872.

J. H. Barber, ex-Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto, who has retired on pension, born at Cobourg, Ont., Dec. 20, 1856.

W. E. G. Bishop, Division Freight Agent, Canadian National Rys., North Bay, Ont., born at Central Clarence, N.S., Dec. 4, 1888.

H. E. Bissell, Right of Way Department, Canadian National Rys., Winnipeg, born near Noyan, Que., Dec. 31, 1867.

N. E. Brooks, ex-Engineer, Maintenance of Way, Western Lines, C.P.R., now at Sherbrooke, Que., born there, Dec. 25, 1866.

W. W. Butler, President, Canadian Car & Foundry Co., Montreal, born at Danville, Ohio, Dec. 9, 1862.

J. M. Cameron, General Superintendent, Alberta District, C.P.R., Calgary, born at Lochaber, N.S., Dec. 18, 1867.

W. E. Campbell, Chief Traffic Officer, Board of Railway Commissioners, Ottawa, born at Mount Vernon, Ont., Dec. 19, 1882.

W. C. Casey, General Agent, Passenger Department, Ocean Traffic, C.P.R., Winnipeg, born at Moncton, N.B., Dec. 12, 1882.

G. W. Caye, Purchasing Agent, Canadian National Rys., Montreal, born at Malone, N.Y., Dec. 1, 1865.

R. J. Foreman, Foreign Freight Agent, Canadian National Rys., Montreal, born at Toronto, Dec. 31, 1878.

A. H. Foster, Manager, Brantford Municipal Ry., Brantford, Ont., born at Guelph, Ont., Dec. 24, 1888.

W. H. Gardiner, City Freight Agent, C.P.R., and District Freight Agent, Esquimalt & Nanaimo Ry., Victoria, B.C., born there, Dec. 6, 1859.

A. J. Gorrie, ex-Superintendent District 1, Transcontinental Division, Canadian Government Rys., Quebec, now of Montreal, born at Raith, Kirkcaldy, Scotland, Dec. 10, 1868.

F. P. Gutelius, Resident Vice President, Delaware & Hudson Rd., Montreal, formerly General Manager, Canadian Government Rys., born at Mifflinburg, Pa., Dec. 21, 1864.

J. T. Hallisey, Superintendent, Halifax Division, Atlantic Region, Canadian National Rys., Halifax, N.S., born at Beaver Bank, N.S., Dec. 29, 1862.

D. B. Hanna, ex-President, Canadian National Rys., Canadian Government Merchant Marine Ltd., etc., Toronto,

born at Thornliebank, Scotland, Dec. 20, 1858.

H. E. Heal, Canadian Passenger Agent, Pennsylvania Rd., Toronto, born at Bowmanville, Ont., Dec. 17, 1891.

J. J. Hennigar, District Freight Agent, Great Lakes Transportation Co., Windsor, Ont., born at Topeka, Kan., Dec. 21, 1884.

H. C. Holloway, Locomotive Foreman, Canadian National Rys., North Gate, Sask., born at Granby, Que., Dec. 6, 1869.

C. E. Jenney, General Agent, Passenger Department, Canadian National-Grand Trunk Rys., New York, N.Y., born at Fergus, Ont., Dec. 31, 1873.

W. J. Kelly, Superintendent of Telegraphs and Telephones, Timiskaming & Northern Ontario Ry., North Bay, Ont., born at Renfrew, Ont., Dec. 17, 1875.

L. S. Landers, Division Engineer, Canadian National Rys., Edmundston, N.B., born at Farnham, Que., Dec. 15, 1888.

J. M. MacArthur, Superintendent, Medicine Hat Division, Alberta District, C.P.R., Medicine Hat, Alta., born at Toronto, Dec. 8, 1885.

A. McCowan, Assistant General Superintendent, Car Equipment, Western Region, Canadian National Rys., Winnipeg, born at Perth, Scotland, Dec. 5, 1868.

J. T. McGrath, ex-Master Mechanic, G.T.R., Battle Creek, Mich., now of Bloomington, Ill., born at Toronto, Dec. 6, 1869.

A. T. McKean, Division Freight Agent, C.P.R., Calgary, Alta., born at St. John, N.B., Dec. 18, 1886.

Capt. R. McKillop, Superintendent, Bruce Division, Ontario District, C.P.R., Toronto, born at Perth, Scotland, Dec. 26, 1884.

A. D. MacTier, Vice President, Eastern Lines, C.P.R., Montreal, born at Blairgowrie, Scotland, Dec. 27, 1867.

Alfred Price, ex-General Manager, Eastern Lines, C.P.R., Montreal, born at Toronto, Dec. 6, 1861.

W. J. Radford, Assistant Manager, Toronto Suburban Ry., Toronto, born at Boldre, Hants, Eng., Dec. 23, 1870.

G. D. Robinson, ex-European Freight Agent, Canadian Pacific Ocean Services Ltd., Montreal, born at St. John, N.B., Dec. 7, 1877.

H. J. Russell, General Manager, Newfoundland Government Railway, St. John's, Nfld., born at Musgrave Harbor, Nfld., Dec. 24, 1891.

H. W. Sharpe, Superintendent of Motive Power, Quebec District, Central Region, Canadian National Rys., Quebec, Que., born at Campbellton, N.B., Dec. 6, 1869.

G. E. Smart, Chief of Car Equipment, Canadian National Rys., Montreal, born at Edinburgh, Scotland, Dec. 23, 1873.

M. F. Tompkins, General Freight Agent, Atlantic Region, Canadian National Rys., Moncton, N.B., born at Margaree, N.S., Dec. 6, 1878.

C. B. Trites, Assistant Superintendent Pensions and Relief, Canadian National Rys., Moncton, N.B., born there, Dec. 26, 1877.

H. H. Vaughan, ex-Assistant to Vice President, C.P.R., now consulting engineer, Montreal, born at Forest Hill, Essex, Eng., Dec. 26, 1868.

R. C. Vaughan, Director of Purchases and Stores, Canadian National Rys., Montreal, born at Toronto, Dec. 1, 1883.

A. P. Walker, Assistant District Engineer, Ontario District, C.P.R., Toronto, born at West Hartlepool, Eng., Dec. 9, 1860.

E. B. Walker, Electrical Engineer, Bureau of Economics, Canadian National Rys., Montreal, born at Toronto, Dec. 15, 1879.

H. H. Ward, Deputy Minister of Labor, Ottawa, born at Arkona, Ont., Dec. 17, 1884.

J. B. Way, Freight and Ticket Agent, C.P.R., Sault Ste. Marie, Ont., born at Port Hope, Ont., Dec. 10, 1865.

W. E. Weegar, Superintendent, Barrie Division, Southwestern District, Central Region, Canadian National Rys., Allandale, Ont., born in Stormont County, Ont., Dec. 17, 1870.

Michigan Central Canadian Passenger Trains Speed.

A St. Thomas, Ont., press report stated that a new M.C.R. passenger train, no. 47, made its initial trip between New York and Chicago on Sept. 30, passing over the Canada Division, and that it was very fast, covering the division in about 5 hours. We are officially advised that train 47, consisting entirely of Pullman cars, has been operated during the past 4 or 5 years as second section of no. 17, and that no material change has been made in its equipment. As to the reference to its speed, we are advised that the average speed of M.C.R. passenger trains is no greater in Canada than in the U.S., but the fact of their Pullman ones being operated over the Canada Division with a stop at St. Thomas only makes the running time seem comparatively short, and often when trains are received late from the New York Central Lines at Buffalo, considerable time is made up between there and Detroit. The M.C.R. Canada Division timetable has a special rule placing a speed limitation of 70 miles an hour on passenger trains. Train no. 47 leaves Buffalo at 4 a.m. daily, arrives at St. Thomas, 123.64 miles from Buffalo, at 6.29 a.m., leaves St. Thomas at 6.34 a.m., and arrives at Detroit, 236.01 miles from Buffalo, at 8.45 a.m. Thus, the schedule time for the 236.01 miles is 285 minutes, and the running time 280 minutes.

J. D. McDonald, formerly General Passenger and Baggage Agent, Canadian National Rys., Chicago, who retired on pension in March, 1923, in remitting his renewal subscription to Canadian Railway and Marine World, writes: "Now that I have retired from active railway work, I feel all the more need of your valuable publication, to keep posted on Canadian railways, in which I shall always be interested."

Wawa Hotel Fire Suit.—The mother of a pantry maid who is assumed to have lost her life in the Wawa Hotel disaster, in the Lake of Bays district of Ontario, on Aug. 19, has issued a writ claiming damages from the Canada Railway News Co., which owned the hotel.

Railway Operating Revenues, Expenses and Other Statistics for August.

The following comparative table for August, 1923 and 1922, has been arranged in Canadian Railway and Marine World's office, from information supplied by the Dominion Bureau of Statistics, Transportation Branch. The figures in the column headed "All railways" include all steam railways with an annual operating revenue of \$500,000 and over. There has been no change in the roads operating, but the 1922 figures, given in the reports this year, include certain revisions, and are not in all cases the same as reported in 1922.

The column headed "Canadian National" gives the figures for the combined steam railways in Canada, under

the Canadian National Ry. Co's directors' management, including the former Canadian Northern System, the Intercolonial, Prince Edward Island, National Transcontinental and other Canadian Government Rys., the Hudson Bay Ry. and the Grand Trunk Ry. of Canada and the Grand Trunk Pacific Ry. It includes all G.T.R. lines in Canada and 36.16 miles in the U.S.A., viz.: Champlain & St. Lawrence Ry., 1.21 miles; United States & Province Line Ry., 9.77 miles, and Black Rock terminal. It does not include other lines in New England, nor lines west of the Detroit and St. Clair Rivers.

The column headed "Canadian Pacific" includes also the Montreal & Atlantic

and Esquimalt & Nanaimo Rys.

The first six items under the heading "Operating revenues" includes rail lines only and not water lines. Freight and passenger train miles contain a proportion of mixed train miles, divided on the basis of freight and passenger car miles in mixed train service. Total train miles include freight; passenger, with their proportions of mixed train miles; special train and non revenue train miles. The average freight revenue per freight train miles includes only rail line revenue. Average passenger train revenue per passenger train miles includes revenue from passenger, mail, express, baggage, parlor cars, etc.

	All Railways.		Canadian National.		Canadian Pacific.	
	1923	1922	1923	1922	1923	1922
Operating Revenues						
Freight	\$24,964,944.96	\$23,806,170.11	\$11,631,866.00	\$11,209,658.73	\$9,800,375.09	\$9,552,614.40
Passenger	10,130,101.65	9,078,449.38	4,243,356.00	3,770,449.39	4,539,695.42	4,147,575.32
Mail	594,349.82	604,210.59	255,400.00	265,230.92	293,847.35	292,806.35
Express	1,979,333.30	1,921,416.50	1,239,450.00	1,181,785.72	624,156.70	622,887.10
Other freight train.....	155.09	1,973.04		1,761.36	805.85	268.68
Other passenger train.....	783,686.80	799,569.74	255,040.00	284,283.89	502,892.14	493,042.63
Water line	375,239.21	362,773.93			306,302.11	299,498.30
All other	1,824,871.98	1,690,072.04	959,878.94	838,549.50	662,957.36	691,446.54
Total railway operating revenues.....	\$40,652,682.81	\$38,264,635.33	\$18,584,990.94	\$17,551,719.51	\$16,731,082.02	\$16,100,139.32
Operating Expenses						
Maintenance of way and structures.....	\$8,595,187.99	\$8,615,557.73	\$4,389,263.69	\$4,607,876.82	\$3,131,452.43	\$3,118,903.19
Maintenance of equipment.....	7,376,843.96	7,253,881.72	3,511,580.47	3,604,124.77	3,044,880.00	2,855,886.25
Traffic	1,190,967.77	1,043,889.76	435,593.45	371,571.53	684,849.89	608,252.84
Transportation	15,980,760.43	15,381,068.22	8,181,167.87	7,662,749.06	6,112,778.30	6,061,929.45
Miscellaneous operations	732,291.12	729,677.33	406,714.45	410,718.94	274,081.33	265,271.71
General	979,088.06	952,359.71	547,781.91	497,876.65	288,221.84	286,273.28
Transportation for investment.....	Cr. 80,971.73	Cr. 74,229.22	Cr. 68,562.24	Cr. 72,724.69		
Total railway operating expenses.....	\$34,774,167.60	\$33,902,205.25	\$17,403,539.60	\$17,082,193.08	\$13,536,263.79	\$13,196,516.72
Operating Income						
Net operating revenue.....	\$5,878,515.21	\$4,362,430.08	\$1,181,451.34	\$469,526.43	\$3,194,768.23	\$2,903,622.60
Railway tax accruals.....	587,774.31	515,174.76	162,306.33	180,175.64	292,658.57	268,507.50
Uncollectable revenues	1,216.42	1,247.98	970.64	907.66		
Hire of equipment.....	Dr. 74,533.25	Cr. 326,597.61	Dr. 23,246.32	Cr. 313,956.71	Cr. 246,832.96	Cr. 260,560.20
Joint facilities rents.....	Dr. 108,961.24	Dr. 78,203.65	Cr. 33,097.45	Cr. 11,731.69	Dr. 1,584.81	Cr. 38,798.45
Operating income	\$5,106,029.99	\$4,094,401.30	\$1,028,025.60	\$614,131.53	\$8,147,357.81	\$2,934,473.75
Operating Statistics						
Average miles of road operated.....	38,452	38,387	20,427.36	20,406.03	13,919.9	13,877.2
Number of tons carried (revenue freight).....	9,032,240	7,450,292	3,772,014	3,279,562	2,472,810	2,349,629
Number of tons carried one mile (revenue freight).....	1,936,355,169	1,888,301,565	910,108,521	915,381,860	767,168,236	763,001,924
Number of tons carried (all freight).....	11,129,109	8,867,858	4,804,921	4,007,679	3,368,987	2,931,047
Number of tons carried one mile (all freight).....	2,459,272,214	2,168,668,037	1,152,537,108	1,059,912,473	1,026,413,947	892,283,976
Number of revenue passengers carried.....	4,651,629	4,543,638	2,306,784	2,302,135	1,645,291	1,609,338
Number of revenue passengers carried one mile.....	404,405,082	379,291,714	157,407,040	156,493,315	205,450,010	186,816,856
Freight train miles.....	4,790,219	4,402,163	2,356,500	2,243,551	1,894,996	1,686,922
Passenger train miles.....	4,566,224	4,298,416	2,067,494	1,917,112	2,030,329	1,957,019
Total train miles (revenue and non-revenue).....	9,970,633	9,355,598	4,842,352	4,629,409	4,078,871	3,791,942
Freight car miles—loaded.....	104,352,219	98,613,660	49,609,090	46,703,825	41,465,240	39,795,570
Freight car miles—empty.....	53,538,730	37,857,475	25,662,313	19,274,154	21,509,694	14,292,767
Passenger train car miles.....	39,858,259	35,093,076	19,330,780	16,102,246	16,949,387	15,721,940
Total amount of pay roll.....	\$22,512,309.23	\$20,722,405.83	\$12,188,399.96	\$11,311,734.94	\$8,493,133.24	\$7,810,797.08
Number of employees.....	184,491	171,850	103,692	96,424	67,476	63,462
Daily Averages Per Mile of Road Operated						
Operating revenues	\$34.10	\$32.16	\$29.35	\$27.75	\$38.77	\$37.48
Operating expenses	\$29.17	\$28.49	\$27.48	\$27.00	\$31.37	\$30.68
Number of tons moved one mile (revenue freight).....	1,624	1,587	1,437	1,447	1,755	1,774
Number of tons moved one mile (all freight).....	2,063	1,822	1,820	1,676	2,379	2,074
Number of revenue passengers carried one mile.....	339	319	249	247	476	434
*Averages Per Freight Train Mile						
Freight revenues	\$5.21	\$5.41	\$4.94	\$5.00	\$5.17	\$5.66
Number of tons of freight (revenue freight).....	404.2	428.9	386.2	408.0	399.6	452.3
Number of tons of freight (all freight).....	513.4	492.6	489.1	472.4	541.6	528.9
Loaded freight cars.....	21.8	22.4	21.1	20.8	21.9	23.6
Empty freight cars.....	11.2	8.6	10.9	8.6	11.4	8.5
*Averages Per Passenger Train Mile						
Passenger train revenues.....	\$2.95	\$2.89	\$2.90	\$2.87	\$2.94	\$2.84
Passengers carried	88.6	88.2	76.1	81.6	101.2	95.5
Passenger cars	8.7	8.2	9.3	8.4	8.3	8.0
Average operating expenses per train mile.....	\$3.49	\$3.62	\$3.59	\$3.69	\$3.32	\$3.45
Average length of haul (revenue freight), miles.....	214.4	253.5	241.3	279.1	306.2	324.7
Average passenger journey, miles.....	86.9	83.5	68.2	68.0	124.9	116.1
Average tons per loaded freight car.....	23.6	22.0	23.2	22.7	24.8	22.4
Average freight receipt per revenue ton mile.....	1.289c	1.261c	1.278c	1.225c	1.294c	1.252c
Average passenger receipt per passenger per mile.....	2.505c	2.394c	2.696c	2.409c	2.210c	2.220c
Ratio of pay roll to operating revenues.....	55.4%	54.2%	65.6%	64.4%	50.8%	48.5%
Ratio of pay roll to operating expenses.....	64.7%	61.1%	70.0%	66.2%	62.7%	59.2%
Ratio of operating expenses to revenues.....	85.54%	88.60%	93.64%	97.32%	80.91%	81.97%

*Contains a proportion of mixed train miles.

Two C.P.R. Sectionmen Were Fined \$25 each and costs, and a third was let go on suspended sentence on pleading guilty, at Portage la Prairie, Man., re-

cently for wilfully obstructing the C.P.R. right of way on Sept. 22. They were returning to Burnside on a hand car, when they were struck by a freight

train, one of them being seriously injured. The Imperial Limited was due to pass about the time, and a serious accident might have resulted.

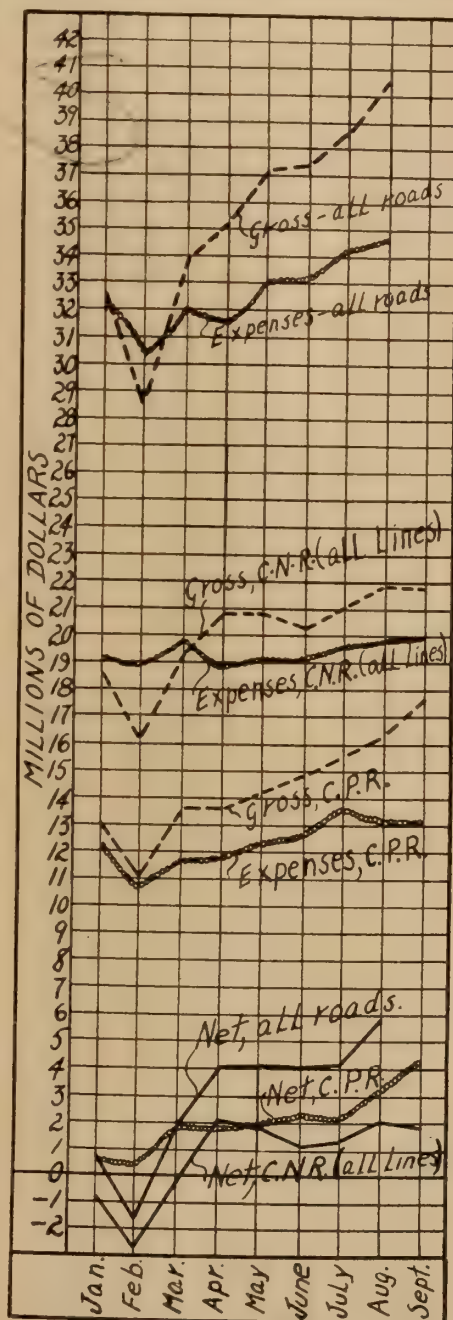
Railway Operating Revenues, Expenses and Other Statistics.

The table of figures on page 570 gives the revenue, expenses, net earnings and operating statistics for Canadian railways having operating revenues of over \$500,000 a year, as a whole, and separately for the Canadian National and Canadian Pacific, as furnished by the Dominion Bureau of Statistics, Transportation Branch. Tables of railway earnings and expenses on page 572 give the Canadian National and Canadian Pacific financial results to and including September, and also approximate results for October, as furnished by the managements. These tables are accompanied by others compiled from figures supplied by the Dominion Bureau of Statistics, Transportation Branch, for the Canadian National Rys.' Canadian lines, Duluth, Winnipeg & Pacific, Grand Trunk Western, and New England lines, separately for August, and for Canadian railways as a whole, the Canadian National and Canadian U.S. lines, and the Canadian Pacific, during the first eight months of 1923. In considering Canadian National results, it is important to bear in mind that the figures for August, in the table on page 570, relate only to the Canadian portion of the system, which is defined in detail in the introduction to the table, while in the table on page 572 the whole system is covered, with the minor exceptions noted.

All Railways.—For the first time in a long while the operating revenues of one month may be directly compared with those for the same month of the preceding year, this being the case as concerns Aug. 1923 and Aug. 1922. Heretofore, increases or decreases in freight or passenger rates have made direct comparison impossible. The table of August results on page 570 shows that for all railways, freight traffic increased 2.6%, and freight traffic revenue increased by \$1,158,774, or 4.9%. The greater increase in freight traffic revenue than in freight traffic, while rates were on the same basis, is presumably due to differences in the nature of the traffic carried. Passenger traffic for all roads was 6.6% heavier than in Aug. 1922, and in addition, showed a considerable seasonal increase over July, being 27% heavier. Passenger traffic revenue was 11.6% more than in Aug. 1922. Total revenues were \$2,388,047, or 6.2%, more than in Aug. 1922, while operating expenses were but \$871,962, or 2.6%, more, which resulted in net earnings being \$1,516,085 greater than in Aug. 1922, and which, in turn, resulted in reduction of operating ratio of from 88.60 to 85.54. The increase in operating expenses which occurred in August this year, compared with Aug. 1922, was more than accounted for by the increase in the payroll, amounting to \$1,789,903, or 8.6%. The number of employees in Aug. 1923 was 7.4% more than in Aug. 1922, so that evidently the remuneration per employee was about on the same basis as in Aug. 1922.

The statement on page 572 of the financial results secured by the railways as a whole for the first 8 months of this year shows that operating revenues were much greater than for the corresponding period of 1922, and that operating expenses, while showing a considerable increase, were not increased to the same extent as the revenues, which explains the improvement of \$6,516,086 in net earnings. The financial progress in 1923 of the railways collectively and the Canadian National and Canadian Pacific

individually is illustrated in the accompanying diagram, which shows that the gross earnings for all the railways have been increasing steadily since February. Only in one month this year have the railways collectively failed to have net earnings, viz., February, when the operating deficit was \$1,821,424. Net earnings in January and the months following February totalled \$23,209,284 at the



Canadian Railways' Gross Earnings, Operating Expenses and Net Earnings, first 9 months of 1923.

end of August, compared with \$16,693,198 in the first 8 months of 1922.

The Canadian National Rys. (Canadian lines only, as mentioned in the introduction to the table of August results on page 570) freight traffic decreased 0.6% in Aug. 1923, compared with Aug. 1922, but freight traffic revenue for the month was \$422,207, or 3.8% more than in Aug. 1922. While passenger traffic showed little change, passenger traffic earnings increased \$472,906, or 12.5%. Total

revenues increased \$1,033,271, or 5.9%, while operating expenses increased only \$321,346, or 1.9%, which resulted in an increase of \$711,924 in net earnings and a reduction in operating ratio of from 97.32 in Aug. 1922 to 93.64 in Aug. 1923. A conspicuous feature of the Canadian National August figures is the large empty car mileage in relation to the loaded car mileage, viz., 25,662,313 empty car miles, against 49,609,090 loaded car miles, and 19,274,154 empty car miles in Aug. 1922. This is no doubt explained in great part by the preparation for the western grain movement, speeded up in anticipation of the heavy crop to be moved. In September, as shown by the table covering all Canadian National lines, on page 572, while gross earnings decreased \$66,183, operating expenses decreased \$218,741, which produced an increase in net earnings of \$152,558.

A most conspicuous feature of Canadian National Railways financial results so far this year has been the remarkable success enjoyed by the Grand Trunk Western lines. In fact, as shown by the statement on page 572, the Canadian lines had a deficit of \$1,051,387 for the 8 months period, and it is due only to the fact that the Grand Trunk Western has had such good results that the system as a whole had substantial net earnings for the period. These net earnings for the whole system, \$5,011,845, compare with an operating deficit of \$1,166,098 for the first 8 months of 1922, so that considerable improvement is evident, although conditions would be more gratifying if Canadian lines were contributing more to net earnings. However, as the deficit of \$1,051,387 on Canadian lines for the first 8 months of this year is to be compared with a deficit of \$4,689,139 in the corresponding period of 1922, it is evident that there has been considerable improvement on the Canadian lines also.

The accompanying chart shows that the C.N.R., all lines, had operating deficits in January, February and March, but that in every month since, net earnings were secured. The deficits in the first 3 months of the year were due to the Canadian lines, which, however, have not had deficits since the end of March, but the net earnings in April, May, June, July and August were not sufficient to wipe out the deficits of the first three months, the net deficit for the period being as stated above.

Canadian Pacific.—In August, as shown by the table on page 570, the C.P.R. experienced a slight decline in freight traffic, compared with Aug. 1922, but freight traffic revenue increased 2.6%, and passenger traffic revenue increased 9.5%. Total revenues increased \$630,892, or 3.9%, and total operating expenses increased only \$339,747, or 2.6%, with the result that net earnings increased \$291,945, and the operating ratio was reduced from 81.97 to 80.91. In September, however, as shown by the figures on page 572, net earnings suffered a decline as compared with those of Sept. 1922, with the result that the net to the end of September was \$56,925 less than for the corresponding period of 1922. The accompanying chart shows that the C.P.R. has been increasing its gross and net month by month since the end of February, and in view of the fact that a large western crop, which is a little later than usual, has to be moved, it is not unreasonable to suppose that the company will stand a good chance of

deriving net earnings in the last three months of this year which will make the total net for 1923 better than that for 1922.

General.—From the various figures presented it is evident that, so far as the Canadian National and the railways collectively are concerned, some improvement as compared with 1922 has been secured. It must be noted, however, that the C.P.R., to the end of September, did not show as good results as secured in 1922. As before pointed out in these columns, the improvement on Canadian National Canadian lines is no doubt chiefly due to there having been opportunities for it which the C.P.R. did not have, while the improvement on Canadian National lines in the U.S. is but characteristic of the great betterment which has taken place in the financial returns being secured by U.S. railways generally. U.S. railways have not experienced as severe rate reductions as have the Canadian, and, handling a record-breaking traffic, and having finally rid themselves of the effects of Federal control, the improvement is not to be wondered at. Some encouragement may be derived from what improvement has been accomplished on Canadian lines, but at the same time it is well to remember that the Canadian National operating ratio is still away up in the nineties, and that the C.P.R. net earnings for the first 8 months of this year do not begin to approach those of corresponding periods in such years as 1916 and 1917. It must also be remembered that if this country is to grow and prosper as it should, large expenditures for additional railway facilities will have to be made, and the less the railways can contribute out of earnings, the more will have to be borrowed. With conditions as they are, and in view of the Board of Railway Commissioners having recently ordered a reduction in export rates on westbound grain, the present seems no time to be talking wage increases or further rate reductions.

Railway Grade Separation in Toronto.

The City of Toronto applied to the Board of Railway Commissioners in February last for an order directing the Canadian Pacific and Canadian National Rys. to collaborate with the city in the preparation of a joint plan for the separation of grades at the C.P.R. and C.N.R. crossings at Bloor St., Royce Ave., Weston Road and St. Clair Ave., and at the C.N.R. crossings at Wallace Ave. and Davenport Road, and to fix a time for submission to the Board of a plan dealing with grade separation at the crossings. Chief Commissioner Carvell, at a hearing in Toronto in February, expressed the opinion that the Board was without power to direct the railways to collaborate, and had jurisdiction only in the case of definite plans being prepared. Following the hearing, a conference was held, at which it was agreed that the matter stand over for a time, on the understanding that the railways would join the city in the preparation of tentative plans, to be presented to the Board. Since that time, railway and city representatives have discussed the matter on different occasions. The Board has advised the Toronto city authorities that a hearing will be held there on Jan. 8, 1924, when the city and the railways will be called upon to submit their proposals.

Railway Earnings and Expenses.

All Canadian Railways.

The Dominion Bureau of Statistics, Transportation Branch, has issued the following statement for all Canadian railways for the 8 months, Jan. 1 to Aug. 31:—

	1923	1922
Operating revenues	\$286,805,062.97	\$263,539,821.93
Operating expenses	263,595,778.64	246,846,623.82
Net operating revenues	23,209,284.33	16,693,198.11

Canadian National Railways.

The following table was compiled by Canadian Railway and Marine World from statements supplied by the Canadian National Rys. management. We are officially advised that the figures show the earnings and expenses of the Canadian Northern Ry. system, including Duluth, Winnipeg & Pacific Ry.; Canadian Government Rys., including Intercolonial and Prince Edward Island Rys., and various local lines in the maritime provinces and Quebec which have been acquired by the Dominion Government; Grand Trunk Pacific Ry.; Grand Trunk Ry. lines both in Canada and the United States, but not Central Vermont Ry. or electric lines. They also include the express and hotel departments and a number of subsidiary companies, the names of which are not given, but not car ferries and steamboats, nor the telegraph department.

	Earnings	Expenses	Net	Increase or decrease
Jan.	\$18,765,458	\$19,362,197	\$* 596,739	\$1,273,039
Feb.	16,193,823	18,903,510	*2,709,687	*1,310,437
Mar.	19,460,560	19,773,916	*313,356	*733,755
Apr.	20,890,911	18,779,726	2,111,185	8,039,973
May	20,992,772	19,092,414	1,900,358	925,126
June	20,475,149	19,354,678	1,120,471	1,244,283
July	21,002,849	19,530,620	1,472,229	749,224
Aug.	21,968,294	19,940,909	2,027,385	990,491
Sept.	21,808,415	19,962,445	1,845,970	152,558

	\$181,558,231	174,700,415	6,857,816	6,380,502
Incr.	\$17,175,885	10,845,383	6,380,502	

*Deficit or decrease.

	1923	1922
Operating ratios—		
January	103.17	111.63
February	116.73	108.84
March	101.61	97.74
April	89.89	106.08
May	90.94	94.72
June	94.52	100.67
July	92.99	96.30
August	90.77	94.92
September	91.54	92.26
Nine months to Sept. 30	96.22	99.68

The Dominion Bureau of Statistics, Transportation Branch, has issued the following statement for C.N.R. lines in Canada and the U.S. for August:—

	1923	1922
Operating Revenues.		
Canadian Lines.....	\$18,584,990.94	\$17,551,719.51
Duluth, Winnipeg & Pacific	175,498.18	170,152.29
Grand Trunk Western lines	2,965,450.00	2,423,333.24
New England lines....	242,355.06	256,966.00
Total	\$21,968,294.18	\$20,402,171.04

	1923	1922
Operating Expenses.		
Canadian Lines.....	\$17,403,539.60	\$17,082,193.08
Duluth, Winnipeg & Pacific	174,944.01	156,150.81
Grand Trunk Western lines	2,044,552.33	1,842,991.25
New England lines....	317,872.59	283,941.67
Total	\$19,940,909.03	\$19,365,276.81

	1923	1922
Net Operating Revenues.		
Canadian Lines.....	\$1,181,451.34	\$469,526.43
Duluth, Winnipeg & Pacific	554.17	14,001.48
Grand Trunk Western lines	920,897.17	580,341.99
New England lines....	Dr. 75,517.53	Dr. 26,975.67
Total	\$2,027,385.15	\$1,036,894.23

The Dominion Bureau of Statistics, Transportation Branch, has issued the following statement for C.N.R. lines for 8 months, from Jan. 1 to Aug. 31:—

	1923	1922
Operating revenues—		
Canadian lines.....	\$133,902,913.78	\$122,488,292.20
U.S. lines.....	25,846,901.71	20,019,454.74
Total	\$159,749,815.49	\$142,507,746.94
Operating expenses—		
Canadian lines.....	\$134,954,301.22	\$127,177,431.37
U.S. lines.....	19,783,668.78	16,496,414.08
Total	\$154,737,970.00	\$143,673,845.45
Net operating revenue—		
Canadian lines.....	Dr.\$1,051,387.44	Dr.\$4,689,139.17
U.S. lines.....	6,063,232.93	3,523,040.66
Total	\$5,011,845.49	Dr.\$1,166,098.51

The C.N.R. Publicity Department has issued a statement from which the following figures are

taken:—Gross earnings for September decreased \$66,184 from Sept. 1922; operating expenses for September, however, decreased \$218,741, so that net earnings for the month were \$152,558 more than for Sept. 1922. Net earnings for the first 9 months of 1923 were \$6,857,816, compared with \$527,314 for the first 9 months of 1922. The improvement in net earnings from operation in the 9 months period was, therefore, \$6,330,502.

The C.N.R. Publicity Department further states that gross earnings for October were \$26,391,991, or \$1,407,682 over those for Oct. 1922, and that gross earnings from Jan. 1 to Oct. 31 were \$207,950,222, an increase of \$18,588,567 over the same period in 1922.

Canadian Pacific Railway.

Following are monthly gross earnings, working expenses and net profits for 1923, compared with those for 1922. The discrepancies between these figures and those issued by the Dominion Bureau of Statistics are owing to the fact that the Bureau is, at its request, furnished with figures by the C.P.R., including the Esquimalt & Nanaimo Ry., and the Montreal & Atlantic Ry. earnings, as well as the C.P.R. ones. The figures supplied the Bureau are exclusive of certain income items which are included in figures supplied Canadian Railway and Marine World:—

	Gross	Expenses	Net	Increase or decrease
Jan.	\$13,148,914	\$12,428,888	\$ 720,026	\$ 236,549
Feb.	11,159,865	10,664,371	495,494	*158,994
Mar.	13,585,763	11,606,049	1,979,714	*440,793
April	13,651,494	11,700,615	1,950,879	402,107
May	14,355,539	12,357,292	1,998,247	*346,266
June	14,943,919	12,521,918	2,422,001	59,687
July	15,677,836	13,607,802	2,070,034	108,126
Aug.	16,417,124	13,300,066	2,117,059	170,622
Sept.	17,745,909	13,247,938	4,497,971	*87,962

	\$130,686,363	111,434,939	19,251,425	*56,925
Incr.	\$5,859,591	5,916,516	*56,925	

*Decrease.

C.P.R. approximate gross earnings for October, \$23,543,000, an increase of \$691,000 over Oct. 1922.

The Dominion Bureau of Statistics, Transportation Branch, has issued the following statement for C.P.R. lines for 8 months from Jan. 1 to Aug. 31:—

	1923	1922
Operating revenues	\$112,938,967.90	\$108,232,426.23
Operating expenses	99,602,503.10	93,370,605.16
Net operating revenues	13,336,464.80	14,861,921.07

United States Railways' Financial Results.

U.S. class 1 railways had \$92,238,400 net operating income in September, equivalent to an annual rate of return of 4.46% on their tentative valuation, compared with 2.90% in Sept. 1922. The September returns were a little below those of August, when the net operating income, \$98,381,200, was representative of an annual return of 4.94% on tentative valuation. Operating revenues in September were \$545,502,700, an increase of about 6% over Sept. 1922, and operating expenses were \$415,983,500, an increase of 2% over Sept. 1922.

For the 9 months ended Sept. 30, U.S. class 1 railways' net operating income was \$718,948,600, equivalent to an annual rate of return of 5.27%. This was an increase of \$189,478,920 over the first 9 months of 1922, when the equivalent annual rate of return was 3.96%.

A feature of the September operations is that the western U.S. railways, which up to the end of August had been experiencing very unfavorable earnings, did much better, the equivalent annual rate of return earned by this group being 4.86% for the month. This was, no doubt, due in great part to heavy traffic caused by crop movements. The eastern roads did not do so well as in preceding months, earning at the annual rate of only 3.93% in September, while the southern roads continued to derive favorable earnings, their equivalent annual rate for the month being 5.2%.

Freight Rates and Rolling Stock for Alberta Coal for Ontario.

M. J. Butler, C.M.G., LL.B., of Oakville, Ont., at one time Deputy Minister of Railways and Canals, read the following paper before the Engineering Institute of Canada's Toronto branch, Nov. 8:—Is it possible to allocate to freight service, the costs per train mile, as distinguished from passenger service? Prof. William Z. Ripley, in Railroad Rates and Regulations, states: "So many expenditures are incurred indiscriminately on behalf of the service as a whole, being an indispensable condition for operation of the property at all, that no logical distinction of expenses, even as between passenger and freight traffic, is possible." If this is true, and it is usually accepted by authorities, how then are we to say just what rate of freight will prove to be profitable? It seems to show that there is a way whereby we may fairly estimate, that if we succeed in earning, on a new business the average train mile earnings, we shall at least have a rational basis to work with. There is one measure of effective operation, and that is to concentrate in the train load the maximum number of tons, the physical character of the railway will carry, to provide locomotives powerful enough to haul the heaviest trains, to provide cars of large capacity so as to keep down the dead load to a minimum, and run all such trains solid from division point to division point, allocating the locomotives and cars exclusively to the special business. Prof. Ripley also says: "The train load is generally adopted today as the unit of operation, measuring the cost of the service. It is a fact that, within certain limits, the cost of handling a train does not vary greatly with its capacity. Eaton, in his Railroad Operations, concludes that from 30 to 50% of cost is independent of the train load. The effect is that any increment in the paying load very materially decreases the cost of operation per ton."

We have in the Canadian National Rys. a great system, with, at present, insufficient traffic offering to adequately meet the enormous fixed charges. Yet in Alberta there are very large fields of high class coal and in Ontario a market for a very large business: the ideal long haul, that will justify a special equipment, and enable a steady uniform flow of heavy tonnage. To quote from Professor Ripley, under somewhat similar conditions, a rate must be named that will secure the business, "And one comfort may be uncovered in so doing. The lowered rate may so stimulate new business and enlarge the volume of traffic, that it may be handled at much lower cost. In fact, this consideration alone, in absence of all competition, may induce a lowering of rates at certain points out of line with the general schedule. This incentive, conditioned by the fact of increasing returns, is always in the background. The destiny of many places is manifested in terms beyond the control of the carrier. Soil may be poor, climate or population adverse to progress, but some particular places enjoy peculiar advantages for growth. Not to stimulate new business at these points where traffic might be cultivated, even without rivals in the field, is little better than allowing it to escape over a competitor's line of rails, were they present. So indisputably has this law that an expanding volume of business up to a certain point may profitably be carried at a continuously lowered cost, been proved, that it is estimated, by so competent an authority as

the Engineering Review, that, provided sufficient tonnage be available for 2,000-ton freight train loads, a cost of one mill per ton-mile can be attained. This, of course, does not imply that any railway in actual operation, carrying all kinds of freight, including a large proportion of local traffic, can in the immediate future hope to attain this result. It is intended only to show that, provided the volume of traffic be large enough, the cost of operation tends to decline as a matter of course, until a congestion for the existing plants has been reached. At this point a new cycle of costs of operations and profits makes its appearance. There is in effect, but one principle that actuates traffic officers in naming a rate, and that is, what will the traffic bear?"

The rates quoted by the Canadian National Rys. General Traffic Manager, Mr. Dalrymple, are prohibitory and evidently were made with the purpose of prohibiting bringing Alberta coal to Ontario points, the temporary rates named by Sir Henry Thornton, while reasonable from the experimental standpoint, with the inadequate equipment in use, will not be profitable to the railway.

It would seem to be the part of wisdom to learn what is being done elsewhere in the way of equipment provided, where, the conditions are sufficiently parallel, i.e., a larger steady low grade traffic to be moved from point of production, the mines, to the point of shipment, on the lakes or seaboard. The Great Northern owns 69 Mallet locomotives. Locomotive 2,022 handled a 16,000-ton train of ore over a 114-mile division in 6½ hours; grades 0.4%, and one grade of 0.6%. The Chesapeake and Ohio, the Norfolk and Western and the Illinois Central coal roads, are well equipped with Mallet type locomotives, steel coal cars of 50, 75, 80, 100 and 120-ton capacity. The Virginian Ry., a coal road, in 1920, operating 523.57 miles, hauled 100 120-ton cars of coal from Princeton, W. Va., to Roanoke, Va. The standard train is 8,500 tons of mixed cars, but the grades, with the locomotives owned, can handle 15,000 tons when sufficient empty and load brakes are available to get them down a 1.5% grade. They have 14 miles of 0.6% grades against the loaded movement over the Allegheny mountains. The maximum grade, other than this, in the direction of loaded traffic is 0.2%. They have two sections of 1.5% grade, one 8 miles long, and one 11 miles long, in the direction of the empty movements. Rolling stock owned to handle the freight consists of the following:—

		Traction power	
Consolidated,	2-8-0	29,400 lb. each.....	8
Mikado, M.A.,	2-8-2	45,200 " ".....	6
Mikado, M.B.,	2-8-2	56,000 " ".....	42
Mikado, M.C.,	2-8-2	60,800 " ".....	18
Mallet, A.A.,	2-6-6-0	70,800 " ".....	4
Mallet, A.C.,	2-6-6-0	90,000 " ".....	8
Mallet, A.B.,	2-8-8-2	97,400 " ".....	1
Mallet, A.D.,	2-8-8-2	115,000 " ".....	6
Mallet, U.S.,	2-8-8-2	101,250 " ".....	20
Mallet, A.E.,	2-10-10-2	166,300 " ".....	10
Triplex,	2-8-8-8-4	166,300 " ".....	1
Cars in freight service are as follows:			
Box,	80,000 lb.....		536
Flat,	80,000 lb.....		186
Stock,	80,000 lb.....		848
Flat bottom gondolas,	218,000 lb.....		574
Flat bottom gondolas,	105,000 lb.....		2,985
Hopper coal,	100,000 lb.....		148
Hopper steel coal,	105,000 lb.....		2,176
Hopper steel coal,	110,000 lb.....		999
Flat bottom steel coal,	110,000 lb.....		993
Total			7,875
Capacity, Dec. 31, 1920, 512,330 tons.			
The quantity of coal handled in the year was:			
Anthracite, 9,686 tons; bituminous, 7,145,731 tons.			
Mileage of loaded freight cars north			
and east.....			53,126,394

Mileage of loaded freight cars south and west.....	2,583,540
Mileage of empty freight cars north and east.....	415,944
Mileage of empty freight cars south and west.....	50,895,227

This shows a practically one-way load with returned empties.

The approximate distance from Alberta coal fields to Toronto, all rail, is 2,500 miles, according to the evidence of Mr. Mallory given before the House of Commons committee. The average length of division on the Canadian National is 137.5 miles. Good practice shows that solid through trains may be safely run through two divisions a day, or 275 miles, at an average speed of 15 miles an hour, changing crews only at division points. The time the train is in motion is, say, 18 hours; number of divisions, 16; total time required for such a train, 144 hours. Twelve hours may be added for incidentals, making 156 hours from coal spur to a Toronto yard.

To start with, two trains a day would be the minimum business that would fairly test the possibility of a profitable business. What equipment would be required for a service of two trains a day? With 16 divisions to cover, two trains a day, 64 locomotives would be required. As locomotives must be shopped for repairs from time to time, an addition must be made of, say, 6, making 70 locomotives to be provided of the 2-8-8-2 class with a tractive power of 101,250 lb. each. Allowing 16 lb. a ton to cover resistance of train load, this type of locomotive would handle a gross train load of 6,300 tons. If 75-ton coal cars are used, the dead weight of the car is 32.5 tons and the weight of car loaded is 107.5 tons each, or a train of 58 cars, with 4,350 tons of coal.

The gross earnings necessary to be had in order that the business may be profitable to the railway should be about \$5 a train-mile, hence we get, allowing 5,000 train-miles per 4,350 tons of coal, an average price or cost of \$5.75 a ton. If, however, the railway seeks to carry on this business using the mikado locomotives with an average tractive power of 60,800 lb. and with 50-ton coal cars, the gross weight of the train would be 3,800 tons, or say, 53 cars, and 2,650 tons of coal, and the cost would be, on the same basis, \$9.43 a ton.

It will be necessary to provide, to handle two trains a day using 75-ton cars:

2,000 cars at \$4,000 each.....	\$ 8,000,000
70/2-8-8-2 Mallet locomotives at \$90,000 each	6,300,000

Total equipment..... \$14,300,000

The necessary vans, it is assumed, are already available.

A total of 8,700 tons of coal a day would be delivered in the Toronto district and not less than 300 days a year would be devoted to it, thus bringing forward 2,610,000 tons of coal. Needless to remark, the coal, to bear so heavy a transportation charge, must be of the best quality, and compare favorably with the best anthracite coal on the market, and the price at the mines f.o.b. cars, must be on an economical basis, comparable with Pennsylvania mining costs.

The hauling capacity of this type of Mallet locomotive westbound, allowing resistance of 20 lb. a ton, would be 5,000 tons; the weight of the returning empties would be about 1,900 tons. It would therefore be practicable to add a con-

siderable number of loaded cars to the extent of limiting length of train that could be safely handled through the passing tracks, yards, etc., thereby reducing the cost per ton of coal by the amount thus earned.

The discussion following the reading of the paper was begun by R. A. C. Henry, Director, Bureau of Economics, Canadian National Rys., who stated that Mr. Butler's contention concerning the practicability of carrying Alberta coal to Ontario was based on six assumptions, viz., that \$5 a train mile is a fair earnings figure for the trains contemplated; that traffic will move regularly throughout the year; that Alberta domestic coal can be successfully transported in open top equipment; that trains can be hauled over all divisions without the necessity of breaking up or terminal switching; that no expenditure additional to that proposed for equipment would be necessary; and that trains could be run solid to a point in Ontario and run back from that point to Alberta without the necessity of the cars being used for further distribution of the coal to Ontario points. Mr. Henry questioned the accuracy of all of these assumptions, and quoted numerous figures abstracted from railway operating statistics to demonstrate that too much had been assumed.

R. L. McIntyre, of the structural steel firm of McGregor & McIntyre, Toronto, who is interested in an Alberta coal mine, spoke at length of the great desirability of keeping Canadian money at home, instead of sending it to the U.S. for coal, and said that coal he had received from Alberta in box cars showed less than 2% deterioration.

H. K. Wicksteed, formerly Chief Engineer of Location, Canadian Northern Ry., spoke of the success met with in the west in burning Alberta coal in a pulverized condition, and predicted great strides in the future in pulverized fuel use.

W. T. Jackman, Professor of Political Economy, Toronto University, while agreeing with the desirability of using Canadian coal if possible, expressed the opinion that the transportation of Alberta coal to Ontario is not feasible, viewed from an economic standpoint, and clearly laid down the principle that the Canadian National Rys. should not be asked to carry commodities for less than cost.

S. B. Wass, Resident Engineer, Toronto Eastern Ry., who had charge of the Canadian National Rys.' Neebing terminal development, near Fort William, Ont., stated that the locomotive terminal facilities on the transcontinental railways in Canada are not suitable for handling Mallet locomotives of the type proposed.

Canadian Motor Train in France.—A special motor train containing samples of Canadian natural and manufactured products has been travelling through France since July 1. The cars, which are drawn along the highways by motors, and are parked for exhibition purposes, reached Paris Oct. 29, where they are expected to remain for two months. Senator C. P. Beaubien is in charge of the exhibition, and on its opening in Paris, he conveyed to the French people a message from Sir Henry Thornton, President Canadian National Rys., in which Sir Henry referred to the opportunities he had during the war as Assistant Director-General of Transportation, of coming in contact with the leaders of the French people. It is reported that the train will be taken to London from Paris.

Board of Railway Commissioners Directed to Enquire Further Into Western Freight Rates.

The following was approved by the Governor-General on Oct. 24 and passed as order in council 2166: The committee of the Privy Council having had under consideration a petition to the Governor in council by the Attorney-General of British Columbia, acting on behalf of that province, and by the Attorney-General of Alberta, acting on behalf of that province, by way of appeal from a general order of the Board of Railway Commissioners for Canada dated June 30, 1922, made as the result of a general investigation and enquiry as to railway rates in Canada recommended by order in council 2434, of Oct. 6, 1920, submits as follows:—

The order appealed against is one made by the Board of Railway Commissioners for Canada, dated June 30, 1922, in consequence of a reference to the Board pursuant to the provisions of order in council 2434, of Oct. 6, 1920, which primarily related, among other things, to the alleged discrimination in freight rates against western Canada as compared with those prevailing in eastern Canada. During the hearing, the Province of British Columbia applied to the Board to be heard, asking that the scale of rates then existing upon the prairies be extended to the Pacific Ocean. It was admitted that the Pacific scale of so-called class and distributing rates was based upon a ratio of one and one-half miles of prairie territory to one mile of Pacific territory. The committee deems it proper to call attention to the provisions of the Railway Act 1919, sec. 52, under which this application was heard, and to observe that while this section confers upon the Governor in council very wide powers as to varying or rescinding any order of the Board, and while the discretion so vested in His Excellency in council in proceedings under this section is not subject therein to any defined limitation, the intent of the legislation is to invest His Excellency in council with judicial powers by which he may in his discretion aid in securing and enforcing the provisions of the Railway Act, having due regard to the method of railway rate regulation by an independent commission, which was the outstanding innovation in the Railway Act of 1903, and which has been preserved throughout succeeding revisions of the act to the present time.

The act of 1903 provided for the creation of a Board of Railway Commissioners, and constituted it a court of record, with all the powers of such a court as to the hearing of witnesses and obtaining of evidence. The members of the Board are peculiarly qualified, by long and varied experience, to deal with the highly technical subjects which come before them, and for the purposes of investigations have available an efficient expert organization and a complete system of statistical and other records accumulated from year to year in the course of their administration of the act's provisions. For these reasons it does not appear to your committee that it is desirable, except under very extraordinary circumstances, that the Governor in council should undertake to re-hear or review the Board's decisions, as to whether upon the facts appearing in the evidence before it in any particular case the provisions of the statute with regard to rates have been complied with. This observa-

tion is particularly pertinent in the present case, which arises out of a general investigation undertaken pursuant to the direction of His Excellency in council.

In the present case it appears that the allegations of the petition and the arguments of counsel representing the petitioners relate wholly to questions of fact and the principles in regard to the regulation of railway rates in Canada under the Board's jurisdiction. The order in question was made as the result of a very thorough enquiry by the Board, extending over more than a year and a half preceding the date of the order, during which hearings took place in all parts of Canada. At such hearings representatives of boards of trade, municipalities, provinces and other interested parties were present or represented, and voluminous exhibits and statements were presented and filed. The judgment upon which the said order was based revised and altered in important respects the rates of toll throughout the Dominion, including the so-called Pacific Scale of rates, which was by it reduced from the ratio of one and one-half miles on the prairies to one mile in Pacific territory, to a ratio of one and one-quarter miles on the prairies to one mile in Pacific territory.

The Province of British Columbia filed a petition to the Governor in council, by way of appeal from this decision of the Board, and later the Province of Alberta was joined as a party to the petition. On the argument, counsel for both of these petitioners were heard in support of the petition, which was opposed by counsel for the Manitoba Government and Winnipeg Board of Trade and for the railway companies interested. One of the main grounds of appeal dealt with on the argument was that regarding export grain rates from Alberta, Saskatchewan and Manitoba to Vancouver and other British Columbia coast points. This matter has been specifically dealt with by order in council 2,007 of Oct. 2, 1923.

The committee, therefore, recommends that all other subjects of complaint referred to in the said petition be also remitted to the Board of Railway Commissioners, to be dealt with as it may deem proper upon the evidence already adduced, and the arguments presented before the Board and your Excellency in council. The committee observes, however, that in view of the vital importance of facilitating the interchange of commodities between the various sections of Canada, railway rates should be maintained at as low a basis as possible, having regard to all proper considerations. Accordingly the committee is of the opinion that in the future, should transportation and traffic conditions so change as to render practicable a nearer approach to equalization of rates as between prairie and Pacific territory, the Board should, in the exercise of its discretion, take such action as may be necessary to bring about this result. All of which is respectfully submitted for approval.

The Brotherhood of Locomotive Firemen and Enginemen's annual meeting, which opens in Winnipeg, Dec. 2, will have as a special feature the celebration of the fiftieth anniversary of the union's foundation.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick Bridges.—The Board of Railway Commissioners has authorized the rebuilding of bridge 78.46 over Middle Shikitihaik River, Shogomoc Subdivision, N.B., and bridge 27.4, St. Stephen Subdivision, N.B.

Eastern Lines Betterments.—Extensive betterments have been made on Eastern Lines this year. They include a subway at Westmount station, Que., the installation of an electrical interlocking plant to control the movements of trains passing to and from Glen yards, and a large new coaling plant at Outremont, Que. Nearly 200 miles of new 100 lb. rails have been laid on the Sherbrooke Subdivision between Megantic and South Stukely and between Vaudreuil and Ottawa, and over 200 miles have been rock ballasted, mostly between Montreal and Toronto. By the close of the season the company will have rock ballast over 700 miles on its eastern lines. Between Megantic and South Stukely, 206 miles of track were replaced by one gang in 20 days. On one day they laid 10 miles of track in 10 hours,

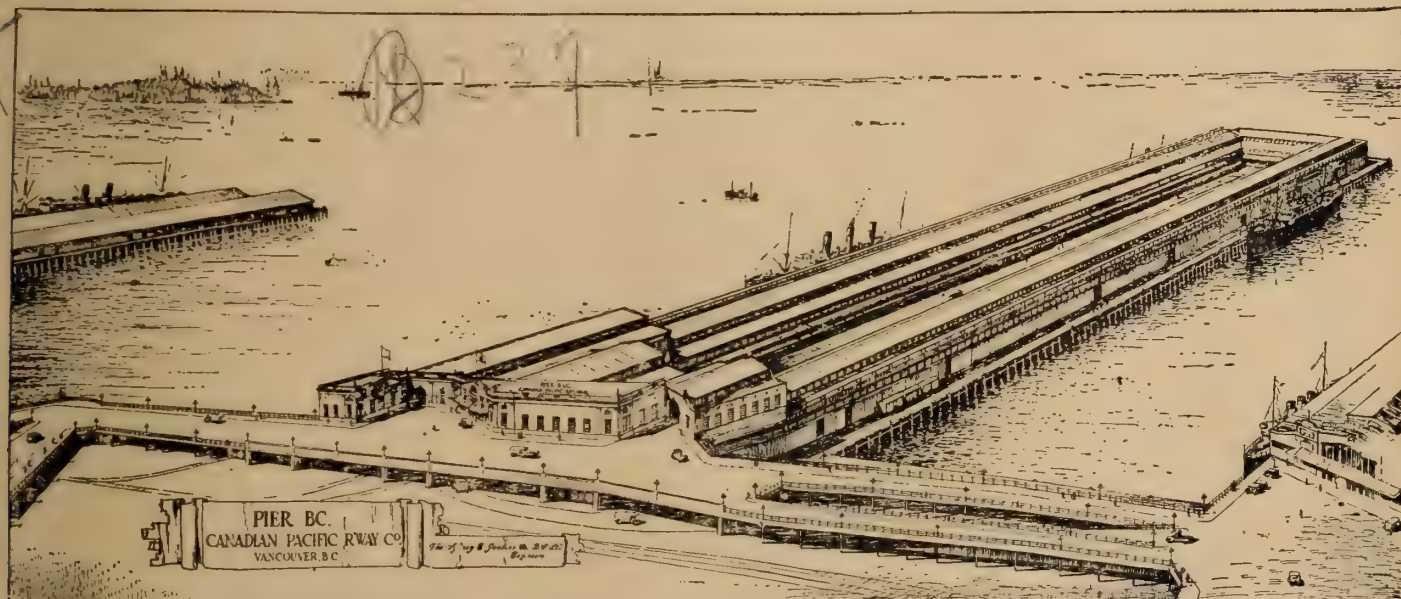
in regard to outlying station buildings and steel bridges. At Montreal, Megantic and Jackfish, large reinforced concrete coaling plants, with capacity of 300 tons each, have replaced the old wooden structures, thus reducing the fire hazard. Ten all-steel water tanks of from 40,000 to 100,000 gall. capacity have been erected at various points. One hundred and twenty-five track miles of the rails released from the main lines were taken into the shops, where the rail ends were sawn off and redrilled for branch line extensions in the west, and for the relaying of branch lines where light rails are in service. This work has also been in progress to an even greater extent at the C.P.R. Winnipeg shops. Other track improvements include the installation of tile drainage, through cuttings on the main line for the improvement of track drainage and strengthening of the road-bed. Other large works undertaken, and not yet completed, are a new passenger station at Fredericton, N.B., and of a freight shed with team delivery tracks at Pembroke, Ont.

pg. 532.)

Leader Southerly Branch.—The Board of Railway Commissioners has authorized the opening for traffic of the section of this branch from Leader, on the Swift Current-Bassano line, between miles 0 and 25.31. (Oct., pg. 483.)

Moose Jaw Southwesterly.—The Board of Railway Commissioners has authorized the carriage of traffic over a portion of this branch, between miles 207.34 and 268.57.

Shuswap Subdivision Bridges.—The Board of Railway Commissioners has authorized the rebuilding of the following bridges on this subdivision, British Columbia District:—No. 26.5, over north fork of Eagle River, present 100 ft. through pony truss span to be replaced by a 100 ft. through plate girder span. No. 37.26, present 150 ft. through truss span to be replaced by heavier span of similar type and size. No. 40.61, over 7th crossing of Eagle River, present 150 ft. through truss span to be replaced by heavier span of similar type and size. No. 65, over Salmon River, present 60 ft.



Canadian Pacific Railway Pier B.C., to be built at Vancouver.

This pier, the building of which, President Beatty announced at Vancouver recently, will be proceeded with at once, will be about 850 ft. long and 331 ft. wide, and will have erected on it 2 double-deck sheds each about 750 ft. long and 100 ft. wide, connected at their outer ends to form a U, and with 4 railway tracks between the two sheds and 2 tracks between each shed and the side of the pier. Sydney E. Junkins Co., Winnipeg and Vancouver, have the contract for both the substructure and superstructure. Another view of the pier, from the water side, was given in Canadian Railway and Marine World for May, pg. 224.

and this with trains continually passing. One mile of the track was changed in 28 minutes. The steel to Ottawa was laid in 27 days. In addition to the laying of the new steel, the track has been completely equipped with tie plates, which gives an added degree of safety. Bridges have been given particular attention, and their renewal to handle the heaviest power between Calumet and Ottawa has enabled the company to cut 45 minutes off the Place Viger-Ottawa time schedule. The renewal operations were commenced last summer, and completed early this autumn, without a single incident which could cause delay to traffic. The creosoting plant at Sudbury has been in operation all summer and delivered over 1,000,000 track and switch ties, which were distributed to various parts of the Eastern Lines. Nine hundred thousand ties are stacked ready to be seasoned and treated by this plant.

The company has carried out an extensive painting programme, especially

Interprovincial & James Bay Ry.—Tracklaying on the extension from near Kipawa, Que., to the Quinze River Falls, with the branch from Gaboury to Ville Marie, are reported to have been completed, and the ballasting and other finishing up work was expected to be finished by Nov. 30. A spur line is being built at the Quinze River, in connection with a power plant which is under construction. It is reported that plans are in preparation for the extension of the line for 32 miles to the Rouyn gold mining area, so that work can be started on it as soon as the Quebec Legislature passes the necessary authority and subsidy. (Nov., pg. 452.)

Tuffnell-Prince Albert Branch.—The Board of Railway Commissioners has approved revised location of this branch between miles 91.82 and 95.80, with permission to cross a number of highways and road allowances, and has authorized its construction across the Canadian National Rys. line at Tisdale, Sask. (Nov.,

half deck plate girder span to be replaced by standard 60 ft. half deck plate girder span.

C.P.R. Colonization Promotion.—The C.P.R. is carrying on an extensive winter lecture campaign in England, Wales and Scotland to promote emigration to Canada. Miss Mackie opened the campaign at Errol, Perthshire, Scotland, Oct. 2, and the meetings were continued by W. L. Payne, of the C.P.R. Publicity Department, London, in Gloucestershire, in the following week. The campaign will also be taken part in by L. P. Thornton, E. S. Williams of the C.P.R. Colonization and Development Department; A. J. Ward, Toronto; Capt. C. E. Hutton, British Columbia, and Mrs. Porteous, Montreal.

The U.S. Coal Commission has recommended government regulation of the coal industry, on the ground that there is in it the same degree of public interest as in the railway industry.

Grain Elevator and Conveyor Galleries for Halifax.

The Department of Trade and Commerce received tenders to Nov. 15 for the erection, for the Railways and Canals Department, of a reinforced concrete and steel grain elevator plant at the Canadian National Rys. ocean terminals at Halifax, N.S., with 1,110,100 bush. storage capacity. The plant will consist of the following units:

A receiving house, 68 x 61 ft. in plan by 178 ft. high, the lower part of which will consist of ground floor, with boot pits for receiving legs, to be built of concrete, while the upper part, or cupola, will be of structural steel, with corrugated metal siding, concrete floors and roof, supported on steel bents, bearing on concrete footings independent of the lower part. The principal equipment will consist of 2 receiving legs and two 2,500 bush. scales, each with one 2,500 bush. garner above. A cleaning house will be incorporated in the lower part of the receiving house, with equipment for cleaning grain and collecting dust.

The storage house, 226 x 70 ft. in plan by 122 ft. high, will consist of 52 circular bins, 16½ ft. diameter by 100 ft. high, each of 17,800 bush. capacity, and 36 interspace bins, each of 5,125 bush. capacity, making a total of 1,110,100 bush. The bins will be completely covered with a 2½ in. concrete floor, resting on steel beams, but not anchored to them in any way. Over the bins there will be three 42 in. belt conveyors, each with a 2-pulley tripper. These conveyors will extend through the shipping and receiving houses. In the storage house basement there will be four 36 in. belt conveyors, with spouts and loaders from each bin.

The shipping house will be 69 ft. 11 in. by 33 ft. 10 in. plan by 140 ft. 8 in. high. The lower part will be of concrete construction, and the upper part will be of structural steel, with corrugated metal siding, and supported on steel columns bearing on the concrete structure. The principal equipment of this house will consist of 4 shipping legs, each of 15,000 bush. capacity, but only 3 of these will be built at first, provision being made for the addition of one more in the future. There will be installed three 1,000 bush. scales, with provision for a fourth to be installed later. Four garners, each of 2,000 bush. capacity, will be installed above, and 4 garners of similar capacity below the scales.

The car unloading plant will consist of a car dumper building of structural steel, with corrugated metal siding and concrete foundations, floors and roof. One mechanical car dumper will be installed at first, with provision for the addition of a second one later. The car dumping machine will be capable of unloading 8 carloads of grain an hour and will be operated by electricity. The car dumper shed will be provided with a pair of power shovels for unloading cars. In addition, there will be track hoppers, belt conveyors and tunnels to the receiving house. There will also be a complete system of conveyor galleries and drive towers, connecting the elevator with the terminal's various shipping piers.

A compressed air system will be installed to blow dust out of motors, and assist in general cleaning in inaccessible places. This system will be extended through the receiving, storage and shipping houses and the conveyor galleries. There will be a complete dust collecting system, for conveying dust from the cleaning machine, floor sweeps, belt conveyor head spouts, and all elevator boots,

to dust collectors located outside the buildings. The dust from the collectors will be spouted to housed in receptacles, from which it will be carried away. The dust collecting system will extend throughout the receiving, storage and shipping houses.

The elevator will be operated by electricity, the current for motors being 550 volts, 60 cycles, 3 phase, while that for lighting will be 110 volts, 60 cycles, single phase.

The plant has been designed by the John S. Metcalf Co., and every effort possible has been made to provide every known safety device, and the necessary equipment for its operation as a first class modern grain elevator.

Canadian Railway and Marine World is advised that the elevator will be built by the Trade and Commerce Department, and not by the Railways and Canals Department, as the Canada Grain Act gives the Trade and Commerce Department power to build elevators, and it has built a number in western Canada which are being operated by the Board of Grain Commissioners. The Dominion Parliament, at its last session, voted \$200,000 towards building an elevator at Halifax, and \$200,000 towards one at Edmonton, Alta., these amounts being included in the Trade and Commerce Department's estimates. As the Railways and Canals Department had plans ready for the Halifax elevator, the Trade and Commerce Department is using them, and as the Railways and Canals Department has engineers, and the Trade and Commerce Department has not, the plan will be built under the Railways and Canals Department engineers' supervision. As possibly the construction, maintenance, and operation of a grain elevator may not be considered within a railway's purview, we are informed that it is probable that the Halifax one will be operated by the Trade and Commerce Department, under the Canada Grain Act, though this policy may be changed later on.

Transportation Events of Twenty-five Years Ago.

From Railway and Shipping World, now Canadian Railway and Marine World, for Dec. 1898.

Allan Steamship Lines adopts St. John, N.B., as winter port.

Richelieu & Ontario Navigation Co's steamboat Toronto completed.

H. D. Lumsden completed survey for C.P.R. Toronto-Sudbury line.

G.T.R. appointments: C. S. Cunningham, Trainmaster, Island Pond, Vt.; J. Irwin, Trainmaster, Detroit, Mich.

J. D. McDonald, City Passenger Agent, G.T.R., Buffalo, N.Y., also appointed City Ticket Agent, Western New York and Pennsylvania Rd. there.

B. C. Gesner appointed General Air Brake Inspector, Intercolonial Ry., Moncton, N.B.

Marriages: F. W. Morse, Superintendent, Motive Power, G.T.R., to Miss G. Bass of Fort Wayne, Ind.; R. S. Logan, Secretary to General Manager, G.T.R., to Miss A. Rankin.

Pembroke Southern Ry., from C.P.R. at Pembroke, to Golden Lake on the Ottawa, Arnprior & Parry Sound Ry., 21 miles, completed.

Quebec Central Ry. built shops at Newington, near Sherbrooke.

Lake Manitoba Ry. & Canal Co. laid

56 miles of track, from Sifton Jct. to Swan Lake District, Man.

Manitoba & Southeastern Ry. laid 46 miles of track from St. Boniface, Man.

Northern Pacific Ry. completed 46½ miles of Souris River branch, Man.

Vermont Legislature authorized reorganization of Central Vermont Rd., to take over old C. V. Rd. after its sale under court decree.

Canadian Customs Department seized 18 locomotives and 1,000 box cars of Canada Atlantic, and Ottawa, Arnprior & Parry Sound Rys., for alleged non-entry and non-payment of customs dues.

M. H. MacLeod, appointed Superintendent, Crowsnest Pass branch, C.P.R.

Montreal Herald published a Thanksgiving Day symposium: "What We Have to be Thankful For." Sir Wm. Van Horne gave the laconic answer: "The Dingley tariff."

C.P.R. and G.T.R., having settled differences, rates were restored and C.P.R. northwestern traffic was resumed between Toronto and North Bay.

President J. R. Booth, of Canada Atlantic Ry., announced that a union station would be built in Ottawa, for the three railways entering there, to cost about \$130,000.

C.P.R. completed Stonewall Branch extension, from Stonewall to Foxton, Man., 18 miles; Pipestone Branch extension, from Reston, Man., 20 miles; Crowsnest Pass Ry., from Lethbridge, Alta., to Kuskanook, B.C., about 290 miles; partly completed, standardizing Columbia Western Ry., between Trail and Rossland, B. C., and completed about 70% of grading and rock work between Rossland and Midway, B.C.

Settlement by U.S. Government of G.T.R.'s Claims.

The U.S. Government, through the U.S. Railroad Administration, made the final payment of \$2,619,525.12, in respect of guarantees to the Grand Trunk Ry.'s U.S. lines on Oct. 3. A payment of \$2,394,500 on account was made in May 1921. We are officially advised that the claims were as follows:—

Grand Trunk Western Ry.....	\$2,171,829.18
Detroit, Grand Haven & Milwaukee Rd.	1,038,545.94
Toledo, Saginaw & Muskegon Ry.....	180,278.57
Pontiac, Oxford & Northern Rd.....	173,700.93
Detroit & Huron Ry.....	19,390.37
Chicago, Detroit & Canada G. T. Jct. Rd.	292,366.84
Michigan Air Line Ry.....	118,191.54
Cincinnati, Saginaw & Mackinaw Rd.	182,762.78
Grand Trunk Milwaukee Car Ferry Co.	66,888.04
Atlantic & St. Lawrence Rd.....	724,523.33
Lewiston & Auburn Rd.....	45,547.60
Total.....	\$5,014,025.12

These claims were made and paid as provided by the Transportation Act, 1920, sec. 209.

Timiskaming & Northern Ontario Ry. Fire Insurance.—As stated in Canadian Railway and Marine World for November, the Commission received tenders to Nov. 1 to provide rate or rates for fire insurance on the whole or portion of its property, for one year and three years, respectively, from Dec. 1. We are officially advised that Irish and Maulson, Toronto, were the successful tenderers.

Stevedore Loots Railway Cars.—John Rusnow, a stevedore, was sentenced to 12 months' imprisonment by the Port Arthur, Ont., Police Magistrate, Oct. 31, for stealing a large quantity of goods from Canadian National Rys. cars. He pleaded guilty, the goods being found at his boarding house.

Canadian National Railways Ask Re-opening of Assigned Coal Car Case.

As stated in Canadian Railway and Marine World for August, the Interstate Commerce Commission, after an enquiry which started in March, issued an order on June 13, forbidding railways in the U.S. to continue their practice of assigning coal cars to such mines as they saw fit, and from dividing cars among mines to suit railway needs, and directing them to pro-rate their cars among all the mines served by their lines. The order concerned bituminous coal only. The Commission's majority decision held that the Interstate Commerce Act, Sec. 1, paragraph 12, did not make the car assigning system previously used by the railways illegal, but said: "The practice of the railways in assigning private cars, and system or foreign-line cars, for railway fuel, to bituminous coal mines, in excess of the ratable share contemporaneously distributed to bituminous coal mines upon their lines, which do not receive assigned cars, is found for the future to be unjust and unreasonable, and unduly and unreasonably prejudicial to mines not receiving assigned cars, and unduly preferential to mines which are furnished such cars in excess of the ratable proportion." As stated in our August issue, the Commission's majority decision was vigorously attacked in a dissenting opinion by Commissioner Potter, who stated the ruling would have the effect of making even worse the present bituminous coal situation in the U.S., where there are twice as many mines as needed, 250,000 more miners than necessary, and wages double what should be paid, the last necessary to enable the miners to get a full week's wage for three days' work.

As was to be expected, the Commission's ruling created a serious situation for the Canadian National Rys., which, on account of their ownership of important mines in Ohio and some 6,000 hopper bottom coal cars, used to transport U.S. bituminous coal from the mines to the Canadian lines, were faced with a situation wherein they would not be free to send their own cars to their own mines, or to other mines from which they had contracted to buy coal, but would be forced to distribute them among many mines. The Canadian National Rys. mines were brought into the system with the G.T.R., and belonged formerly to the Rail & River Coal Co. The G.T.R., at the time of the hearing, had 5,456 hopper bottom coal cars; other Canadian National Rys. lines had a certain number, and 500 more were ordered in the early part of the year, and have been delivered.

In an effort to obtain relief from the conditions brought about by the Commission's ruling, the Canadian National Rys., on Aug. 25, petitioned the Commission for a re-opening of the proceedings and an opportunity of presenting argument. The petition was presented by J. H. Fishback, Washington, and was in part as follows: "The Canadian National Rys. ask that this company, and various other carriers and private car owners who have not been heard in testimony, be afforded opportunity to make known details of car supply, coal supply and costs, and what would be the approximate result in enormously increased prices, based on past experience, as a result of the assigned car rule's abrogation; the serious effects upon locomotive performance when coal has to be drawn from indiscriminate sources instead of from par-

ticular mines producing certain grades of coal suitable for engines of different drafts; enormously added cost of purchasing fuel in the open-market, running into millions of dollars, which must be borne by the consuming public as well as by the railways; the extent to which the Canadian National Rys. contribute, under present methods of car supply, to the distribution of cars in the U.S., assisting materially in car supply of U.S. railways; that the mines in the U.S. not having assigned cars are aided to an important extent through the purchase and use by Canadian railways of their own cars in drawing coal supplies from the U.S.; that coal is stored in larger quantities; that larger storage is not only practicable, but wasteful, and impairs efficiency of fuel; that the Canadian National Rys. mines in the U.S. do not compete with commercial mines." The petition also stated that no complaint was ever made against the use of assigned cars by Canadian railways in acquiring and moving the supply of coal necessary to be obtained for their use from the U.S., and that no injustice ever resulted to anyone from the C.N.R. practice of assigning cars.

It was also pointed out that the Canadian National Rys. could not get coal for their Central Region from eastern or western Canada, except by providing excessive and wasteful transportation; that the investment for mines in the U.S. and for coal cars was made on the strength of former decisions made by the Interstate Commerce Commission, which made the assigning practice permissible; that if the railways had to distribute cars among many mines on a pro rata basis they would have to go into the open market for coal and pay high prices, and that bills introduced in Congress to abolish the assigning system had failed to pass, thus proving that the Government did not consider it to be in the public interest to abolish the custom. It further points out that the Commission had based a decision of some time ago, permitting the custom on the fact that it is a public necessity that the railways have fuel, and that that reason is as good now as it was then; that experience under fuel control, and Federal control, of railways, when the custom was suspended, was that it at once became necessary for railways to confiscate coal at all stages of its trip from mine mouth to destination, introducing a great evil into industry; that the abolition of the car assigning right would not tend to improve car supply, but would make conditions in this respect worse; that cars supplied by Canadian railways for obtaining their own coal are not a part of the coal carrying equipment of U.S. railways; that customs of long standing should not be suddenly ordered stopped, thus making large investments valueless; that the sending of cars into the U.S. by the Canadian National Rys. over a two year period saved U.S. railways from providing 1,200,000 car miles of transportation service which they would have had to provide if Canadian cars had not gone for the coal; that if the cars could not be assigned to the railways' own mines and to other mines with which contracts for coal had been made, coal of inferior quality would have to be bought, and at higher prices; that if the Canadian cars cannot be assigned, more of them will have to be held under load, and

a lot of them will not be sent into the U.S., with the result that there will be brought about a reduction in U.S. railway coal carrying capacity; that only three witnesses representing private car owners were heard at the last proceedings, a strong reason why the case should be re-opened; that the coal hauled in Canadian cars is for railway use and does not come into competition with commercial bituminous coal; that the Commission's order would have the result of encouraging still more mines to open in the U.S., and create still more irregular labor conditions, whereas there are too many mines now and labor conditions are deplorable; that there is no such thing as a coal car shortage in the U.S., except in so far as the railways are not able to supply the demand for cars, which follows strikes in the mines, or the demand occasioned by hundreds of mines opening to operate only during a period of high prices, and that the order would make car conditions worse instead of better; that it would be eminently unfair to expect the railways to make large investments for equipment to meet this very extreme peak demand—equipment which would be idle more than 90% of the time; that the order doing away with the assigned system would render inevitable, in times of emergency, a resort to emergency orders carrying priorities which, in essence, would be an admission of the necessity and utility of the assigned car practice which has been in force in the past. The petition stated that C. G. Bowker, General Manager, Central Region, had testified at the hearing. The Interstate Commerce Commission has announced that oral arguments in the assigned coal car case will be heard in Washington on Dec. 17, 18 and 19, before the full Commission.

New England Railway Consolidation Plans.

In connection with plans for grouping railways in the United States, Canadian railways are to a large extent interested in what is likely to be done in certain areas of the country, and attention is particularly called at present to the New England States, where the matter is being extensively discussed. In that area the Canadian National Rys. are interested through the G.T.R. main line running to Portland, Me., and through control of the Central Vermont Ry., with its terminus in New London, Conn., and its allied line, the Southern New England Ry., which is projected to Providence, R.I. The C.P.R. is also interested because of its route through Maine. The Connecticut Chamber of Commerce directors are reported to have decided to oppose any further consolidation of New England railways by trunk lines leading to the westward, and to favor extensive consolidations which will not sacrifice the principle of competition. The Boston, Mass., Chamber of Commerce, by a vote at the rate of 3 to 1, has reaffirmed its previous decision to urge the Interstate Commerce Commission to adopt a plan for consolidating into one New England system all lines except the Boston & Albany and the Grand Trunk lines.

The recommendation of the joint committee representing the six New England States in their report in June, was to the effect that there be created a New England system by the

consolidation of the New York, New Haven & Hartford, the Boston & Maine, the Maine Central, and the Bangor & Aroostook. This combination would leave the C.P.R., the G.T.R., the Central Vermont Ry. and the Boston & Albany Rd., as they are at present. Of the railways which it is suggested shall be amalgamated into a New England system, three own lines in Canada, in addition, which give connections with the Canadian railway systems, viz.: the Bangor & Aroostook, which owns the Van Buren bridge and railway connection in Canada, 0.21 of a mile, giving connection with the Canadian National at St. Leonards, N.B., where the old International Ry. of New Brunswick from Campbellton terminates, and through which the National Transcontinental passes. The Maine Central owns in Canada the Washington County Rd.'s Princeton Branch, which extends from St. Croix Jct. to Princeton, Me., passing through a corner of New Brunswick, the length of the line in the province being 5.10 miles; it also owns the Hereford Ry., which extends from the International Boundary near Beecher Falls, Vt., to Lime Ridge, Que., 52.18 miles. The Boston & Maine operates, under a lease for 999 years from July 1, 1870, the Massawippi Valley Rd., extending from a junction with the Connecticut & Passumpsic Rivers Rd., at the International Boundary near Beebe Jct., to Lennoxville, Que., 31.95 miles, and a branch from Beebe Jct. to Stanstead, Que., 3.51 miles; and it has trackage rights over the G.T.R. from Lennoxville to Sherbrooke, Que., 2.95 miles. The Connecticut & Passumpsic Rivers Ry., which is leased for 99 years, to the Boston & Lowell Rd. Co., which in turn is leased to the Boston & Maine Rd. Co., owns \$400,000 of the Massawippi Valley Rd. common stock. The Connecticut & Passumpsic Rivers Ry. also owns the entire capital stock of the Newport & Richford Rd., extending from Newport, Vt., to the International Boundary near North Troy, and from East Richford to Richford, Vt., 22 miles, which is leased for 99 years from June 8, 1881, to the Montreal & Atlantic Ry., which is leased by the C.P.R.

Hearings began in Boston on Sept. 24, before Interstate Commerce Commissioners Hall, Eastman and Cox, and all interested were invited to present their views. P. R. Todd, President, Bangor & Aroostook Rd., testified at length, in favor of consolidating New England roads into one group, without trunk line affiliation, and he was followed by others who were of similar opinion. Counsel for the Associated Industries of Massachusetts opposed the New England plan of consolidation, and advocated the arranging of consolidations in such a manner that certain New England roads and certain trunk lines would be amalgamated into groups.

The matter of railway consolidation has apparently aroused more interest in the New England States than elsewhere in the U.S. A United States contemporary, in discussing the matter editorially recently, said:—"The question of a general consolidation of American railroads is a false alarm. It affords men of an academic turn of mind a whole lot to talk about, but the American public know little about it and care less. The idea was incorporated into the Transportation Act through some trick of the radical minority in Congress, and it will probably die a natural death, for it was not well born and it has no place in the minds of intelligent and busy people."

Canadian Railway and Marine World is inclined to agree with the recently expressed views of Sir William M. Acworth, whose long experience as a student of railway affairs has made him

an authority of international standing, that the principal U.S. railway systems are already large enough to secure all the economies that are practicable with large scale enterprise.

A. R. A. Efficiency Programme Results and Canadian Comparisons.

The American Railway Association meeting in New York on April 5, adopted resolutions with a view to increasing transportation efficiency on U.S. railways, as follows: 1. That by Oct. 1 cars in bad order be reduced to 5% of total. 2. That by Oct. 1 locomotives awaiting

programme was approved by the Association of Railway Executives.

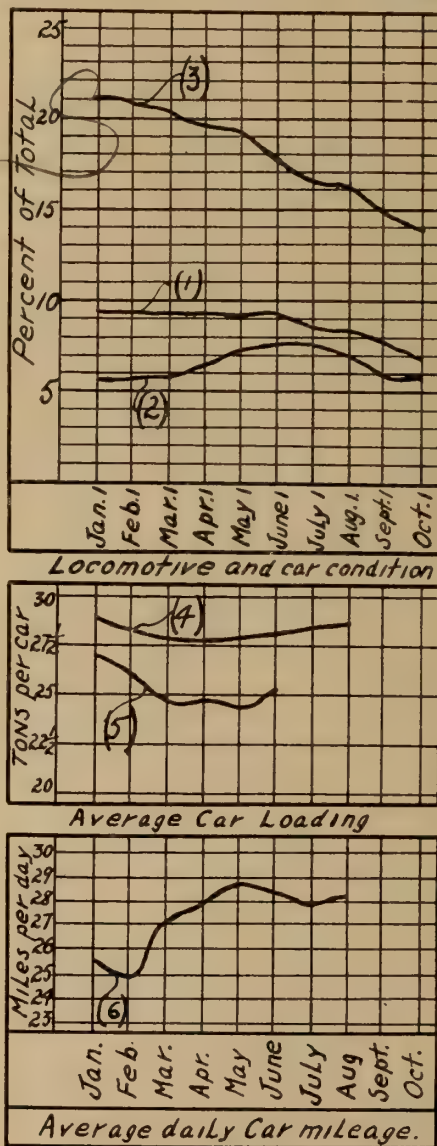
The accompanying charts show the U.S. railways' performance as concerns bad order freight cars, bad order locomotives, average freight car loading, and average freight car daily mileage. Canadian railways' performance as concerns bad order cars and average car loading is also shown. Figures showing locomotive condition and freight car daily mileage for Canadian roads for the months concerned, are not available.

Curve 1 shows the U.S. railways bad order car situation, and that the objective set was not accomplished. By Oct. 1 the number of bad order cars on U.S. railways had been reduced to 6.7%, but as at Jan. 1 the percentage was 9.5, and was over 12 a few months previously, the improvement effected was great. Curve 2 shows that the percentage of bad order cars in Canada has been much less than in the U.S., that for Canadian railways being only 5.8 on Oct. 1. Curve 3, showing the percentage of locomotives on U.S. railways requiring heavy repairs, shows that the object sought in the efficiency programme was accomplished, the number of locomotives requiring heavy repairs being reduced to 13.7% of the total by Oct. 1. Curve 4 shows that the objective of 30 tons a car was not accomplished to the end of August, but a comparison with curve 5, showing the average car loading on Canadian lines, shows that the average loading on U.S. lines is much heavier. Curve 6 shows that the objective of 30 miles a car per day was not attained to the end of August.

In storage of coal for railway use, and other matters included in the programme, good results were secured by U.S. railways, and when the vast freight tonnage handled by U.S. roads during the past 8 months is considered, the degree of success met with in carrying out the transportation efficiency programme must be considered highly gratifying.

C.P.R. Signalman Cleared.—H. K. Honeysett, C.P.R. signalman at Calgary, Alta., was charged with being intoxicated while on duty on Second St. East, there, on Sept. 15. The case was tried before Mr. Justice Tweedie and a jury, Oct. 18, and a verdict of not guilty was given. In discharging Honeysett, the judge is reported to have said that not only had his name been cleared, but he was leaving the court without a stain on his character, as it was quite evident that he had not been drinking at that or any other time.

Indian Railways have adopted a new method of compiling statistics, which combine both English and U.S. methods. On the whole, the U.S. Interstate Commerce Commission's standards have been more closely adhered to than have the British ones, which is doubtless due to the fact that conditions on Indian railways are more similar to those on North American railways than to those in Great Britain.



heavy repairs be reduced to 15% of total. 3. That railways complete storage of coal for railway use by Sept. 1. 4. That as little power and equipment as possible be used by railways in construction and maintenance work after Sept. 1, in order to have the maximum available for commercial traffic. 5. That shippers be encouraged to move as much coal and ore as possible via the lakes early in season. 6. That road and building construction be encouraged as early in season as possible. 7. That the public be impressed with necessity for prompt release of cars, and that efforts be made to increase average car load to 30 tons. 8. That efforts be made to increase mileage per car per day to 30. This pro-

Orders by Board of Railway Commission for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a complete record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 384. Oct. 10.—Directing that current rates on grain and grain products to Pacific coast ports for export be reduced uniformly 10% not later than Oct. 22, 1923. This order, and the judgment on which it was based, were given in full in Canadian Railway and Marine World for November.

34,241. Sept. 28.—Authorizing Canadian National Rys. to enter H. Cairns and J. P. Stinson's lands to remove obstructions to view at crossing of William St., Cobourg, Ont.

34,242. Sept. 26.—Authorizing Canadian National Rys. to open for traffic, its second main line between Twin City and Kakabeka Falls, Ont., 10.31 miles.

34,243. Sept. 26.—Declaring that for the present, Brantford & Hamilton Electric Ry. crossing near Ancaster, Ont., is protected to Board's satisfaction.

34,244. Sept. 28.—Ordering Canadian National Rys. to maintain speed limitation of 10 miles an hour over Old Toll Road crossing near Brantford, Ont.

34,245. Sept. 27.—Ordering that all switching movements over crossing of St. Dominique St., Jonquiere, Que., by Canadian National Rys. be flagged across by train and switching crews.

34,246. Sept. 28.—Declaring that for the present, C.P.R. crossing near Colborne station, Ont., is protected to Board's satisfaction.

34,247. Sept. 26.—Approving location of Nipissing Central Ry. station at Kirkland Lake, Ont.

34,248. Sept. 28.—Approving location of Canadian National Rys. freight and passenger shelter at Abbott, Sask.

34,249. Sept. 26.—Authorizing British Columbia Public Works Department to build highway crossing over C.P.R. at mile 1.076 west of Kamloops.

34,250. Sept. 29.—Refusing application of Canadian Starch Co., Island No. 2, Fort William, Ont., for an order authorizing the use of the spur into their property by the Canadian National Rys., the applicant's factory and dock being now served by connection from C.P.R.

34,251. Sept. 25.—Declaring that for the present the crossing of Beach Road, about 6 miles from Hamilton, Ont., by Hamilton Radial Electric Ry. is protected to the Board's satisfaction.

34,252. Oct. 2.—Authorizing Canadian National Rys. to open for traffic line between Lintlaw and Kelvington, Sask., mile 100.3 to 114.1, Preceville Subdivision.

34,253. Oct. 1.—Declaring that for the present the crossing of Talbot Road, Maidstone, Ont., by Windsor, Essex & Lake Shore Rapid Ry. is protected to the Board's satisfaction.

34,254. Oct. 1.—Authorizing C.P.R. to build spur for John Sloan & Co. across Bridgeman Ave., Toronto.

34,255. Oct. 2.—Authorizing reconstruction of viaduct on Galt St., Sherbrooke, Que., on the C.P.R.

34,256. Oct. 4.—Authorizing Canadian National Rys. to build additional track across public road in Lot 12, Con. 2, Thurlow Tp., Hastings County, Ont.

34,257. Oct. 3.—Amending order 34,220, Sept. 25, 1923, approving proposed location of Inter-provincial & James Bay Ry. station at Angliers, by correcting mileage to read 69.02, instead of 69.05.

34,258. Oct. 3.—Authorizing C.P.R. to build its Tuffnell-Prince Albert Branch across Canadian National Rys. Humboldt Section in Sec. 21, Tp. 34, Range 13, West 2nd Meridian, Sask.

34,259. Oct. 3.—Approving location of proposed C.P.R. station at Wadena, Sask.

34,260. Oct. 4.—Authorizing Nipissing Central Ry. to build bridge across Amikougami Creek, on its Swastika-Wendigo Lake extension.

34,261. Oct. 4.—Authorizing Canadian National Rys. to build passing track across public road between Lots 24 and 25, Concession 3, Seymour Tp., Northumberland County, Ont.

34,262. Oct. 3.—Amending order 34,226, Sept. 25, 1923, authorizing Winnipeg Electric Ry. to cross C.P.R. tracks on Academy Road, Winnipeg, by providing that Winnipeg Electric Ry. pay the whole cost of half-interlocking plant to be installed.

34,263. Oct. 4.—Declaring that for the present the crossing of Parent Road, Ford City, Ont., by Canadian National Rys., is protected to the Board's satisfaction.

34,264. Oct. 3.—Amending order 31,813, Nov. 24, 1921, by removing speed limitation of 12 miles an hour imposed thereunder in operation of trains over the portion of the Canadian National Rys. Melfort Northerly Branch from a junction with its railway near Melfort, to Ridgedale, Sask., mile 0 to 23.7.

34,265. Oct. 4.—Authorizing Niagara, St. Catharines & Toronto Ry. to build spur into Crawford & Marty's premises, south of Lowell Ave., St. Catharines, Ont.

34,266. Oct. 3.—Declaring that for the present the Canadian National Rys. crossing of highway 10 poles east of mile post 460, just east of Duro, Sask., is protected to the Board's satisfaction.

34,267. Oct. 4.—Declaring that for the present the first crossing west of Burlington, Ont., over the Canadian National Rys. is protected to the Board's satisfaction.

34,268. Oct. 4.—Declaring that for the present the first crossing west of Oakville, Ont., on the Canadian National Rys. is protected to the Board's satisfaction.

34,269. Oct. 5.—Amending order 34,229, Sept. 25, 1923, authorizing Winnipeg Electric Ry. to cross Canadian National Rys. on Academy Road, Winnipeg, by providing that Winnipeg Electric pay the whole cost of half-interlocking plant to be installed.

34,270. Oct. 5.—Amending order 34,227, Sept. 25, 1923, authorizing Winnipeg Electric Ry. to cross Midland Ry. on Academy Road, Winnipeg, by providing that Winnipeg Electric Ry. pay whole cost of half-interlocking plant to be installed.

34,271. Oct. 5.—Refusing National Dairy Council of Canada's application for an order requiring that ice cream mix and bulk evaporated milk be carried by express under commodity cream tariffs.

34,272. Oct. 5.—Relieving Canadian National Rys. from fencing between certain mileages in North Parkdale, Newmarket, and Barrie, Ont.

34,273. Oct. 4.—Authorizing Canadian National Rys. to open for traffic the connection of its line with Canadian Northern Ontario Ry. near Nipissing Junction, Ont.

34,274. Oct. 4.—Authorizing Canadian National Rys. to connect their line with Canadian Northern Ontario Ry. near Nipissing Jct., Ont.

34,275. Oct. 4.—Approving location of portion of C.P.R. Tuffnell-Prince Albert Branch from mile 94.26 to mile 211.14, and authorizing a number of highway crossings on it.

34,276. Oct. 5.—Approving location of Canadian National Rys. station at Longlac, Ont.

34,277. Oct. 5.—Authorizing Canadian National Rys. to open for traffic second track of its main line between miles 2.74 and 6.10, Kashabowie Subdivision, Port Arthur Division, Ont.

34,278. Oct. 5.—Declaring that for the present the crossing of St. Pierre Road just east of St. Constant station, Que., by C.P.R., is protected to the Board's satisfaction.

34,279. Oct. 8.—Authorizing C.P.R. to build spur for Hudson Ice Co., Hudson, P.Q.

34,280. Oct. 5.—Authorizing Canadian National Rys. to build spur for Ford Motor Co. of Canada, across Sandwich St., Ford City, Ont.

34,281. Oct. 5.—Dismissing application of Plunkett & Savage, Calgary, and Scott National, Ltd., Medicine Hat, Alta., with regard to express rates on fresh vegetables from points of production in British Columbia and Alberta.

34,282. Oct. 5.—Authorizing C.P.R. to operate its trains over crossing of Guelph Radial Ry. at mile 32, without first coming to a stop.

34,283. Oct. 5.—Granting permission to Canadian National and Canadian Pacific Rys. to issue free transportation to Right Hon. David Lloyd George, M.P., members of his family, dependent members of his household, and members of his staff, between such places in Canada as are included in his itinerary.

34,284. Oct. 9.—Approving supplement to connecting agreement between Bell Telephone Co. and Korah Base Line Telegraph Co.

34,285. Oct. 9.—Authorizing Canadian National Rys. to build siding across road allowance between Secs. 5 and 6, Tp. 49, Range 26, West of 3rd Meridian, Sask.

34,286. Oct. 9.—Authorizing C.P.R. to build spur to serve Backus-Brooks Co., Kenora, Ont.

34,287. Oct. 9.—Approving revised location of portion of C.P.R. Tuffnell to Prince Albert Branch from mile 91.82 to 95.80, and to cross a number of highways.

34,288. Oct. 9.—Approving location of C.P.R. new standard no. 6 station at St. Joachim, Ont.

34,289. Oct. 9.—Requiring Canadian National Rys. to improve view and grade of approaches at crossing 1½ miles south of Varney, Ont.

34,290. Oct. 9.—Authorizing Winnipeg Electric Ry. to build its tracks at Midland Ry. tracks on Notre Dame Ave., Winnipeg.

34,291. Oct. 9.—Amending order 27,489, July 25, 1918, authorizing C.P.R. and Hull Electric Co. to operate over crossing of their railways at St. Hyacinthe St., Hull, Que., by adding that signals will be operated by switchmen, at expense of Hull Electric Co., in addition to conductor.

34,292. Oct. 10.—Authorizing Canadian National Rys. to open for traffic the Rowan revision of its line from Conmee Jct., mile 36.56 to old mile 38.42, Kashabowie Subdivision, Port Arthur Division, Ont.

34,293. Oct. 10.—Authorizing Canadian National Rys. to build siding for Hachmeister-Lind Chemical Co., Sarnia, Ont., across South Vidal St.

34,294. Oct. 10.—Rescinding order 34,159, Sept. 10, 1923, authorizing Midland Ry. of Manitoba to join its tracks with Canadian National Rys. tracks in Parish Lot 55, St. Boniface.

34,295. Oct. 9.—Approving connecting agreement between Bell Telephone Co. and Champlain Point Telephone Co., Ltd.

34,296. Oct. 9.—Authorizing Vancouver, B.C.,

Harbor Commissioners to open for freight traffic, temporarily, the portion of their terminal railway between the Dominion Government elevator and Ballantyne pier.

34,297. Oct. 11.—Approving Vancouver Harbor Commissioners' Standard Mileage Tariff C.R.C. 1.

34,298. Oct. 11.—Approving Vancouver Harbor Commissioners' bylaw authorizing W. D. Harvie to prepare and issue tariffs covering all freight traffic carried by their terminal railway.

34,299. Oct. 10.—Authorizing Alberta Public Works Department, on behalf of Excelsior Municipal District no. 92, to build highway crossing over C.P.R. between Secs. 9 and 10, Tp. 12, Range 4, West 4th Meridian, Alta.

34,300. Oct. 9.—Approving service station agreement between Bell Telephone Co. and Strong Municipal Telephone System.

34,301. Oct. 10.—Authorizing Canadian National Rys. to build a Y in s.e. ¼ of Sec. 35, Tp. 47, Range 20, West of 5th Meridian, and n.e. ¼ Sec. 26, Tp. 47, Range 20, West of 5th Meridian, Coal Branch, Alta.

34,302. Oct. 11.—Authorizing Saskatchewan Highways Department to build highway crossing over C.P.R. on production of Myrina St., Amazon, Sask.

34,303. Oct. 11.—Authorizing Canadian National Rys. to build its tracks across north and south road allowance between Secs. 14 and 15, Tp. 42, Range 25, West of 3rd Meridian, at Wintar, Sask.

34,304. Oct. 12.—Declaring that for the present the Canadian National Rys. crossing east of Cardinal, Man., is protected to the Board's satisfaction.

34,305. Oct. 10.—Approving service station agreements between Bell Telephone Co. and Ramara Telephone Co.

34,306. Oct. 11.—Approving service station agreement between Bell Telephone Co. and Tenth Concession, Alice & Fraser Telephone Co. Ltd.

34,307. Oct. 11.—Approving Supplement 1 to connecting agreement between Bell Telephone Co. and Canadian Telephone Co.

34,308. Oct. 9.—Authorizing Hamilton Radial Electric Ry. for purpose of removing obstructions to view at crossing between Lots 30 and 31, Con. 3, Trafalgar Tp., Ont., to enter upon Mr. Biggs' lands and remove trees.

34,309. Oct. 13.—Declaring that for the present the Canadian National Rys. crossing just east of Lynden station, Ont., is protected to the Board's satisfaction.

34,310. Oct. 13.—Declaring that for the present the C.P.R. crossing at mile 8 between Britannia and Westboro, Ont., is protected to the Board's satisfaction.

34,311. Oct. 15.—Approving location of C.P.R. standard A-3 station at Tisdale, Sask.

34,312. Oct. 15.—Refusing Rural Municipality of Morris, Man., application for an order directing the C.P.R. to build a highway crossing over its railway at Sewell, Man.

34,313. Oct. 10.—Authorizing City of Fort William, Ont., to electrify Canadian National Rys. track on James St., between Frederica and Montreal Sts., to connect its tracks with Canadian National Rys. at Frederica and Montreal Sts., and to operate over said tracks.

34,314. Oct. 15.—Authorizing Dominion Atlantic to construct spur to serve the Berwick Fruit Co., Ltd., across Foster St., Berwick, N.S.

34,315. Oct. 15.—Authorizing Canadian National Rys. to use and operate bridge over west channel of Moira River (Stoco Lake), mile 32.9 from Yarker, Ont.

34,316. Oct. 15.—Authorizing Canadian National Rys. to extend additional track across east and west road allowance between Secs. 30 and 31, Tp. 22, Range 6, West 2nd Meridian, Sask.

34,317. Oct. 15.—Authorizing C.P.R. to revise trackage at Saskatchewan Co-operative Elevator Co.'s elevator terminal plant, Port Arthur, Ont.

34,318. Oct. 18.—Authorizing Canadian National Rys. to use and operate bridge over Little Madawaska River, Deacon Tp., Nipissing, Ont.

34,319. Oct. 18.—Extending for 2 months from Oct. 18 time within which Edmonton, Dunvegan & B.C. Ry. may complete fencing both sides of right of way from mile 85.6 to 90.8, and from 92.3 to 94.

34,320. Oct. 18.—Declaring that for the present Canadian National Rys. crossing 2 miles east of Scarboro Junction, Ont., is protected to the Board's satisfaction.

34,321. Oct. 18.—Approving service station agreement between Bell Telephone Co. and le Service d'Amelioration, Laprairie, Que.

34,322. Oct. 16.—Authorizing Canadian National Rys. to build second track across east and west road allowance between Secs. 4 and 9, Tp. 26, Range 28, West P. Meridian, at Roblin, Man.

34,323. Oct. 15.—Declaring that for the present C.P.R. crossing west of Castleford station, Ont., is protected to the Board's satisfaction.

34,324. Oct. 15.—Dismissing application of A. J. Farquharson, Fernie, B.C., re service furnished and rates charged on logs by Great Northern and Canadian Pacific Rys. from Fernie to Calgary, Alta.

34,325. Oct. 19.—Authorizing Canadian National Rys. to build extension to passing track east of Uptergrove station, Ont.

34,326. Oct. 19.—Authorizing Canadian National Rys. to use bridge over East Moira River (Stoco Lake), Hungerford Tp., Hastings County, Ont.

34,327. Oct. 19.—Authorizing C.P.R. to open for traffic portion of its Leader-Southeasterly Branch from mile 0 to 25.31, Sask.

34,328. Oct. 19.—Approving location and details of Canadian National Rys. proposed station at Atikokan, Ont.

34,329. Oct. 19.—Authorizing Canadian National Rys. to use bridge over farm road at mile 17.13, Pembroke Subdivision, March Tp., Ont.

34,330. Oct. 19.—Approving location of Canadian National Rys. proposed freight station at junction of Alma and Jonquiere Ry. with C.N.R. at mile 199.6, Jonquiere Subdivision, Que.

34,331. Oct. 18.—Authorizing Canadian National Rys. to divert highway in vicinity Lot 4, Concession 11, Tay Tp., Ont.

34,332. Oct. 19.—Authorizing C.P.R. to build its Tuffnell to Prince Albert Branch across highways at mile 23.69, 23.86 and 24.58, at grade.

34,333. Oct. 19.—Approving service station agreement between Bell Telephone Co. and West Tay Municipal Telephone System.

34,334. Oct. 19.—Authorizing Nipissing Central Ry. to build bridge over Blanche River at mile 19.5, Swastika-Wendigo Lake extension, Ont.

34,335. Oct. 20.—Authorizing Carswell Construction Co. to cross temporarily with its tracks the Canadian National Rys. tracks at Lacolle, Que.

34,336. Oct. 19.—Authorizing C.P.R. to build spur for City of Montreal in St. Elizabeth Parish, Que.

34,337. Oct. 20.—Approving supplement to connecting agreement between Bell Telephone Co. and Elgin-Chaffey's Locks Telephone Co.

34,338. Oct. 20.—Authorizing C.P.R. to rebuild bridge 78.46 over Middle Shikitihaik River, Shogomoc Subdivision, N.B.

34,339. Oct. 22.—Authorizing C.P.R. to rebuild bridge 27.4, St. Stephen Subdivision, N.B.

34,340. Oct. 20.—Declaring that for the present the second crossing west of canal drawbridge, Port Colborne, Ont., over Canadian National Rys. is protected to the Board's satisfaction.

34,341. Oct. 20.—Suspending, pending hearing, Michigan Central Rd. Supplement 69 to Tariff C.R.C. 3074, effective Nov. 3, 1923, in so far as it relates to rates on gypsum rock.

34,342. Oct. 20.—Authorizing C.P.R. to build its Tuffnell to Prince Albert Branch across road allowance between Secs. 30 and 31, Tp. 32, Range 11, West 2nd Meridian, mile 14.12, Sask.

34,343. Oct. 20.—Authorizing Canadian National Rys. to use bridge over McCarthy Creek, Gibbons Tp., Nipissing, Ont.

34,344. Oct. 22.—Approving C.P.R. Standard Freight Tariff C.R.C. no. E-4087.

34,345. Oct. 22.—Refusing application of Queen's University, Kingston, Ont., for an order extending to it and to the City of Kingston the same privileges in the matter of excursion rates on railways in connection with annual football games, as are enjoyed by Toronto, Montreal and other large cities.

34,346. Oct. 23.—Authorizing Canadian National Rys. to use bridge across Laronde River, mile 74.7, Alderdale Subdivision, Ont.

34,347. Oct. 23.—Declaring that for the present the Canadian National Rys. crossing of Talbot Road, east of Canfield station, Ont., is protected to the Board's satisfaction.

34,348. Oct. 22.—Authorizing Canadian National Rys. to use and operate bridge over Indian River, mile 82.41, Beachburg Subdivision, Stafford, Renfrew County, Ont.

34,349. Oct. 20.—Approving supplement 2 to connecting agreement between Bell Telephone Co. and South Crosby Rural Telephone Co.

34,350. Oct. 20.—Approving supplement 1 to connecting agreement between Bell Telephone Co. and Lanark & Renfrew Telephone Co.

34,351. Oct. 22.—Authorizing Canadian National Rys., for purpose of removing obstructions to view at crossing at easterly limits of Delhi, Ont., to enter G. Jenkins' lands.

34,352. Oct. 24.—Approving Eastern Telephone & Telegraph Co.'s Tariff C.R.C. No. 2, showing schedule of long distance rates.

34,353. Oct. 23.—Amending order 31,838, Nov. 28, 1921, re opening for traffic Canadian National Rys. Turtletford to St. Walburg line, from mile 57 to 77.8, by providing that speed of trains shall not exceed 12 miles an hour.

34,354. Oct. 23.—Authorizing Canadian National Rys. to build temporary siding or spur along and across Tecumseh Road, Tecumseh, Ont.

34,355. Oct. 23.—Amending order 32,966, Oct. 13, 1922, re opening for traffic Canadian National Rys. line from Gravelburg, Sask., mile 79 to 109, by providing that speed of trains shall not exceed 15 miles an hour.

34,356. Oct. 24.—Declaring that for the present, the first public crossing east of Weston, Ont., over the Canadian National Rys., is protected to the Board's satisfaction.

34,357. Oct. 24.—Relieving Michigan Central Rd. from maintaining cattle guards at crossing of Park Avenue, Yarmouth Tp., Ont.

34,358. Oct. 24.—Declaring that for the present, Lake Erie & Northern Ry. crossing of Dundurn Road, at mile 34.41, is protected to the Board's satisfaction.

34,359. Oct. 25.—Amending order 34,227, Sept. 25, 1923, authorizing Winnipeg Electric Ry. to

cross Midland Ry. tracks on Academy Road, Winnipeg, by adding the following condition: "and subject to and upon the terms and conditions contained in the Midland Ry. Co's consent, dated Sept. 6, 1923, filed."

34,360. Oct. 25.—Authorizing C.P.R. to replace 60 ft. half deck plate girder span by standard 60 ft. half deck plate girder span at bridge over Salmon River, mile 65.0, Shuswap Subdivision, B.C.

34,361. Oct. 25.—Authorizing C.P.R. to replace 100 ft. through pony truss span by a 100 ft. through plate girder span at bridge over north fork of Eagle River, mile 26.5, Shuswap Subdivision, B.C.

34,362. Oct. 25.—Authorizing C.P.R. to replace 150 ft. through truss span by a heavier span of similar size and type in bridge at 7th crossing of Eagle River, mile 40.61, Shuswap Subdivision, B.C.

34,363. Oct. 25.—Authorizing C.P.R. to replace 150 ft. through truss span by a heavier span of similar type and size in bridge 37.26, Shuswap Subdivision, B.C.

34,364. Oct. 25.—Authorizing C.P.R. to build extensions to industrial spurs along Water St. and across James St., Pembroke, Ont., for Pembroke Lumber Co.

34,365. Oct. 26.—Authorizing C.P.R. to open for carriage of traffic portion of Moose Jaw Southwesterly Branch, mile 207.34 to 268.57.

34,366. Oct. 25.—Approving service station agreement between Bell Telephone Co. and W. R. Caldwell, Carleton Place, Ont.

34,367. Oct. 26.—Authorizing C.P.R. to build its Tuffnell-Prince Albert Branch across Canadian National Rys., near Tisdale, Sask.

34,368. Oct. 26.—Authorizing C.P.R. to build extension to siding for L. S. Bertrand, Pembroke, Ont.

34,369. Oct. 27.—Approving service station contract between Bell Telephone Co. and Papineau d'Abbottford Telephone Association.

34,370. Oct. 27.—Approving supplement 1 to connecting agreement between Bell Telephone Co. and Mutual Telephone Co., Limited.

34,371. Oct. 27.—Approving supplement 2 to connecting agreement between Bell Telephone Co. and Tuckersmith Township, Ont.

34,372. Oct. 26.—Declaring that for the present, Canadian National Rys. crossing, 1½ miles south of Varney, Ont., is protected to the Board's satisfaction.

34,373. Oct. 27.—Amending order 34,299, Oct. 10, 1923, authorizing Alberta Public Works Department to build highway crossing over C.P.R. at mile 135.8, Maple Grove Subdivision, by changing the words "Maple Grove" to "Maple Creek."

34,374. Oct. 27.—Declaring that express commodity rates on cream are not applicable to homogenized cream.

34,375. Oct. 27.—Declaring that for the present, Canadian National Rys. crossing just east of mile 46, Pembroke Subdivision (Palmer's crossing) is protected to Board's satisfaction.

34,376. Oct. 27.—Approving agreement between Bell Telephone Co. and A. G. McKenzie, Coldstream Telephone System.

34,377. Oct. 27.—Approving supplement 1 to connecting agreement between Bell Telephone Co. and Pine Grove Telephone Association.

34,378. Oct. 29.—Declaring that for the present, C.P.R. crossing just east of Puslinch station, Ont., is protected to Board's satisfaction.

34,379. Oct. 29.—Declaring that for the present, Canadian National Rys. crossing at Varney station, Ont., is protected to Board's satisfaction.

34,380. Oct. 27.—Declaring that for the present, C.P.R. crossing, third east of Senlac station, Sask., is protected to Board's satisfaction.

34,381. Oct. 29.—Authorizing British Columbia Public Works Department to build highway crossing over Canadian National Rys., near Smithers, B.C.

34,382. Oct. 29.—Authorizing Canadian National Rys. to open for traffic the portion of its railway between mile 6.1 and 7.1, Kashabowie Subdivision.

34,383. Oct. 29.—Authorizing C.P.R. to build highway crossing between Lots 139 and 140, Crescent Road, St. Vital Municipality, Man.

34,384. Oct. 30.—Declaring that for the present the Canadian National Rys. crossing at Ingersoll Ave., North Woodstock, Ont., is protected to Board's satisfaction.

34,385. Oct. 30.—Authorizing C.P.R. to divert highway on north boundary of n.e. ¼ Sec. 29, Tp. 2, Range 16, West 1st Meridian, Man.

34,386. Oct. 30.—Directing that, pending installation of half-interlocker, Winnipeg Electric Ry. is authorized to operate its trains over crossing of C.P.R. (Lariviere Branch) on Notre Dame Ave., Winnipeg, provided cars are flagged over crossing.

34,387. Oct. 30.—Authorizing Winnipeg Electric Ry. to operate cars over crossing of C.P.R. on Notre Dame Ave., Winnipeg, pending installation of half-interlocker.

34,388. Oct. 30.—Authorizing C.P.R. to build ballast pit spur across road allowance between Sec. 6, Tp. 24, and Sec. 31, Tp. 23, Range 5, West 3rd Meridian, Sask.

34,389. Oct. 30.—Approving Supplement 1 to connecting agreement between Bell Telephone Co. and O'Connell-Rathburn Telephone Co.

34,390. Oct. 30.—Approving Supplement 1 to connecting agreement between Bell Telephone Co. and Maberly Telephone Co.

34,391. Oct. 30.—Approving agreement between Canadian Northern Pacific Ry. and South West-

minster Dyking District, B.C., for purpose of executing certain dyking works.

34,392. Nov. 3.—Declaring that for the present the crossing of Huron St., Newmarket, Ont., over Canadian National Rys., is protected to Board's satisfaction.

34,393. Oct. 31.—Declaring that for the present the first public crossing east of Allenby Jct., Que., over Canadian National Rys. is protected to Board's satisfaction.

34,394. Oct. 31.—Declaring that for the present Canadian National Rys. crossing one mile west of Joliette station, Que., is protected to Board's satisfaction.

34,395. Oct. 31.—Declaring that for the present the C.P.R. crossing at Wellington St., Brampton, Ont., is protected to Board's satisfaction.

34,396. Oct. 30.—Refusing application of residents of Lewvan, Sask., for an order providing for establishment of daily passenger train service, each way, from Weyburn to Regina, on the Canadian National Rys., in place of present service.

34,397. Oct. 31.—Declaring that for the present Canadian National Rys. crossing at Parry Sound, Ont., is protected to Board's satisfaction.

34,398. Oct. 31.—Amending order 33,974, relieving C.P.R. and Canadian National Rys. from maintaining night signalman at crossing at Strathcona, Alta., between 10.30 p.m. and 6.30 a.m., by changing the figures 10.30 p.m. to 6.00 p.m.

34,399. Nov. 2.—Authorizing C.P.R. to build spur for Keenan Bros., Owen Sound, Ont.

34,400. Oct. 31.—Declaring that the rate of 37c per 100 lb. on soda ash from Walkerville to Mille Roches, Ont., was in violation of the long and short haul clauses of the Railway Act.

34,401. Nov. 3.—Amending order 30,864, approving revised location of C.P.R. business spur in Trenton, Ont., and crossing of Canadian National Rys., and authorizing C.P.R. to build inter-switching track north of its main line.

34,402. Nov. 2.—Approving proposed location of Canadian National Rys. shelter at Larouche, Que.

34,403 to 34,405. Nov. 5.—Approving agreements between Bell Telephone Co. and Manilla Union Telephone Co., Lily Creek Telephone Co., and Millbrook Rural Telephone Co., Ltd.

34,406. Nov. 5.—Permitting Canadian National Rys. to issue free transportation to Prime Minister Theodore of Queensland, his wife, secretary, and secretary's wife.

34,407. Nov. 6.—Authorizing Canadian National Rys. to build spur for J. A. Rousseau, St. Boniface, Man.

34,408. Nov. 2.—Authorizing Canadian National Rys. to divert Federal highway at Quinton, Sask.

34,409. Nov. 6.—Authorizing C.P.R. to build spur for Coca Cola Co., St. John Parish, Winnipeg.

34,410. Nov. 6.—Authorizing C.P.R. to build spur for I. Cohen & Co., across Duff and Fraser Sts., Kingston, Ont.

34,411. Nov. 6.—Declaring that for the present Canadian National Rys. crossing of Lorne Ave., Saskatoon, Sask., is protected to Board's satisfaction.

34,412. Nov. 6.—Approving proposed location of C.P.R. no. 9 station building to be erected at L'Epiphanie, Que.

34,413. Nov. 7.—Declaring that for the present C.P.R. crossing of Drew St., Woodstock, Ont., is protected to Board's satisfaction.

34,414. Nov. 8.—Authorizing Grand River Ry. to build combination highway and electric railway bridge over mill race, near Preston, Ont.

34,415. Nov. 8.—Authorizing Grand River Ry. to build combination highway and electric railway bridge over the Speed River, near Preston, Ont.

34,416. Nov. 7.—Authorizing C.P.R. to build spur to serve A. Balogh and A. Fox, in southwest ¼ of Sec. 8, Tp. 29, Range 22, West 4th Meridian, Alta.

34,417. Nov. 7.—Authorizing C.P.R. to build spur for J. G. Hargrave & Co., Winnipeg.

34,418. Nov. 3.—Declaring that for the present Canadian National Rys. crossing west of Winona station, Ont., is protected to Board's satisfaction.

34,419 to 34,425. Nov. 7.—Approving supplements to connecting agreements between Bell Telephone Co. and Sunny Valley Telephone Co., Caradoc-Ekfrid Telephone Co., J. B. Moore and M. Cheaney, Nipissing Private Telephone Line; Tyendinaga Municipal Telephone System; Campbell's Bay Rural Telephone Co.; Coulson-Jarrett Telephone Co., and Spey River Telephone Co.

34,426. Nov. 10.—Extending until June 30, 1924, time within which C.P.R. may complete spur for P. Burns & Co., in the northwest ¼ of Sec. 29, Tp. 23, Range 1, West 5th Meridian, authorized under order 33,011, Oct. 20, 1923.

34,427. Authorizing Ontario Lands and Forests Department to build highway crossing over Canadian National Rys. near Lot 20, Con. 9, Monteith Tp., Parry Sound District, Ont.

34,428. Nov. 13.—Extending until Dec. 3, 1923, time within which Canadian National Rys. may complete installation of wigwag signals at crossing of William St., Cobourg, Ont.

34,429. Nov. 10.—Declaring that for the present Canadian National Rys. crossing at William St., London, Ont., is protected to Board's satisfaction.

34,430. Nov. 14.—Authorizing Quebec Highways Department to divert highway at crossing of Quebec Central Ry. in St. Frederich Parish.

34,431. Nov. 13.—Extending until Aug. 26, 1924, time within which C.P.R. may complete industrial spur for William Davies Co., Toronto.

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TORONTO, CANADA, DECEMBER, 1923.

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Transportation of Alberta Coal to Ontario.

When the transporting of Alberta domestic coal to Ontario was first proposed, Canadian Railway and Marine World expressed the opinion that such transportation would be uneconomical, and that the use of that coal in Ontario is not commercially feasible. On another page of this issue is a paper by M. J. Butler, at one time Deputy Minister of Railways, who apparently believes that Alberta domestic coal can be economically carried to Ontario, provided some \$14,000,000 be spent in the acquisition of special equipment, but his arguments have failed to change our opinions as mentioned above. After reading the paper in Toronto recently, Mr. Butler made some reference to people digging pools of prejudice and wallowing in them. While we do not agree with his conclusions concerning the transportation of Alberta coal, we certainly plead innocent to any charge of being prejudiced. We realize the great desirability of using Canadian coal and of keeping the money in the country, but, in our opinion, it would cost too much to carry Alberta coal to Ontario to make it worth while.

Mr. Butler's assumption that earnings of \$5 a train mile, on 6,300-ton trains, would be profitable to Canadian railways is not reasonable. In Aug. 1923, Canadian railways as a whole had average earnings of \$5.21 a freight train mile, and the average net tonnage of freight trains operated in that month was 404.2 tons. The net tonnage of the trains proposed by Mr. Butler is 4,350 tons. How unreasonable to assume fair earnings for the latter train as \$5 a train mile, when for the average train hauled today it is over \$5! We are acquainted with Prof. Ripley's statements as quoted by Mr. Butler, and also with the passage quoted from Eaton's "Railroad Operation," and realize that there is a lot of truth in them, but to use those statements to attempt to justify the \$5 earnings assumed is, to say the least, misleading. It may be that the cost of operating a freight train does not vary directly, or anywhere near directly, with tonnage, but to assume that earnings of \$5 a train mile for a 4,350 net ton train hauled by a 2-8-8-0 Mallet locomotive would be profitable because such earnings are profitable (or at least prevent the operating ratio exceeding 100%) for a 404 net ton train hauled by an ordinary consolidation or mikado locomotive, is to assume altogether too much.

Our contention is that the costs of operating such a large train would be so much greater than those of operating an average train, that \$5 a train mile would not begin to meet them. It may be safely said that such a heavy train would go into detention frequently, particularly in winter, making for high labor costs. The expenditure for fuel for a Mallet hauling a 4,350 net ton train would be much greater than for a consolidation or mikado hauling a 404 net ton train. The average freight train hauled on Canadian railways in August consisted of 33 cars, 21.8 loads and 11.2 empties, while Mr. Butler's theoretical train would consist of 58 cars, which would make a big difference in equipment maintenance costs. If these costs for each of these cars were the same as for each car in the present day train, equipment maintenance for the train would be correspondingly increased. But these 75-ton cars would be of steel construction, and the rate of deterioration in their steel sheets has been found to be rapid, which would increase equip-

ment maintenance costs more than correspondingly, or else a high rate of depreciation would have to be figured on. The cost of maintaining large 2-8-8-0 Mallet locomotives could not be expected to be as low as for the locomotives now in use. Taking the items of interest and depreciation alone, and comparing the train of Mallet locomotive and 58 steel coal cars to the average trains now operating, it is at once evident how unfair it is to assume that one train should earn only as much as the other.

It would be difficult to determine to just what degree the heavy axle loads proposed would affect the track structure, but it is certain that material increases in maintenance of way expense would result from the operation of the equipment specified. It taxes the ingenuity of roadmasters and section foremen to keep track to line and surface, even with the present equipment, particularly when frost is coming out of the ground and shims are being taken out, and with loaded cars of 107.5 tons pounding the joints in a steady procession, it seems reasonable to believe that a large demand for the services of numerous extra gangs would soon arise. The type of equipment proposed may be entirely suited to 100 lb. steel, on oak ties set in rock ballast, on a subgrade which has been undergoing improvement and solidification for half a century, but it would be a different matter on the long stretches of muskeg over which the coal trains would have to pass. The additional maintenance of way expense would demand earnings of much over \$5 a train mile to make the business profitable. It should not require further argument to demonstrate that earnings of \$5 a train mile for the trains proposed would be entirely inadequate.

We also think that Mr. Butler is assuming too much when he talks about an average daily movement of 275 miles for his locomotives and cars. The American Railway Association tried for several months last summer to increase average daily car mileage to 30, but was unable to accomplish its object. Of course, Mr. Butler's idea is to handle his coal carrying equipment in a straight run from Alberta to some Ontario point, presumably Toronto, and right back again, and thus cut out all the terminal delay which is the greatest factor in keeping down daily car mileage. But for the reason that the tonnage ratings vary materially on every division of a transcontinental road, the proposed scheme of straight trainload handling from mines to consuming point is impracticable, and a lot of setting out, picking up and switching would be necessary. A 275-mile daily movement may not sound large, but from what we know of railway conditions in Canada, and particularly in that portion of it lying north of Lake Superior, the schedule proposed by Mr. Butler for his equipment movement appears extremely visionary. While reading his paper, Mr. Butler referred to Henderson's "Cost of Locomotive Operation," and stated that it had been developed in that book that 15 m.p.h. is the most economical speed and, in addition, is the speed at which the most transportation can be turned out. We are well acquainted with that book, and wish to point out that in an example given therein, 15 m.p.h. was determined as the best speed, for a given set of conditions, but it is possible that for the conditions proposed in connection with this coal movement, 15 m.p.h. would be the most uneconomical speed.

Even if the equipment could be given the main line movement proposed, it must be borne in mind that the coal transported would not all be used at one point in Ontario. The question would then be whether to use the same cars to distribute the coal to hundreds of towns and villages throughout the province, or to trans-ship it at a central point for further distribution. If the big coal cars were used, it would probably take as long to get them back to the central point as it would to bring them from Alberta, and if the coal was trans-shipped and distributed in other cars, the cost would be prohibitive. We presume that all shipments from Alberta would not come from the one mine, or even one mining district, which would mean that the equipment would have to be distributed at that end of the run, and there is no doubt that the time required for the distribution and collection of cars in the mining country would be considerable. The effect of the delays indicated would be that the proposed expenditure for equipment would have to be at least doubled, which would mean that much more interest and depreciation chargeable against the coal traffic.

There is grave doubt as to the ability of Alberta domestic coal to stand the trip east in open top equipment. As stated in Canadian Railway and Marine World for September, H. Stutchbury, Trade Commissioner for Alberta, when before the House of Commons Committee investigating the fuel question, said: "It would not be possible to ship many of our coals, which are quite suitable for this market, to Ontario in open cars. We could not use the big U.S. gondolas."

As pointed out by S. B. Wass, Resident Engineer, Toronto Eastern Ry., in the discussion following the reading of Mr. Butler's paper, the locomotive terminal facilities, notably locomotive houses and turntables, on Canadian transcontinental roads, are not suitable for handling the large Mallet locomotives proposed.

Mr. Butler's reference to the possibility of reducing the cost of hauling Alberta coal by adding a few cars of revenue freight to the westbound empties is misleading. The situation is that the preponderance of transcontinental traffic is eastbound, and that the railways are always short of freight to fill up the empties for westbound movement, so that no economy is possible in the direction indicated.

Mr. Butler's statement that "the rates quoted by the Traffic Manager of the Canadian National Rys., Mr. Dalrymple, are prohibitory, and evidently were made with the purpose of prohibiting bringing Alberta coal to Ontario points," seems entirely unjustified. Mr. Butler, in making that statement, indirectly accuses Mr. Dalrymple of discouraging the growth of traffic and intentionally standing in the way of the country's development. We think that Mr. Dalrymple was entirely justified in naming a rate which would be remunerative, and that in so doing he was only carrying out his duty of participating in the operation of the National railways as a business proposition and not as a convenience for certain business interests. He would be as much justified in putting in less-than-cost rates for every commodity handled as he would be in putting in such a rate for Alberta coal.

On the whole, while we admire the interest which Mr. Butler has taken in this matter, and give him every credit for attempting to work out a method by which Canadian industry may be devel-

oped, we are certain that in the present stage in the development of the science of railroading his proposed efforts to apply the operating conditions and methods of the Virginian Ry. to Canadian transcontinental hauls would meet with failure, and that while his scheme may seem theoretically possible under the ideal conditions assumed, it would certainly not work out in practice.

The Inland Water Freight Rates Act, 1923, Should be Repealed.

In our November issue, and elsewhere in this issue, we have described the manner in which the Dominion Government, after staging a remarkable exhibition of how not to practice the science of Government, and after having placed Parliament and itself in perhaps the most humiliating position ever occupied by either in the annals of responsible government in Canada, has finally succeeded in rescuing the western farmers from the position in which it placed them, by devising a method by which foreign commercial interests can evade a Canadian law. The bonds of indemnity given, to protect U.S. ship owners who have been invited to freely violate the spirit of the Inland Water Freight Rates Act, 1923, form the concluding chapter of what is, perhaps, the most outstanding exhibition of blind, uninformed, bungling action in the annals of civil government. It must indeed come as a blow to the pride of all Canadians who think anything of their country, to realize that the men they elected to govern them have been responsible for sending representatives to a foreign country, to try to induce private citizens of that country to enter Canadian commerce and to violate a Canadian statute, and to confer with those private citizens as to how they could be best protected in that violation. Nevertheless, that is the case, and the past cannot be recalled. But it is to be hoped that the future will never see the repetition of such an incident—as regrettable as it was outrageous.

As pointed out in previous issues of Canadian Railway and Marine World, the Inland Water Freight Rates Act, 1923, was wholly ill-conceived legislation, and an error from the start. We have pointed out in detail just why the legislation was ill-conceived. We will not go into detail here, but will confine ourselves to stating the general principle that government measures cannot improve on full and free competition as a regulator of those branches of commerce in which competition is naturally the controlling factor, and to further stating that the events of the past two months in connection with the Inland Water Freight Rates Act amply establish the accuracy of our contention.

If any member of Parliament is at all hazy as to the fundamental laws of economics, particularly as concerns their relationship to government regulation of industry, and if any member of Parliament be in doubt as to the consensus of public opinion, which is generally right, concerning the advisability of attempting to regulate lake shipping, let him hark back to the numerous attempts to pass the Armstrong bill. For the seventh time, attempts were made to pass this bill when it appeared as no. 54 of the 1921 Parliament, but this attempt was no more successful than those made previously, for the simple reason that thought and discussion had definitely established that the measure would be

subversive of the fundamental principle governing the shipping industry, and that it would work infinitely more harm than good. If any member of Parliament has any doubt as to the consensus of public opinion in the United States concerning government regulation of the shipping industry, let him regard the U.S. law, which states: "Nor shall the (Interstate Commerce) Commission have the right to establish any route, classification, rate, fare or charge, when the transportation is wholly by water. . . ." If any member of Parliament be in doubt as to the Inland Water Freight Rates Act's injurious effects on the interests of the farmers and the grain trade, let him compare the rates existing before the Government found a way to allow the U.S. ship owners to evade the law, with those existing after that way had been found. And if any member be sincerely desirous of restoring to Parliament the prestige and respect of which the Government's action has tended to rob it, and if he be desirous of seeing that Canada receives efficient government, let him, at the beginning of the next session, advocate the immediate repeal of the Inland Water Freight Rates Act, 1923, and the restoring of the Great Lakes shipping industry to a basis of free and open competition, where it belongs.

Another Political Interferer Not Wanted.

In connection with a recent rumor that Hon. F. B. McCurdy, of Halifax, ex-Dominion Minister of Public Works, would be a Conservative candidate at one of the bye elections in Nova Scotia, it is gratifying to know that so far he has not been nominated, and Canadian Railway and Marine World hopes that he will not be. He is too strong a believer in the spoils belonging to the victors, and, soon after his entry into a former Dominion Government, began attempting to interfere in regard to appointments on the Canadian Government Rys. and the management of the Canadian Government Merchant Marine, representing on the Conservative side the views that Hon. E. M. Macdonald, of Pictou, N.S., does on the Liberal side.

"All Go by National."

The above was the heading of what was undoubtedly a paid "reader" which appeared in a Toronto daily newspaper recently, boosting the Canadian National Rys.' Montreal-Toronto-Vancouver route. When there is so much to be said truthfully about that route, why make such a silly statement? Surely the writer of it could not have imagined that people would believe that the Canadian Pacific had ceased to do a transcontinental passenger business, and that its passenger officials were in the position of having to say, "Yes, we have no" passengers "this morning."

Railway Valuation and Rate Making.

The contention that the many millions of dollars spent by the United States in valuing its privately-owned railways, chiefly for rate making purposes, has been a waste of money, may be regarded as incorrect. Analysis of the whole matter, however, shows that any valuations made will have a most doubtful value as a basis for rates, and the question naturally arises: If railway valuation is necessary for rate making, how is it that the Interstate Commerce Commission, like the Board of Railway Commissioners for Canada, has been able to determine the reasonableness of railway rates throughout the last 20 years?

The Railways' Alternative Plan for Toronto Grade Separation.

The question of railway grade separation along Toronto's waterfront has been prominent for many years. In June, 1909, the Board of Railway Commissioners passed order 7,200, for the construction of a viaduct from west of John St. to or near Berkeley St., a 4-track structure, to be built jointly by the C.P.R. and the G.T.R. In addition, the C.P.R. was ordered to elevate, independently, its tracks from the easterly end of the proposed viaduct, to Queen St., and the G.T.R. was ordered to elevate its tracks from the same point, to Logan Ave. The city was ordered, in addition to paying one-third the cost of the viaducts, to pay the same proportion of the expense of elevating the C.P.R. passenger car yard, the G.T.R. Don sorting yard, the bridges at Spadina Ave. and John St., in the west, and at Eastern Ave., in the east, and for the substructure of the new union station. The railways, to determine the Board's jurisdiction and power to issue such an order, took the matter to the courts, the final judgment being that the Board was within its jurisdiction and that the order stand. After further negotiation between the city and the railways, and the Toronto Harbor Commission, which was formed to administer the city's waterfront property, it was decided that a 4-track structure would not be sufficient for the traffic, and a 6-track one was decided on. The Board issued order 16,019, Feb. 22, 1912, embodying the change, and on July 18, 1912, it issued order 17,034, calling for immediate beginning of construction.

Construction, however, was not started, and on July 29, 1913, after further conferences among the interested parties, an agreement was arrived at, and an entirely new set of plans was prepared. The Board was applied to for an order to give effect to the agreement and to authorize the construction of the track elevation proposed. As all parties were agreed, the Board passed order 19,926, July 31, 1913, accordingly. By this July, 1913, agreement, there was to be no change in conditions west of Bathurst St. At Bathurst St. the tracks were to commence to ascend on a 4/10% gradient, and to reach the viaduct level at York St., from where easterly to the Don River the line was to be level, the elevated base of rail to be 18 ft. above the then base of rail. To the immediate north of the tracks, between Spadina Ave. and York St., the plans provided for an elevated passenger car yard, of 12 tracks, approached by a ladder track from each end. The Spadina Ave. bridge was to be raised 5 ft., and to be lengthened from 700 to 770 ft., and the John St. bridge was to be raised 11 ft. At John St., between the through tracks and the G.T.R. passenger car yard, the station tracks were to lead off in a double ladder, provision being made for 10 passenger and 2 freight tracks through the station. At John St., leads to the C.P.R. passenger and freight car yard, at viaduct level, were to lead off to the south. York St. was to be carried under the tracks in a long subway. There were to be 7 tracks on the viaduct from Bathurst St. to the passenger car yard at York St., and 4 through tracks south of the new station. Bay St. was to be carried under the easterly end of the station tracks, and the through tracks, by a subway. From Bay St. the station tracks were to converge through double ladders to the northerly of the through tracks at Church St. The only portion of the viaduct to

be built with concrete retaining walls was to be between Yonge and Scott Sts., the rest to be all earth embankment. From the new station east there were to be 6 through tracks, crossing all streets on viaducts. From the station east, the tracks were to swing south of the present main tracks, on land to be reclaimed by the Harbor Commissioners, with a right of way 230 ft. wide, giving an embankment width at the top of 85 ft. At Cherry St. the G.T.R. right of way was to be again struck, the through tracks following the south side of the former right of way, with a new Don exit for the C.P.R. line provided, the two lines continuing together to near the Don River, and the C.P.R. branching north along the west bank there. This C.P.R. line was to commence to descend at Cherry St., on a 0.44% grade. The Queen St. bridge was to remain, and an overhead bridge was to be provided at Eastern Ave. The G.T.R. tracks, from the point where the C.P.R. tracks left them, were to continue across the Don River, on a 120 ft. double girder slab floor bridge, swing to the north as far as Queen St. through a 40% deg. angle on a 1 deg. curve, thence follow a short tangent to a reverse curve, ascend from the Don on a 0.4% grade to Queen St., and run level to Logan Ave., where the former grade would be again reached. Both Eastern Ave. and Queen St. were to be carried under the tracks. An estimate made in 1913, placed the quantity of earth required for the complete viaduct undertaking as 3,500,000 cu. yds., and the cost, including the new station, as \$14,000,000.

Consequent on the war and the period of violent inflation accompanying and following it, construction was postponed, and nothing in the way of track elevation was done, although the new union station was completed. Toronto people have, however, kept the track elevation project in the forefront, and have reminded the railways, from time to time, of the agreement entered into. The C.N.R., having absorbed the G.T.R., were looked to to carry out the latter road's obligations. On Nov. 15 the railways made a definite proposition to the city, and presented an alternative plan to that provided for by the July, 1913, agreement. This plan, for the working out of which M. H. McLeod, Consulting Officer to the Executive, Canadian National Rys., is chiefly responsible, contemplates the providing of bridges across the tracks at Yonge St. and the streets west of it, instead of track elevation, and the construction of the viaduct, to all intents and purposes exactly as agreed upon in 1913, east of Yonge St. This plan was presented by E. W. Beatty, President, Canadian Pacific Ry., Sir Henry Thornton, President, Canadian National Rys., and Mr. McLeod, on Nov. 15, at a conference at Toronto city hall, at which the Mayor, members of the Board of Control, the harbor commissioners, Board of Trade officers, S. J. Hungerford, Vice President, Operation and Construction Department, Canadian National Rys., and J. M. R. Fairbairn, Chief Engineer, C.P.R., were also present. Mr. McLeod showed plans indicating the salient features of the railways' proposals, and promised to furnish the city authorities with more detailed plans within a week.

Following is a summary of the alternative plans proposed by the railways from west to east: At Bathurst St., the pres-

ent bridge, a comparatively new steel one, to remain. The present Spadina Ave. bridge to be replaced by one 64 ft. wide over all, and including two 25 ft. roadways, and two 5 ft. sidewalks, and to be approached on a 4% grade at both ends. The present bridge at John St., which has a roadway 31 ft. 8½ in. wide, and two 6 ft. sidewalks, and the approaches to which at both ends have 4% grades, will remain. The present York St. bridge has a 3.6% grade approach from Front St., and 4% from south of the tracks. It will be replaced by one 56 ft. wide over all, including a 38 ft. roadway and two 8 ft. sidewalks, and to have a 3.6% grade approach from Front St. and 4% from south of the tracks. At Bay St. a new bridge to be built, 64 ft. wide, c. to c. of girders, including two 22 ft. roadways and two 8 ft. sidewalks, with 4% grade approaches at each end. At Yonge St. a new bridge to be built, 64 ft. wide, c. to c. of outside girders, including two 22 ft. roadways, and two 8 ft. sidewalks, with a 3.5% approach from Yonge St. and 4% from the south end. The tracks, yards, locomotive house and industrial spurs west of Yonge St. to remain at their present level. The tracks to start to rise at Yonge St., on a 1% grade, reaching viaduct level at Jarvis St., east of which the viaduct to be built practically in accordance with the 1913 agreement. Subways to be provided at Church, Jarvis, Frederick, Princess, Parliament, Trinity and Cherry Streets. The subways on all streets to be of concrete, 14 ft. in the clear, and include two 24 ft. roadways and two 8 ft. sidewalks. The present tracks along the Esplanade to be used as industrial tracks, with switching confined to between 10 p.m. and 6 a.m. The subway on Trinity St., in addition to crossing under the elevated main lines, to cross under a ramped service track leading down to the present tracks, which would remain as industrial tracks, as mentioned above, the subway for this crossing to be 30 ft. wide and 10 ft. clear height. The 6 main tracks on the viaduct to continue along the reclaimed land, south of the present tracks, and the fill to be widened to take a high level yard between Cherry St. and the Don. The C.P.R. tracks to leave the main viaduct at the west bank of the Don River, and be handled as in the original 1913 agreement, as described above, a new bridge to be provided at Eastern Ave. and the present Queen St. bridge to remain; the Canadian National tracks, crossing the Don on a new bridge, to be handled to Logan Ave., as described above. All the bridges at Yonge St., and west of it, to be of structural steel, faced with concrete, and the Eastern Ave. bridge to be a steel structure without the concrete facing. The bridge over the Don River, to be located south of the present bridge, would accommodate 7 tracks, in the nature of an extension of the yard proposed to be located between Cherry St. and the river.

The railways propose, in the event of their plan being accepted by the city, to have the Bay St. and Yonge St. bridges built in 1924, and the new union station placed in operation, in addition to acquiring the necessary land south of the existing tracks, east of Yonge St. In 1925 they would complete the York St. and Spadina Ave. bridges and the overhead bridge at Eastern Ave., and, provided the harbor commissioners get the land in shape to receive them, would complete

construction tracks south of the proposed viaduct fill, between Yonge and Trinity Streets. Other work would be done subsequently. To place the new station in operation, some raising of the present tracks between Yonge and York Streets would be necessary, the tracks to lead from the station to both east and west on a 4/10 grade. This would, of course, be done in 1924, prior to opening the station for traffic. The plans also contemplate the provision of a temporary grade east from the Don River to Logan Ave., which would be built in 1924.

In presenting the plans, the railways' officers informed the city authorities that if they were adopted, a large saving in time as well as in cost would be effected, as with the 1913 plan it would take three years to get the new station into operation, while with the new plan it would

take only 10 months. The railway estimates are that to carry out the 1913 plans would cost \$32,000,000, while the new plans would cost \$20,476,000. The city's share under the 1913 plan would be \$8,846,404, and under the new plan only \$4,213,683. If the 1913 agreement were carried out, the city would have to pay the cost of elevating the C.P.R. locomotive house and adjacent facilities, and a large yard, which expense it would escape by adopting the new plan. Mr. Beatty reminded the city authorities that, unlike the Canadian National Rys., his company has not the entire resources of the country behind it.

Both railway presidents are reported to have stated that if the city should decide that it did not want to accept the modified plans, they were willing to carry out the 1913 agreement. Sir Henry

Thornton stated that he would have to go to Parliament to get the money to proceed with whichever plan was finally adopted. Both presidents and Mr. McLeod pointed out the modified plan's advantages, as regards economy, efficiency, and saving in time.

After the conference, Mr. Beatty and Sir Henry Thornton were entertained at luncheon by the Board of Trade's council, and addressed the Board's members in its assembly room.

On Nov. 23, Mr. McLeod presented the more detailed plans, as promised, to the city Board of Control, which referred them to the Works Commissioner and the Harbor Commissioners. The proposal will be thoroughly discussed and studied by the city authorities before the railways are given an answer.

Railway Wages and Working Conditions in Canada and the United States.

Canadian Railway Shopmen.—Details of the vote taken by Canadian railway shopmen, members of the American Federation of Labor's Railway Employees' Department, Division 4, to determine whether the majority wished to immediately make application for a board of conciliation and investigation to settle their wage dispute with the railways, or to resume negotiations with the railways, were given in Canadian Railway and Marine World for November, pg. 539, and it was there stated that the majority voted for the continuance of negotiations. After consultation between the Railway Association of Canada's operating committee's wage sub-committee, and the shopmen's leaders, formal negotiations were resumed in Montreal on Nov. 21. The railways were represented by George Hodge, Assistant General Manager, Eastern Lines; J. Burns, Works Manager, Angus shops, and R. A. Pyne, Superintendent of Motive Power, Western Lines, C.P.R.; A. E. Crilly, Chief of Wage Bureau; C. E. Brooks, Chief of Motive Power, and J. C. Garden, General Superintendent of Motive Power, Central Region, Canadian National Rys. The employees were represented by R. J. Tallon, President, American Federation of Labor's Railway Employees' Department, Division 4; Frank McKenna, Vice President; and Chas. Dickie, Secretary. At the time of writing (Nov. 22), the negotiations are still in progress. Prior developments in this matter, which was first brought up last spring, when the shopmen applied for a wage increase of 10c an hour, have been dealt with in preceding issues of Canadian Railway and Marine World.

Railway Maintenance of Way Employees.—As stated in Canadian Railway and Marine World for November, the board of conciliation and investigation in the maintenance of way employees' case, consisting of E. McG. Quirk, chairman; R. T. Riley, Winnipeg, for the railways, and David Campbell, Winnipeg, for the employees, unanimously recommended a 2c an hour increase. The board's report, received since, is summarized as follows: "It is recommended: 1. That, as requested by the employees, sec. 1 of the maintenance men's wage agreement read as follows: 'By maintenance of way employees is meant employees working in the track and bridge and building departments, for whom rates of pay are provided in this schedule, who have been in the service previously for one month in the preceding 24 months. Laborers in extra gangs,

unless those practically engaged all the year round, shall not be considered as coming under this schedule. 2. That section 22 be amended to conform with sec. 1 by changing the probationary period to read one month instead of six months. 3. That sec. 22, sub-sec. G., be amended by striking out the words 'on which they are employed,' and substituting the words 'or elsewhere,' in lieu thereof. 4. That wherever in wage agreement no. 7 maintenance of way employees are now receiving less than 40c an hour, an increase of 2c an hour be granted."

The employees' representatives expressed willingness to abide by this award, but the railway managements refused to grant the increase recommended, and issued the following statement: "The board's recommendation to increase by 2c an hour rates of pay for employees receiving less than 40c an hour cannot be accepted until some means have been found to secure the increased revenue required to meet the additional expenditures which the adoption of the recommendation would involve. This decision has been reached notwithstanding that the board, constituted as it was, has unanimously recommended, in effect at least, that in view of the substantial increases in rates of pay and improvements in working conditions that the employees have received in recent years, employees now receiving rates of pay of 40c an hour or over should not, under existing conditions, receive any further increase. It was definitely shown in evidence submitted to the board, which was not questioned, that rates of pay in recent years had increased materially beyond any increase in the cost of living, and that there has not been any change in the cost of living since the rates of pay for maintenance of way employees were last revised, to justify any further revision upwards at the present time."

C.P.R. Telegraphers.—The board of conciliation and investigation, consisting of Lt.-Col. O. M. Biggar, Ottawa, chairman; J. B. Coyne, Winnipeg, for the company, and David Campbell, Winnipeg, for the employees, appointed to settle the dispute between the C.P.R. and its station agents, assistant agents, telegraph operators, train dispatchers, traffic supervisors and linemen, members of the Order of Railway Telegraphers, held sittings in Montreal on Oct. 18, 19 and 20. The company was represented by Geo. Hodge, Assistant General Manager, Eastern Lines, C.P.R., and A. E. Stevens, General Superintendent, Manitoba District, and the employees were represented by Sena-

tor G. D. Robertson and numerous brotherhood officers. The board discovered that when the request for its formation was made by the employees, the differences between the company and the employees were connected with a wage increase application and a desire to have several rules changed, but that prior to opening hearings, all but one of the proposed changes in the rules had been disposed of satisfactorily by direct negotiation, leaving for the board to settle only the matter of a general wage increase and the employees' request that there be added to the yearly remuneration of traffic supervisors, train dispatchers and certain assistant agents an amount equal to 7 days' pay. The board's majority report, signed by Messrs. Biggar and Coyne, held that neither this latter request nor that for a general wage increase were justified, and a minority report signed by Mr. Campbell favored increase in specified cases. The Dominion Labor Department received a letter from A. E. Chapman, General Chairman, C.P.R. System, Order of Railroad Telegraphers, on Nov. 5, stating that neither award would be acceptable to the employees. Press reports state that a vote is being taken among the men affected to determine whether they want further action taken to obtain the increase sought.

C.P.R. clerical employees, members of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, served 30 days' notice on the management on Oct. 22 that they desired a reopening of negotiations on their wage schedule. Wage increases are sought which would have the effect of restoring wages to the 1920 level, and specifically the employees demand return to overtime rates existing in 1920, which would mean time and a half after 8 hours, instead of after 9 hours as at present; and restoration of overtime rates for work on Sundays and legal holidays. About 4,000 men employed on C.P.R. Eastern Lines are affected.

Train Service Brotherhoods' Wage Demands.—Details of the decisions to ask for increased wages, arrived at by officers of the Big Four brotherhoods in the U.S., have been given in preceding issues of Canadian Railway and Marine World. It is reported that employees on Canadian lines have acquainted Canadian railway officials with their intention to try to get corresponding increases when schedules come up for discussion in the near future, and that the managements,

in acknowledging receipt of this information, have indicated that they will bring forward for consideration certain changes in schedule rules which they consider advisable, and have also indicated that they think the present time inopportune to ask for higher wages.

Shop Staff Reductions.—C.P.R. shops throughout western Canada were closed during the last three days of October, which resulted in vigorous protest from the shopmen's leaders, who alleged that the action was a violation of the agreement providing for a working week of 40 hours. Two hundred men were laid off at the Canadian National Rys. Transcona shops during the last week in October, in conformity with the policy of putting into effect a cut of about 10% in the staff at all shops, and the Great War Veterans Association, provincial command, communicated with Sir Henry Thornton, President, Canadian National, asking that they be reinstated. He replied that while he appreciated the spirit in which the request was made, the C.N.R. must be operated with business intelligence and with due regard for earnings, and that therefore the request had to be refused.

Sir Henry Thornton, President, Canadian National Rys., in addressing the Toronto Board of Trade on Nov. 16, said: "As far as the Canadian National is concerned, we cannot go on indefinitely increasing wages and decreasing rates, if we are to maintain any sort of efficiency or solvency. I would be the last one to advocate anything other than a living wage for those who work upon the railways, but I want to make it quite clear—and in saying this I am violating no principles of economics, and I manifest no lack of sympathy to the working class—we cannot go on increasing wages if we are going to eliminate our deficit. Likewise, until we reach a more settled financial condition, we cannot endorse any wholesale reduction in rates and fares. If anyone can show me how 2 and 2 make 6, I will be much obliged to him. It can't be done, and unless within a reasonably short time the burden which the C.N.R. system imposes in the form of deficits on the taxpayer is not reduced we are all going to be in a very bad way. This is what I am fighting for and this is what I am trying to achieve."

U.S. Situation.—As stated in Canadian Railway and Marine World for November, the U.S. Railroad Labor Board, in a decision effective Oct. 16, granted small wage increases to members of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees on some 30 railways, as follows: Storekeepers, assistant storekeepers, chief clerks, foremen, and other clerical supervisory employees, 2c an hour; clerks with over one year's experience, 2c an hour; clerks with less than one year's experience, 1c an hour (clerks without experience on entering the service to be paid \$2.35 a day for first 6 months and \$2.75 a day for second 6 months); callers, assistant station masters, train announcers, gate-men, baggage and parcel room employees, 2c an hour; janitors and watchmen, 1c an hour; common laborers in stations and warehouses, 2c an hour; freight handlers, 1c an hour; sealers, scalers and fruit inspectors to be paid 1c an hour over truckers' rates, and stowers and coopers 2c an hour over truckers' rates.

The Brotherhood of Railroad Signalmen, which, as stated in our November issue, had been refused a wage increase by the Labor Board, has asked the Board to withdraw its decision and remand the

dispute to the individual railways interested for settlement locally. It does not seem reasonable to suppose that the Board will accede to this request, as it would appear to be establishing a dangerous precedent, and to be robbing the Board's decisions of any finality.

Train service employees on U.S. railways have not met with any great degree of encouragement in their effort to get higher wages. Practically all carriers asked for wages increases have refused to grant them, but on the contrary have suggested elimination of several rules favorable to the employees. The outlook

is that the negotiations between U.S. railways and their train service employees on wage contracts which expire on Dec. 1 will result in disagreement, and that the matter will go before the Labor Board.

A Philadelphia press report states that system federation no. 90, representing shopmen on the Pennsylvania System, has brought suit in the Federal District court against the Pennsylvania Rd. for \$15,000,000, alleged due to make up underpayments which resulted from the Pennsylvania's refusal to abide by the U.S. Railroad Labor Board's rules.

Self Propelled Cars on Steam Railways.

The Canadian National Rys. management has ordered 6 storage battery cars from International Equipment Co., Montreal, Canadian agents for Edison Storage Battery Co., and the Railway Storage Battery Car Co. They will be built at the Canadian Car & Foundry Co.'s Montreal plant, and are expected to be delivered in 6 months. They will resemble very closely car no. 15,801, now in service between Toronto and Beaverton, which was described and illustrated in preceding issues of Canadian Railway and Marine World. Equipment will consist of 4 G.E. 261-A. motors and 250 A-12-H Edison storage batteries.

The storage battery car reported in our November issue as being built at the Niagara, St. Catharines & Toronto Ry. shops in St. Catharines, Ont., for the Canadian National Rys., and of the frame of which an illustration was given, has been completed, and will be put on exhibition at St. Catharines in connection with an exhibit of home products which will be held there shortly, before going into operation.

The large gasoline motor car ordered by the G.T.R. from the National Steel Car Corporation, Hamilton, before the consolidation, has been completed, and the expectation at the time of writing (Nov. 22) is that it will be tested between Wyoming and Petrolia, 5.74 miles, on the Petrolia Subdivision, London Division, Southwestern Ontario District, Central Region, in the near future, and go into operation there. This car was described and plan and elevation given in Canadian Railway and Marine World for February, pg. 49. A London paper, in speaking of the proposed introduction of self propelled cars on the London Division, referred recently to the steam car which the Canadian National Rys. once had in operation, which, it said, "was run by steam power, developed under gasoline and kerosene pressure." (Sic.)

The Pacific Great Eastern Ry., as stated in Canadian Railway and Marine World for November, is having a gasoline car built for operation between Williams Lake, 277.8 miles from Squamish dock, and Quesnel, 70.7 miles. The engine and trucks will be supplied by the Four-Wheel Drive Auto Co., Kitchener, Ont., and the body is being built to the order of the Westminster Iron Works, New Westminster, B.C. The car will, in addition to providing passenger service, be used for switching freight cars, and occasionally for hauling one freight car on the main line. The chassis complete will weigh 11,000 lb., and the car will be 25 ft. 5½ in. over couplers; the body will be 22 ft. 2 in. over all, and 8 ft. 10 in. wide outside; width of frame will be 36 in. and wheelbase 15 ft. 5 in. The car will be equipped with a Wiscon-

sin 62 h.p. motor, 4 cycle, 6 cylinder, with the following chief characteristics: bore, 5.1 in.; stroke, 5.5 in.; piston displacement, 672 cu. in.; no. of crankshaft bearings, 4; diam., 2¾ in.; length of connecting rods, 12 in.; lubrication, forced feed; cooling system, centrifugal pump; radiator, tubular, 3 point suspension. There will be an Eisemann high tension magneto with impulse starter, Stromberg carburetor, a 50 gall. gasoline tank mounted at side of chassis, with Stewart vacuum feed, and Hele Shaw multiple disc clutch with clutch brake. The transmission will be of the jaw clutch type, the gears always being in mesh. Four speeds forward and 4 reverse will be provided. The reverse gear mechanism will be mounted in the sub-transmission, and will contain a differential, permitting the power to be transmitted in either forward or reverse motion. This mechanism will be controlled by a hand lever located near the driver, similar to the reverse lever on a locomotive, and will permit the use of all 4 speeds in either direction. The mechanism will be mounted on ball bearings throughout, will be housed in an oil-tight, dust-proof case, and will run in an oil bath. Power will be transmitted from the reverse gear differential to the axles, through propeller shafts, each containing universal joints, these to have hardened steel bushings running upon hardened steel pins. Both front and rear axles will be rigid, like the rear axle of a truck, and will be of the full floating type. Each axle will contain a differential, through which the power will be transmitted to each driving wheel. The axle differentials will be completely housed in oil-tight, dust-proof casings, and these casings, and not the driving axles, will take the weight of the car. The car will be equipped with a pilot at the front end, an air brake system, with brake shoes applying on all wheels, a 10 cu. ft. per min. compressor controlled by automatic governor, 2-unit starting and lighting system, exhaust gas heating system and locomotive type warning bell. The wheels will be steel tired, 35 in. diam.

Mechanical Convention at Atlantic City.—The American Railway Association's Mechanical Division, general committee, decided at a meeting in New York on Nov. 8, to hold a convention with exhibits at Atlantic City, N.J., on June 11, 1924. The Railway Supply Manufacturers' Association also voted in New York on the same day to hold exhibits on the same dates.

Canadian Railway Club.—C. W. Parker, Signal Engineer, C.P.R., read a paper on Railway Signalling, which was illustrated by stereotypical views and blackboard sketches, at the Club's monthly meeting, Nov. 13.

Railway Rolling Stock Orders and Deliveries.

Canadian Locomotive Co. has delivered 7 more mikado locomotives to Canadian National Rys.

The C.P.R. has ordered 15 steel frames for colonist cars, from National Steel Car Corporation.

The C.P.R. is having 2 steel snow ploughs built at its Angus shops, Montreal, in addition to the 4 delivered recently.

Toronto, Hamilton & Buffalo Ry. has ordered 10 first class passenger cars, 6 smoking cars and 6 baggage cars from Canadian Car & Foundry Co.

Canadian Locomotive Co. has delivered 5 transfer locomotives to Canadian National Rys., and 3 mikado locomotives to Timiskaming & Northern Ontario Ry.

The Timiskaming & Northern Ontario Ry. has ordered one more mikado locomotive from Canadian Locomotive Co., to be built to the same specifications as the 4 ordered from the same company in 1921, and the 3 ordered in Oct., 1923, which have already been delivered.

Canadian Car & Foundry Co. has made the following deliveries:—6 steel frames for parlor cafe cars, 12 all steel mail cars and 300 75-ton coal cars, to Canadian Pacific; 30 all steel sleeping cars, 500 60-ton box cars and 12 75-ton depressed center flat cars, to Canadian National.

Montreal Locomotive Works has delivered 15 mikado locomotives, 2-8-2, with cylinders 25½ x 32 in., to Canadian Pacific Ry.; 11 mikado locomotives, 2-8-2, with cylinders 27 x 30 in., to Canadian National Rys.; and 5 4-wheel switching locomotives, 0-4-0T, with cylinders 30 x 20 in., to Quebec Development Co.

Canadian National Rys. received the following rolling stock during October: 6 mikado locomotives, and 1 transfer locomotive, from Canadian Locomotive Co.; 15 sleeping cars, 326 60-ton box cars, and 180 stock cars, from Canadian Car & Foundry Co.; 14 box cars, and 38 general service cars, from Eastern Car Co.; 398 automobile cars, and 56 60-ton box cars, from National Steel Car Corporation.

The C.P.R. received the following rolling stock between Oct. 12 and Nov. 11:—16 mikado locomotives, from Montreal Locomotive Works; 4 steel snow ploughs, 14 oil tanks, 10,000 gall. capacity, and 430 36 ft. steel underframe box cars, built at its Angus shops, Montreal; 4 cafe parlor cars, frames built by Canadian Car & Foundry Co. and cars completed at Angus shops; 177 40-ton flat cars from Eastern Car Co.

U.S. locomotive builders' operations are reported as follows:—Locomotives shipped from plants in Oct. 1923, 310, compared with 335 in Sept. 1923 and 145 in Oct. 1922. In the first 10 months of 1923, 2,561 locomotives were shipped, compared with 905 in the first 10 months of 1922. Unfilled orders on hand at the end of Oct. 1923 were 977, compared with 1,178 at the end of Sept. 1923, and 1,538 at the end of Oct. 1922.

Eastern Car Co., New Glasgow, N.S., is building 10 cars for the British Empire Steel Corporation, of which it is a subsidiary, to transport workmen to and from the B.E.S.C. coal mines. They will be of similar design to a box car, 65 ft. long, but will have side windows, and end platforms, and will be equipped with steam heating. Longitudinal seats will be installed, and the seating capacity of each car will be about 90.

Eastern Car Co., New Glasgow, N.S., is going to build 100 50-ton coal cars for the British Empire Steel Corporation, of which it is a subsidiary. They will be all steel, and of the same type as those built last spring, which had the following dimensions: length inside, 30 ft. 0¼ in.; width inside, 9½ ft.; height from rail to top of frame, 10 ft.; marked capacity, 100,000 lb.; maximum capacity, 120,000 lb. They will conform closely to A.R.A. standards, will be of the self clearing type, with 4 dump doors, operated in pairs, and will have A.R.A. arch-bar trucks, 5½ x 10 in. journals, 33 in. 750 lb. cast iron wheels, and Cardwell G-11-A draft gear.

Canadian Bridge Co. has ordered a 4-wheel switching locomotive, 0-4-0, from Montreal Locomotive Works. The general dimensions, etc., will be as follows:

Gauge	4 ft. 8½ in.
Weight on drivers	99,800 lb.
Total engine	99,800 lb.
Wheel base, driving	7 ft.
Total engine	7 ft.
Cylinders	16 x 24 in.
Driving wheels	42 in.
Main journals	8½ x 9 in.
Others	8½ x 9 in.
Boiler, type	Radial stay, straight top
pressure	180 lb.
Firebox, length	52 3/16 in.
width	55½ in.
Grate area	20.2 sq. ft.
Tubes	156—2 in.
length	11 ft. 8 in.
heating surface	946 sq. ft.
Firebox, heating surface	69 sq. ft.
Total heating surface	1,015 sq. ft.
Tractive power	22,400 lb.
Factor of adhesion	4.46
Saddle tank	2,000 gall.
Coal	2,700 lb.

The Eastern Car Co., New Glasgow, N.S., has begun construction of 8 all-steel wing snow ploughs, with air operated wing, and nose attachment, for Canadian National Rys., the first of which, it is expected, will be delivered early in December. They will be of practically the same design as those built previously for the C.N.R., except that the wings will be wider, and the contour will be changed so that the snow will be thrown further to the side than previously. The wing-in cylinders will be increased in diameter to 16 in., for quicker action of the wing-in. The nose angle will be increased, so as to throw the snow off the front of the plough and prevent its accumulation. The searchlight, which in previous designs was located outside the cupola, will be built into the wall, so that globes can be put in from the inside, thus obviating the necessity of men going out on the roof. The nose operation, handled previously by one double-acting cylinder, will be taken care of by one cylinder, in which the piston thrust will be downward, and another in which it will be upward, these cylinders being arranged to work in conjunction with each other.

Cathels & Sorenson, Victoria, B.C., have ordered a prairie type locomotive, 2-6-2, from Montreal Locomotive Works. The general dimensions, etc., will be as follows:—

Gauge	4 ft. 8½ in.
Weight on drivers	96,000 lb.
engine truck	13,000 lb.
trailing truck	16,000 lb.
Total weight	125,000 lb.
Tender weight	84,000 lb.
Wheel base, driving	9 ft.
Total, engine	24 ft.
Total, engine and tender	46½ ft.
Cylinders	17 x 24 in.
Driving wheel	44 in.
Engine truck wheels	28 in.
Trailing truck wheels	28 in.
Tender truck wheels	33 in.
Main journals	7½ x 9 in.
Others	7½ x 9 in.

Engine truck journals	5 x 10 in.
Trailing truck journals	5 x 10 in.
Boiler, type	Radial stay, extended wagon top
Boiler pressure	180 lb.
Firebox length	84½ in.
width	40½ in.
Grate area	23.5 sq. ft.
Tubes	235—2 in.
Length over tubes	10 ft. 5 in.
Heating surface, tubes	1,282 sq. ft.
firebox	128 sq. ft.
Total heating surface	1,410 sq. ft.
Tractive power	24,000 lb.
Factor of adhesion	4.0
Tender frame	Steel channels
Tank capacity	4,000 gall.
Fuel	4 cords wood

The Timiskaming & Northern Ontario Ry. 3 locomotives, ordered from Canadian Locomotive Co., as stated in Canadian Railway and Marine World for October, will have the following general dimensions, etc.:—

Type	2-8-2 mikado, with booster
Gauge	4 ft. 8½ in.
Type of cab	Vestibule
Fuel	Soft coal
Service	Freight
Limiting height	15 ft. 4½ in.
width	10 ft. 9 in.
Weight in working order on drivers	195,690 lb.
engine	24,750 lb.
trailing truck	49,160 lb.
total engine and tender	269,600 lb.
Wheelbase, rigid	16 ft. 6 in.
engine	34 ft. 8 in.
engine and tender	62 ft. 5½ in.
Diameter of driving wheels	63 in.
Material of driving wheel centers	Cast steel
Leading truck wheels	33 in.
Trailing truck wheels	45 in.
Diam. and length of main driving journals	10 x 13 in.
Diam. and length of other driving journals	9 x 13 in.
Diam. and length of engine truck journals	6½ x 12 in.
Diam. and length of trailing truck journals	8 x 14 in.
Boiler, type	Radial stay
Boiler, outside diam. first ring	71 in.
Boiler, working pressure	180 lb.
Tubes, number and diameter	160—2½ in.
Flues, number and diameter	32—5½ in.
Length of tubes	20 ft.
Combustion chamber, length	None
Heating surface, firebox and arch tubes	221.5 sq. ft.
Heating surface, tubes and flues	2,806.5 sq. ft.
Heating surface, total	3,028 sq. ft.
Superheating surface	747 sq. ft.
Firebox length and width	96 x 75½ in.
Grate area	60 sq. ft.
Valves, type	Piston
Valve travel	8½ in.
Valves, diam.	14 in.
lap and lead	Lap 1½ in., lead ¼ in.
Cylinders, stroke	30 in.
diam.	25 in.
Tractive effort	54,700 lb. with booster
Factor of adhesion	5.35
Weight per cylinder horsepower	133 lb.
Weight per boiler horsepower	154 lb.
Boiler h.p. in % cylinder h.p.	86.3
Booster	Franklin Ry. Supply Co.
Valve gear	Young
Superheater	Superheater Co., type A
Reverse gear	Ragonnet
Injectors	Ontario
Feedwater heater	Elesco
Headlight equipment	Pyle-National electric
Engine truck	Franklin Economy
Trailing truck	Commonwealth Steel Co. Delta
Safety valves	Coale
Air brakes	Westinghouse E.T. 6
Frames, material	Vanadium cast steel
Firedoor	Franklin butterfly
Driving box wedges	Franklin adjustable
Grate shakers	Franklin, power
Driving boxes	Cast steel
Oilers	Franklin, grease lubricators
Sanders	Wilson, type A
Steam heat reducing valve	Gold
Packing	Lewis & Kunzer, metallic
Radial buffer	Franklin
Steam heat connections	Barco
Air bell ringer	Viloco
Blow off cocks	Duplex
Weight of tender in working order	151,750 lb.
Capacity of tank	6,500 imp. gall.
Style of tank	Water bottom
Coal capacity	12 tons
Trucks, type	4-wheel, equalized
Tender frame	Commonwealth cast steel
wheels, type	Solid rolled steel
diam.	36 in.
Journals, diam. and length	5½ x 10 in.

Mainly About Railway People Throughout Canada.

Miss Marjory Annable, daughter of W. G. Annable, Assistant Steamship Passenger Manager, C.P.R., Montreal, was among the debutantes at a dance at the Ritz Carlton Hotel there recently.

F. H. Anson, President, Abitibi Power & Paper Co., which owns the Abitibi Transportation & Navigation Co., died in Montreal General Hospital, Nov. 1, following an operation.

George D. Baxter, for many years G.T.R. station agent at St. Catharines, Ont., died there Nov. 16.

E. W. Beatty, K.C., President, C.P.R., will preside at a dinner to St. John, N.B., business men on board the C.P.R. s.s. Montclair there, Dec. 5.

C. A. Biggar, Assistant Superintendent of the Geodetic Survey of Canada, died suddenly at his home in Ottawa, Nov. 2, aged 72.

H. H. Brewer, Assistant General Manager, Western Region, lines east of Jasper, Alta., Canadian National Rys., Winnipeg, who, as stated in Canadian Railway and Marine World, was granted leave of absence on Oct. 5, for a few months, owing to illness, is in one of the southwestern states.

A. Brostedt, General Traffic Agent, Canadian National Rys., Hong Kong, China, has arrived in Montreal to attend a general conference of C.N.R. officials.

Sir George McLaren Brown, European General Manager, C.P.R., entertained at dinner at the Hotel Metropole, London, Eng., recently, a number of merchants from Denmark, Sweden and Finland, who were proceeding by the C.P.R. to Montreal, thence via Chicago to Mexico, to promote trade relations.

Arthur Bernard Buckworth, who has resigned from the position of Deputy Minister of Railways for British Columbia, Victoria, was born at Birmingham, Eng., Mar. 2, 1876, entered transportation service in 1896, and was, to 1897, engaged in loading freight cars for C.P.R. at Vancouver, B.C.; 1898 to 1906, ticket agent, C.P.R., and land agent, Great Northern Ry., Ymir, B.C.; 1906 to 1912, timber contracting for railways; 1912 to 1918, representative at Vancouver, for E. R. C. Clarkson & Sons, Toronto, trustees and liquidators; 1918 to Aug. 1, 1920, Manager, under E. R. C. Clarkson & Sons, Spokane & British Columbia Ry., Vancouver; Aug. 1, 1920, to Jan., 1923, General Manager, Pacific Great Eastern Ry., Vancouver, B.C.; Jan., 1923, to Nov. 30, 1923, Deputy Minister of Railways for British Columbia. In announcing the resignation, the B.C. Minister of Railways said: "Mr. Buckworth's administrative service, first as General Manager, Pacific Great Eastern Ry., and since January, as Deputy Minister of Railways, have been highly satisfactory, and his resignation is accepted with regret. While acting as Manager of the Government railway, he had many difficulties to contend with, but his untiring energy and persistency placed the railway in a much improved condition both physically and financially. For the past year, in addition to his regular duties, he has been engaged in investigating the resources, etc., of the district tributary to the railway." Mr. MacLean also stated that there will not be any new appointment made in the near future, owing to the temporary cessation of construction work, the present staff being able to carry on the Department's work.

M. J. Butler, C.M.G., formerly Deputy

Minister of Railways, addressed the Knights of Columbus at luncheon in Toronto recently, on transportation.

J. R. Cameron, Assistant General Manager, lines west of Jasper, Alta., Western Region, Canadian National Rys., was mentioned in Canadian Railway and Marine World for November as having been transferred from Vancouver to Winnipeg to discharge the duties of H. H. Brewer, Assistant General Manager, lines east of Jasper, Western Region, during the latter's absence on account of ill-health. We are officially advised

kaming & Northern Ontario Ry., addressed the Engineering Institute of Canada's Toronto branch on Nov. 29, on recent developments on that line.

D. C. Coleman, Vice President, C.P.R. Western Lines, and Mrs. Coleman returned to Winnipeg, Nov. 18, from a trip to Montreal and eastern U.S. points, during which Mr. Coleman addressed the New England Railroad Club at Boston, Mass., on "A railway contribution to the development of a nation."

J. E. Dalrymple, Vice President, Traffic Department, Canadian National Rail-



Hon. G. P. Graham, Minister of Railways and Canals, at Ye Olde Cheshire Cheese, in London, during the Imperial Conference.
—Reproduced from Toronto Evening Telegram.

that our information as to Mr. Cameron discharging Mr. Brewer's duties was erroneous, as Mr. Campbell's visit to Winnipeg was in connection with routine matters, including the question of the preparation of the 1924 budget for his territory, and he also attended the meeting of Western Region officials there Oct. 31, leaving that night to return to Vancouver.

R. G. Chamberlain, Chief of Investigation Department, C.P.R., went from Toronto to Montreal, Nov. 17, in one of the Laurentide Air Service's aeroplanes.

S. B. Clement, Chief Engineer, Timis-

ways, wrote an article on the remarkable progress made by Canada's commerce and industry in 20 years, which was published recently in the Journal of Commerce and Commercial Bulletin, New York.

G. A. Dodge, who has retired from active service, was presented with an address and a gold-headed cane by his associates in the Canadian National Rys. Purchasing Department at Moncton, N.B., recently. L. Price, chief clerk, read the address, the presentation being made by F. H. Kinnear, Purchasing Agent.

C. F. Furse has been appointed Man-

ager of the Tourist Association for Quebec Province, and is reported to be preparing plans for a campaign for securing tourists.

F. G. Gemmall, of the Canadian National Rys. Publicity Department, London, Eng., sailed from Montreal on the White Star s.s. Doric, Nov. 10, for Liverpool.

J. E. Gibault, Division Engineer, Canadian National Rys., Quebec, addressed the Rotary Club there recently on railway maintenance of way.

J. Murray Gibbon, General Publicity Agent, C.P.R., addressed the Empire Club of Canada at Toronto, on Nov. 22, on Canadian letters and the new Canadian.

P. A. Goguen, Apprentice Instructor, Canadian National Rys.' shops, Moncton, N.B., was given an address and a reading lamp by the apprentices recently as wedding gifts.

Hon. G. P. Graham, Minister of Railways and Canals, who had been attending the League of Nations meeting at Geneva, and the Imperial Conferences in London, has returned to Ottawa, having arrived at New York, Nov. 23, on the s.s. Berengaria. He will be entertained at dinner in Toronto on Dec. 12 by Ontario Liberals.

Mrs. de la Hooke, wife of Edward de la Hooke, formerly City Passenger Agent, G.T.R., London, Ont., and latterly steamship agent, who has been Secretary-Treasurer of the Canadian Ticket Agents' Association since its formation 37 years ago, died suddenly at their home in London, on Oct. 30, while at dinner, owing to a heart attack. Among the transportation officials who attended the funeral on Nov. 1, All Saints Day, were several from Toronto, including W. Fulton, District Passenger Agent, C.P.R.; C. E. Horning, District Passenger Agent, Canadian National Rys.; G. W. Vaux, General Agent, Union Pacific System; and J. J. Rose and J. J. Brignall, of the Robert Reford Company. W. Jackson, C.P.R. ticket agent, Clinton, Ont., represented the Canadian Ticket Agents' Association, of which he is one of the oldest members, and one of the executive committee. One of the hymns sung at the funeral service was "On the Resurrection Morning," which was written in 1864 by the Rev. S. Baring-Gould, who, in 1855, went as an assistant master to St. John's College, Hurstpierpoint, Sussex, England, which Mr. de la Hooke attended from 1850 to 1858, and who attained his 90th birthday recently.

W. H. Hunt, who is now Resident Engineer of the harbor and railway work at Secondee, Gold Coast Colony, was at one time Assistant Engineer on the Grand Trunk Pacific Ry., at Edmonton, Alta.

Geo. R. Huntington, President, Minneapolis, St. Paul & Sault Ste. Marie Ry., the Duluth, South Shore & Atlantic Ry., and the Mineral Range Ry. (C.P.R. subsidiaries), died at Minneapolis, Minn., Nov. 3, from heart disease. He was born at New Lisbon, Wis., Sept. 10, 1868, and entered railway service in 1882, as office boy, Chicago, Milwaukee & St. Paul Rd., being subsequently appointed successively operator, agent and train dispatcher, which latter position he held from 1884 to 1888, since when his record has been:—1888 to June 25, 1899, train dispatcher and Chief Train Dispatcher, Minneapolis, St. Paul & Sault Ste. Marie Ry.; June 25, 1899, to Oct. 31, 1900, Superintendent, same road; Nov. 1, 1900, to July 1, 1909, General Superintendent, same road; July, 1909, to period of federal control, General Manager, same

road; during federal control, Federal Manager, same road, Duluth, South Shore & Atlantic Ry., Mineral Range Rd., Copper Range Rd., and Lake Superior Terminal & Transfer Ry.; March 1 to March 10, 1920, General Manager, Minneapolis, St. Paul & Sault Ste. Marie Ry., Duluth, South Shore & Atlantic Ry., and Mineral Range Rd.; March 10, 1920, to May 16, 1922, Vice President and General Manager, Minneapolis, St. Paul & Sault Ste. Marie Ry. (including Wisconsin Central Ry.), and Duluth, South Shore & Atlantic Ry., and Mineral Range Rd.; May 16 to the date of his death, President, Minneapolis, St. Paul & Sault Ste. Marie Ry.

C. T. Jaffray, who has been elected President, Minneapolis, St. Paul & Sault Ste. Marie Ry., a C.P.R. subsidiary, was born in Galt, Ont., about 55 years ago, and after being educated at the Galt and Kitchener high schools, entered the Merchant Bank of Canada's service at Toronto, remaining for 5 or 6 years, and then going to Chicago, where he continued in banking service, afterwards go-



Frederick Ernest Whelpley,
Who has been appointed Treasurer, Atlantic
Region, Canadian National Railways,
Moncton, N.B.

ing to Minneapolis and entering the service of the Northwestern National Bank, which later became the Second National Bank, and then the First and Security National, and finally the First National Bank of Minneapolis, of which he is now President. He has been a director of the M., St. P. & S. S. M. Ry. for some time, and for 10 years prior was a director of the Wisconsin Central Ry. He is a financier of outstanding position, thoroughly familiar with the affairs of the road he has been elected to preside over, and well acquainted with the commercial conditions of the western states served by the railway.

Mrs. Kelley, wife of Howard G. Kelley, formerly President, Grand Trunk Ry., who has been living in Boston, Mass., for some time, left there at the beginning of November for San Diego, Cal.

Hon. W. C. Kennedy, who, when he died on Jan. 17, was Minister of Railways

and Canals, was buried temporarily in St. Alphonsus Cemetery at Windsor, Ont. The bronze coffin containing the body was removed on Nov. 1 to a handsome mausoleum, which had been built there.

J. R. Kirkwood, of the Canadian National Rys. dispatchers' staff at London, Ont., was given a loving cup by members of the local railways' staffs recently, in recognition of excellent bowling.

W. Leon Lindsay, formerly Travelling Passenger Agent, C.P.R., St. John, N.B., died there Nov. 16, after a long illness.

A. E. Lock, Superintendent, Car Service, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., was elected Vice President, Eastern Association of Car Service Officers, at the autumn meeting in New York recently.

Capt. C. B. R. Macdonald, who is a graduate of the Royal Military College, Kingston, Ont., has been appointed Assistant Engineer, Chilean Trans Andine Ry., at Los Andes, Chile.

Neil R. Macdonald ("Foghorn"), who died in Montreal Nov. 20, aged 63, from pneumonia, was for many years well known in railway construction work in western Canada, particularly on the C.P.R. In later years he went in for mining in the Yukon and took part in the Great War.

Ewen MacKenzie, contractor, who died at Toronto recently, left an estate valued at \$23,884. He was a brother of Sir William Mackenzie.

Ewen Mackenzie, contractor, who died recently, and ex-President, Canadian Northern Ry., became seriously ill early in November, suffering from acute heart dilation, thought to have been brought on by over exertion at golf. At the time of writing (Nov. 28) he is still laid up at his house in Toronto, and while his recovery is confidently expected, it is thought that he will have to rest completely for some time. He is 74 years of age.

Sir Donald Mann, ex-Vice President, Canadian Northern Ry., sailed on the s.s. Montlaurier from Quebec, Nov. 3, for Liverpool.

Edward Maxwell, R.C.A., who died suddenly in Montreal Nov. 14, aged 56, was the architect for the enlargement of the Chateau Frontenac, Quebec, for the C.P.R., as well as for the erection of the company's hotels at Winnipeg, Calgary and Vancouver.

W. Neilson, who died in Elizabeth Tp., Ont., Nov. 15, aged 93, entered G.T.R. service in 1854, and after serving some years as conductor, was station agent successively at Kingston Jct., and at Lyn, Ont. He retired from active service about 30 years ago.

Hon. Frank Oliver, recently appointed a member of the Board of Railway Commissioners, has announced his retirement from the editorial and business direction of the Edmonton Bulletin, which he founded in 1882, and has directed continuously since. On Oct. 25, residents of Edmonton and vicinity gave him a reception on the spot overlooking the Saskatchewan River where he halted with his ox cart on arriving there in 1876.

R. P. Ormsby, Secretary, Canadian National Rys., sailed from Montreal on the White Star-Dominion s.s. Regina, Oct. 25, for England.

John O'Rourke, of the stores and mechanical accounting office, Atlantic Region, Canadian National Rys., Moncton, N.B., was given a club bag by the Auditor of Disbursements' office staff and an address and a dressing case by the

x Sir Wm. Mackenzie, President

stores and mechanical accounting office, on Nov. 17, on leaving the service to go to Buffalo, N.Y.

A. E. Parker, Managing Secretary, Winnipeg Board of Trade, addressed the Greenwood Methodist Church Young Men's Club at Winnipeg, on Nov. 1, on the railway builders of Canada.

Senator J. D. Reid, ex-Minister of Railways and Canals, and Mrs. Reid, left Prescott, Ont., Nov. 25, to sail from New York for a several months trip abroad.

J. K. L. Ross, one of the C.P.R. directors, and Mrs. Ross returned to Montreal, Nov. 12, from Laurel, Md., where they spent several weeks.

Frank Russell, Superintendent of Wharves and Traffic, Vancouver Harbor Commission, has charge of the Commission's terminal railway.

J. G. Rutherford, C.M.G., V.S., H.A.R. C.V.S., one of the members of the Board of Railway Commissioners, who died at Ottawa, July 24, left an estate valued at \$34,712.63.

P. W. St. George, consulting engineer, Montreal, died in Montreal, Nov. 12, aged 74. Born and educated in Scotland, he came to Canada in 1866, and entered railway service in the Nova Scotia Ry.'s engineering department, and subsequently was engaged on surveys for the Intercolonial Ry., becoming Assistant Engineer of Construction in 1870. Later on he was on survey work for the Northern Colonization Ry., now part of the C.P.R. From 1875 to 1883 he was in the Montreal City Council's service, to which he returned, after a few months' service as Divisional Engineer, Norfolk & Western Rd., remaining as City Surveyor until 1900, when he retired.

Lord Shaughnessy, Chairman of the Board, C.P.R., and Hon. Marguerite Shaughnessy, returned to Montreal, Oct. 29, from a short trip to Laurel, Md., where they visited J. K. L. Ross, another C.P.R. director, and Mrs. Ross.

Ernest W. Smith, who has been appointed General Superintendent, Sleeping, Dining and Parlor Cars and Restaurants, Canadian National Rys., Montreal, was born at Northbridge, Mass., April 21, 1869, and entered railway service March 1, 1892, since when he has been, to March 1, 1898, stenographer, G.T.R., Montreal; March 1, 1898, to March 1, 1902, city ticket agent, G.T.R., Sherbrooke, Que.; March 1, 1902, to May 1, 1908, inspector, Dining and Parlor Car Department, G.T.R., Montreal; May 1, 1908, to March 1, 1923, Superintendent, Dining and Parlor Car Department, G.T.R., Toronto; March 1, 1923, to Aug. 1, 1923, Superintendent, Sleeping, Dining and Parlor Cars and Restaurants, Canadian National Rys., Toronto; Aug. 1, 1923, to Nov. 1, 1923, acting General Superintendent, Sleeping, Dining and Parlor Cars and Restaurants, Canadian National Rys., Montreal.

C. V. Stephens, who is spoken of in press reports as Traffic Controller, Great Indian Peninsula Ry., but whose name is not in the official list in Canadian Railway and Marine World's library, has been visiting Canada and the United States to study railway practice.

A. E. Stevens, General Superintendent, Manitoba District, C.P.R., returned to Winnipeg early in November, after spending some three weeks in Montreal in connection with the board of conciliation and investigation on the dispute between the C.P.R. and certain of its employees who are members of the Order of Railroad Telegraphers.

Miss Winifred Tait, daughter of Sir

Thomas Tait, President, Fredericton & Grand Lake Coal & Ry. Co., who had been in Europe since April, returned to Montreal by the C.P.R. s.s. Montlaurier, Nov. 1.

Lt.-Col. O. E. Talbot, one of the Canadian National Rys. directors, and J. E. Morazain, General Superintendent, Quebec District, returned to Quebec Nov. 1 after a trip over the line between Quebec and Cochrane, Ont.

L. P. Thornton, Assistant Superintendent of Colonization, C.P.R., Calgary, Alta., and Mrs. Thornton, sailed from Montreal on the C.P.R. s.s. Montrose, Oct. 26, for England, where he will spend the winter lecturing on Canada.

Sir Henry Thornton, President, Canadian National Rys., has been elected a member of the Association of Railway Executives' executive committee in New York.

Mrs. Timmerman, wife of H. P. Timmerman, formerly Industrial Commissioner, C.P.R., returned to Montreal, Nov. 3, on the s.s. Melita after spending several months in Europe.

J. H. Webb, C.P.R. Passenger Agent, Southampton, Eng., died there Oct. 19 after a short illness, aged 41. He entered the company's service in 1902 in the freight department at King William St., London, and was transferred to the Passenger Department at Charing Cross, staying there until the war, after which he was appointed chief clerk in the passenger department at the Liverpool office, being transferred to the Southampton office, Nov., 1922.

John Whittaker, chairman of Brotherhood of Railway Trainmen's grievance committee, and chairman of the Canadian National Rys. Insurance and Provident Society, London Division, died at his home in Windsor, Ont., Nov. 19.

Wm. A. Wilson, at one time General Canadian Freight Agent, New York Central & West Shore Railroads, died suddenly in Toronto, Nov. 11. As President, Fenian Raid Veterans of 1886, he was at their head, for a parade past the Governor General, when he collapsed, and died in a few minutes. He was born at Niagara Falls, Ont., in 1848, and commenced railway work in 1863 at Port Dalhousie, Ont., on the Welland Ry., now a part of the G.T.R., where he worked in the flour shed, learning telegraphy in his spare time. In Jan. 1865 he entered the Provincial Telegraph Co's service at St. Catharines, Ont., and was transferred to Toronto in April, 1886. On June 1, 1886, he went on service with the Toronto Naval Brigade, during the Fenian Raid troubles, but after 10 days was transferred to the Montreal telegraph office, on military service, remaining there after the corps was dismissed until November, when he entered the military school, passing out of it Feb. 14, 1867, with a second class certificate. On March 4, 1867, he entered the G.T.R. service at the Toronto locomotive house, and shortly afterwards was removed to Toronto union station, where he was relieving agent from 1869 until Aug. 1870, when he went to Sarnia as operator and ticket agent, remaining there nearly 6 years. On June 1, 1876, he was appointed Travelling Freight Agent, G.T.R., and on Nov. 1, 1876, was appointed Agent of the Hoosac Tunnel line, a New York Central organization operating over the Great Western, Canada Southern, Lake Shore and other connections in the west, via the then nearly completed Hoosac tunnel, to points in New England. He remained with that line until the N.Y.C. abandoned it in March, 1884, when he

was appointed Canadian Agent of the New York, West Shore & Buffalo Rd. That office was abolished in May, 1896, and he was appointed Division Freight Agent at Buffalo, having charge of Canadian business also, remaining there until May 1, 1901, when he returned to Toronto as General Canadian Freight Agent, New York Central & West Shore Railroads, continuing in that position until his retirement on July 31, 1917, after 54 years of railway service.

The Gaspé Peninsula Railways Situation.

A public meeting was held at New Carlisle, Que., Oct. 30, at which Sir Henry Thornton, President, Canadian National Rys., was present, to discuss the problem of the railway service provided along the Gaspé peninsula by the Quebec Oriental Ry., and the Atlantic, Quebec & Western Ry. between Matapedia Jet., New Carlisle and Gaspé. It is reported that after hearing the views expressed by the representatives of the various parishes and municipalities represented, Sir Henry stated that the question of taking over the two railways by the C.N.R. must be decided from the point of view of revenue in sight; that he was impressed with the 'apparent general prosperity of the country and its natural advantages, and would examine into the merits of the case and see that full justice was done to the area. A resolution was unanimously adopted asking for the incorporation of the two railways in the C.N.R. System.

Freight Car Condition and Supply.

The most outstanding feature of the Railway Association of Canada's report covering freight car condition and supply on Canadian railways as of Nov. 1, is the large car shortage reported. On that date there were demands for 1,493 more cars than could be supplied. This compared with a shortage of 502 on Oct. 1, and 553 on Sept. 1. Out of 199,255 freight cars on line, there were 11,371, or 5.7%, in bad order, so that evidently the shortage cannot be ascribed to there being an unduly large number of cars in need of repairs, as it is commonly considered that if a railway has no more than 7% of its freight equipment in bad order it is doing well.

On the U.S. class 1 roads, there were 155,637 freight cars, or 6.9% of the total on line, in need of repairs on Oct. 15. This was an increase of 4,305 over those in need of repairs on Oct. 1, at which time the bad order percentage was 5.7.

Despite record loadings of revenue freight, the U.S. class 1 railways reported a surplus of 23,895 freight cars of all kinds, and a shortage of 4,317 box cars and 3,250 coal cars.

Further details of the car supply and condition situation in Canada and the U.S. for some months past are given elsewhere in this issue, under "A.R.A. Efficiency Programme Results and Canadian Comparisons."

Fort William Car Building Plant.—A recent press report stated that the Canadian National Rys. would probably take over the Canadian Car & Foundry Co.'s car building plant at Fort William, Ont. G. E. Smart, Chief of Car Equipment, C.N.R., is credited with having said in Montreal, on Nov. 19, that the matter had not been considered, and that, as far as he knew, there was no likelihood of any such action.

Transportations Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian National Rys.—A. W. ATKINS, heretofore shop foreman at Capreol, Ont., has been appointed Locomotive Foreman there, vice R. Currie, resigned.

J. BAIN, heretofore Superintendent, Bridgewater Division, Atlantic Region, which has been merged with the old Halifax Division into the new Halifax Division, has been granted leave of absence, on the expiry of which he will be pensioned.

R. A. BLACK, heretofore Division Engineer of the former Halifax Division, Atlantic Region, at Truro, N.S., has been appointed Division Engineer of the new Halifax Division, into which the former Bridgewater Division has been merged, and has been transferred to Halifax.

JAMES CUMMINGS, heretofore night charge hand, Point du Chene, N.B., has been appointed Night Locomotive Foreman at St. John, N.B., vice Geo. Crawford, placed on the Provident Fund.

W. E. DUPEROW, Passenger Traffic Manager, Central Region, Toronto, has, it was announced on Nov. 7, been given two months leave of absence. The work of his office is being carried on under his name, in charge of H. C. Bourlier, General Passenger Agent, Central Region. He will spend his leave in western Canada, including the Pacific coast.

J. T. HALLISEY, heretofore Superintendent of the former Halifax Division, Atlantic Region, at Truro, N.S., has been appointed Superintendent of the new Halifax Division, composed of the former Halifax and Bridgewater Divisions, and has been transferred to Halifax, N.S.

H. L. McELLINEY, heretofore Bridge and Building Master of the former Halifax Division, Atlantic Region, at Truro, N.S., has been appointed Bridge and Building Master of the new Halifax Division, composed of the former Halifax and Bridgewater Divisions, and has been transferred to Halifax.

A. E. PLANT, heretofore acting Comptroller, Atlantic Region, has been appointed Comptroller, Atlantic Region. Office, Moncton, N.B.

L. H. ROBINSON, heretofore Division Engineer of the former Bridgewater Division, Atlantic Region, which has been merged into the new Halifax Division, is, for the present, acting as Assistant Division Engineer, and has been transferred to Halifax.

L. J. SAULNIER, heretofore Bridge and Building Master, former Bridgewater Division, Atlantic Region, at Bridgewater, N.S., has been appointed Assistant Bridge and Building Master there, H. L. McElhiney having been appointed Roadmaster of the new Halifax Division, composed of the former Halifax and Bridgewater Divisions.

Canadian Pacific Ry.—J. RANKIN, heretofore General Agent at Yokohama, Japan, has been transferred to Kobe, as General Agent for Japan. The other officials transferred from Yokohama to Kobe are G. E. Costello, General Agent, Passenger Department; M. Fitzgerald, Special Representative; and E. Hospes, Passenger Agent. H. E. Hayward, Agent, and A. M. Parker, Passenger Agent, who were at Kobe before the Yokohama disaster, are remaining there in their former capacities. The Kobe office is at 1 Bund.

H. TAYLOR is stated in a London. Eng., cablegram, to have been appointed Passenger Agent at Southampton, Eng., vice J. H. Webb, deceased.

W. R. THOM, chief clerk, City Ticket Office, Calgary, Alta., has been appointed City Ticket Agent at Los Angeles, Cal., vice C. C. Sheldon, resigned.

E. W. TRAVIS, heretofore summer ticket agent at Banff, Alta., has been appointed City Ticket Agent at San Francisco, Cal., vice A. P. Villain, who resigned to become District Passenger Agent there for United States Lines, Managing Operator for U.S. Shipping Board.

Esquimaux & Nanaimo Ry.—L. H. SOLLY, Land Agent, Victoria, B.C., has been superannuated.

Minneapolis, St. Paul & Sault Ste. Marie Ry.—C. T. JAFFRAY, President, First National Bank of Minneapolis, and one of the M., St. P. & S. S. M. R. directors, has been elected President, succeeding G. R. Huntington, deceased, the appointment to become effective Jan. 1, after which he will devote his whole time to the railway's affairs.

Freight and Passenger Traffic Notes.

The Pacific Great Eastern Ry.'s live stock bill of lading has been approved by the British Columbia Minister of Railways.

The Vancouver Harbor Commissioners' Terminal Ry.'s freight mileage tariff, C.R.C. 1, has been approved by the Board of Railway Commissioners.

The C.P.R. has opened for traffic the Interprovincial & James Bay Ry. extension from near Kipawa, Ont., to mile 53, in Temiscaming County, Que.

The Alberta and Manitoba Governments applied to the Board of Railway Commissioners recently for a reduction of freight rates on alcoholic beverages.

The Board of Railway Commissioners has refused an application by residents of Lewvan, Sask., for an order for the establishment of a daily passenger train service each way, from Weyburn to Regina, on the Canadian National Rys. in place of present service.

The C.P.R. is reported to have carried 505,659 cans of milk into Montreal this year, up to Sept. 30. The cans are collected on the various lines up to within 150 miles from Montreal, and are handled in that city at special platforms erected at Windsor St., Place Viger, and Mile End stations.

The C.P.R. started, on Nov. 16, operating daily a 10-compartment car, in addition to regular equipment of standard drawing room sleeping cars, on train 801, leaving Toronto union station at 5 p.m. for New York, which also carries a through standard drawing room sleeping car, Toronto to Boston.

The C.P.R. announces that during December, January and February, winter excursion fares will be put in force from Dec. 1 to Jan. 5 on passenger traffic originating in Alberta and Saskatchewan, for the following U.S. points: Cedar Rapids, Chicago, Council Bluffs, Des Moines, Dubuque, Fort Dodge, Kansas City, Marshalltown, Milwaukee, Omaha, St. Louis, Sioux City, Waterloo, Iowa; good to return until April 15, 1924. Similar arrangements will be in force from

Victoria and New Westminster, B.C., Manitoba (Winnipeg and west), Saskatchewan and Alberta, to Vancouver, Watertown, S.D. Return tickets will be good 3 months from date of sale.

The Canadian National and Canadian Pacific Railways' western lines will put on sale from Dec. 1 to Jan. 5, 1924, inclusive, first class home visitors' tickets to points in eastern Canada east and south of, and including, Sudbury and Cochrane, Quebec, New Brunswick, Nova Scotia and Prince Edward Island, transit to be made 10 days from date of sale; and good for return within 15 days, after validation, within 3 months of date of sale. The fare will be one fare and a third for the round trip. Extension privileges and stop over privileges at certain points will be permitted. Westerners intending to spend part of the winter in Europe may avail themselves of the fare and a third for the round trip to St. John and Halifax.

The Canadian National Rys. will operate special trains from Toronto to Halifax, on Dec. 7, running through to the ships' sides for the sailing of three trans-Atlantic liners, on Dec. 9; and to fit in with the sailing of other trans-Atlantic liners from Halifax, will run through cars from Toronto, leaving Dec. 12, Dec. 13 and 14. The three ships sailing Dec. 9 will be the Cunard Ansonia for Liverpool via Queenston; the White Star-Dominion Line Doric for Liverpool via Belfast, and the Anchor-Donaldson Line s.s. Saturnia for Glasgow. The through cars will be run in connection with the sailings of the White Star Line Pittsburgh for Southampton, Cherbourg and Hamburg, Dec. 14; the White Star-Dominion Line s.s. Canada, for Glasgow and Liverpool, Dec. 15, and the Cunard Line s.s. Andania for Plymouth, Cherbourg and London, Dec. 16.

Freight Car Location Statistics.—The Railway Association of Canada has issued a report on location of freight cars on Canadian railways on Nov. 1, based on returns from the following railways: Algoma Central & Hudson Bay; Canadian National, including Grand Trunk Pacific; Canadian Pacific; Dominion Atlantic; Edmonton, Dunvegan & British Columbia; Kettle Valley; Napierville Jet.; Quebec Central; Quebec, Montreal & Southern; Timiskaming & Northern Ontario; Temiscouata; Toronto, Hamilton & Buffalo, as follows: number of cars owned, 213,362; home cars on Canadian foreign lines, 12,422; home cars on U.S. lines, 38,710; home cars on home roads, 162,230; Canadian owned foreign cars on home lines, 9,595; U.S. owned foreign cars on home lines, 27,430; total cars on lines, 199,255; per cent. on lines to total owned, 93.4; deficiency on lines to total owned, 14,107; home cars in bad order, 10,933; foreign cars in bad order, 438; total cars in bad order, 11,371; per cent. in bad order, 5.7; privately owned U.S. cars on lines, 2,504; privately owned Canadian cars on lines, 1,462.

Steel Rails for Canadian National Rys.—The following orders have been placed recently:—2,000 gross tons, 100 lb. A.R. A.-A. section, from Bethlehem Steel Co.'s Lackawanna plant, for Portland, Me., Division; 10,715 gross tons, 100 lb. A.R. A.-A. section, and 7,073 gross tons, 90 lb. A.R.A.-A. section, from United States Steel Corporation's Illinois steel plant, for Grand Trunk Western Lines; 1,000 gross tons, 85 lb. C.N.R. standard section, from U.S. Steel Corporation's Illinois steel plant, for Duluth, Winnipeg & Pacific Ry. Deliveries are to be made during the first three months of 1924.

Central Vermont Railway Lines in Canada Transferred.

On Nov. 1, the following Central Vermont, 5th District, lines in Canada were transferred to the Canadian National Rys. for operation: Montreal and Province Line Ry., St. Lambert to Frelighsburg, 50 miles; Marieville to St. Cesaire, 8.6 miles; Stanstead, Shefford and Chambly Rd., S.S. & C. Jct. via Farnham to Waterloo, 40.4 miles, a total of 99 miles. The operation of the portion of the latter line from S.S. & C. Jct. to Farnham, 11.6 miles, has been abandoned, and the stations at Versailles and Menardville have been closed. The C.V.R. continues to operate over the Canadian National old G.T.R. line from Montreal to St. Johns, Que., 27 miles. From St. Johns to the international boundary, between St. Armand, Que., and Highgate, Vt., 25.3 miles, it has its own line. The C.V.R. management gave notice on Oct. 29, that from Nov. 1, at 12.01 a.m., 5th District employees would report to and receive their instructions from Canadian National Rys. officials, that the trains would be dispatched from Montreal, and that the status of employees on the district would remain unchanged until further notice.

The lines which have been transferred are now included in the C.N.R. Montreal District and the following C.N.R. officials have jurisdiction over them: W. R. Davidson, General Superintendent; F. A. Rutherford, Superintendent of Transportation; H. C. Swartz, Superintendent of Bridges and Buildings; W. Bibby, Superintendent of Track; J. J. Ginty, Superintendent of Signals; J. J. Connelly, Superintendent, St. Lawrence Division; W. H. McEwan, Chief Dispatcher, St. Lawrence Division; W. Walker, Division Engineer; P. E. Demers, heretofore Trainmaster, 5th District, C.V.R., and Agent at Farnham, is continued in that position on the C.N.R.

Machinery Orders.—The Canadian National Rys. has given the following orders recently: 48 in. 300-ton hydraulic wheel press; electric travelling crane; 96 x 84 x 45 ft. frame plater with motor; no. 5 Beament locomotive frame slotting machine; ER-1 air compressor, H-6 in. compressor; 26 in. crank planer and shaper; axle and journal turning lathe; locomotive cylinder and piston valve boring machine; compressed air after cooler; Pels-Lusef no. 21 universal punch. The orders were divided among John Bertram & Son Co., Canada Machinery Corporation, Canadian Fairbanks-Morse Co., Canadian Ingersoll Rand Co., Canadian Westinghouse Co., Dominion Bridge Co., and Rudel Belnap Machinery Co.

Quebec Bridge Roadway.—It was reported in Quebec, Nov. 19, that negotiations were practically completed between the Dominion and Quebec Governments respecting the construction of a highway section on the Quebec Bridge. It is said that the design of the bridge is such that a roadway could be added when thought necessary, and that estimates which have been prepared show that it could be added at a cost of about \$300,000. The question of the appropriation of the cost of the work between the Dominion and Quebec Governments is said to have been practically decided, and that work will probably be started some time in 1924, and completed in 1925.

The C.P.R. has promised to give \$5,000 towards the \$125,000 which the Royal Jubilee Hospital, Victoria, B.C., is trying to raise for additional buildings.

Canadian Industrial Traffic League's Annual Meeting, Etc.

The Canadian Industrial Traffic League, which is composed of over 100 traffic directors, managers, commissioners, representatives and other officials in charge of traffic for industrial and commercial organizations, has for its objects, as stated in its constitution, to promote a better understanding by the public, provincial and Dominion governments, of the needs of the traffic world; to secure modifications of present laws, regulations and rulings where they are harmful to the free interchange of commerce; to advance fair dealing; to promote, conserve and protect commercial and transportation interests; to co-operate with the Board of Railway Commissioners for Canada, other organizations, and the transportation companies, thus bringing about better conditions.

The annual meeting was held in To-



R. J. Fitzgerald,

Traffic Manager, F. W. Woolworth Co., Toronto, and President, Canadian Industrial Traffic League.

ronto, Nov. 21, the President, W. H. Dickie, Assistant Traffic Manager, Imperial Oil Ltd., being in the chair. Reports from the various committees and a number of other important matters were dealt with. The following officers, etc., were elected: Honorary President, J. E. Walsh, General Manager, Canadian Manufacturers' Association, Toronto; Honorary Vice Presidents, T. Marshall, Manager, Traffic Department, Toronto Board of Trade; J. K. Smith, Manager, Transportation Bureau, Montreal Board of Trade; D. McLean, Manager, Transportation Department, Hamilton Chamber of Commerce. President, R. J. Fitzgerald, Traffic Manager, F. W. Woolworth Co., Toronto. Vice President, W. R. Ingram, Traffic Manager, Swift-Canadian Co., Toronto. Secretary Treasurer, H. W. Blahout, Traffic Manager, Dunlop Tire & Rubber Goods Co., Toronto. Executive council, Alex. Bell, Traffic Manager, General Motors Ltd., Oshawa, Ont.; S. B. Brown, Manager, Transportation Department, Canadian Manufacturers' Association, Toronto; F. W. Dean, Traf-

fic Manager, Steel Company of Canada, Hamilton, Ont.; W. H. Dickie, Assistant Traffic Manager, Imperial Oil Ltd., Toronto; C. LaFerle, Traffic Manager, Maple Leaf Milling Co., Toronto; W. J. McLean, Traffic Department, Massey-Harris Co., Toronto; W. C. Thompson, Manager, Traffic Department, Goodyear Tire & Rubber Co., Toronto. Auditors, G. Burnet, Traffic Manager, Office Specialty Company, Newmarket, Ont.; W. Minty, Traffic Manager, Gunns Ltd., Toronto.

The League held its annual dinner on the evening of Nov. 21, in the Toronto Board of Trade's restaurant, when, in addition to its members, a number of railway officials and others were guests, President Dickie occupying the chair. Prof. Jackman, of Toronto University, introduced the principal guest, S. J. McLean, L.L.B., Assistant Chief Commissioner, Board of Railway Commissioners, who gave a most comprehensive address on the history of traffic regulations, the Board's work, etc. The President elect, R. J. Fitzgerald, moved a vote of thanks to him, which was seconded by Vice President W. R. Ingram, who dwelt on the necessity of thorough education for traffic men.

St. Malo Shops Enquiry.—R. A. C. Henry, Director, Bureau of Economics, Canadian National Rys., who was commissioned recently to make investigations into these railways, began his inquiries at the St. Malo shops, Quebec, Oct. 31. He is reported to have stated that there had been numerous complaints regarding interior affairs at the shops, the nature of which he was unaware, which the Acting Minister of Railways thought should be investigated. He was prepared to hear, under oath, any evidence that might be offered, and to investigate it. At a political meeting in Quebec, Nov. 8, the Quebec Minister of Agriculture stated that the heads of the departments in the shops were men who did not understand French, and that practically the whole of the other men employed at the shops were French. The investigation is being proceeded with by Mr. Henry, the hearings being in camera.

The number of railway accidents throughout Canada, reported to the Board of Railway Commissioners during October, was 342, in which 10 employees and 16 others were killed, and 32 passengers, 263 employees and 78 others were injured. One employee was injured in a highway crossing accident. Included in "others" were 4 persons killed and 55 injured in highway crossing accidents, in which the crossings were protected in 4 cases by bell, in one case by a flagman, in 3 cases by watchmen, and in 3 cases by gates. In 24 of the 32 highway crossing accidents, automobiles were involved, resulting in 2 persons being killed and 49 injured. In 5 highway crossing accidents, pedestrians were involved, 4 being injured and 2 killed, while wagons were involved in 3, with 3 persons injured.

Canadian National Rys. Directorate.—An Ottawa press dispatch of Nov. 16 says that A. J. Young, formerly in the wholesale grocery business at North Bay, Ont., and a former President of the Ontario Liberal Association, now of Toronto, and George Wilkie, K.C., of Toronto, are among those most prominently mentioned for appointment to fill the vacancy on the C.N.R. board caused by R. P. Gough's resignation.

Canadian National Railways Construction, Betterments, Etc.

Branch Line Construction.—An Ottawa press dispatch states that the Government will introduce a bill next session for the construction of C.N.R. branch lines, in place of the one which was rejected by the Senate last session. It says that, while it is certain that legislation will be brought in, an undecided point is as to whether all the projects originally incorporated will be included, and also whether it will follow the initial form.

Atlantic Region Tie Contracts.—A press report states that contracts for hardwood ties have been let to J. W. MacDonald, Campbellton, N.B.; J. H. Fleming, Woodstock, N.B., and H. Grier, Montreal.

Atlantic Region Flood Damage.—We have received advices as to the extent of the damage done to the lines by the heavy rains and subsequent floods, beginning Sept. 30. The damage was centered particularly on the New Glasgow Division between Truro and Sydney, N.S.; and more or less damage to the track was done on the Bedford, Scotia, Sunny Brae, Pugwash and Oxford Subdivisions. On the Sydney Subdivision the most serious damage consisted of the washing out of a fill at mile 70.5, to the depth of 4 ft., and another fill at Bras d'Or to a depth of 3 ft. On Mulgrave Subdivision, damage was reported from 23 separate points. At mile 4.04, the toe of the side hill cut and embankment slipped for a length of 200 ft., requiring 250 yards of material to support the bank, for the time being; a crib or dyke 100 ft. long will have to be built at the upper end of the location to divert the water from the foot of the track. About 600 ft. of embankment at mile 6.1, requiring 2,500 yards of gravel and 400 yards of cinders for a fill, the relining of the track, building of a stone dyke at the upper end to deflect the water, and some rip rap work. In the vicinity of mile 16, washouts, ranging from 10 to 15 ft., were repaired at 8 points. Similar washouts occurred at mile 13.2, east end of Stellarton yard, miles 42, 42.1, 52 (1,000 ft. long), 57.2, 57.4, 69.3, 70.3, 76.2 (105 ft. concrete slab bridge carried away), 78, 79, at Brierley Brook siding (about 1,000 ft. of fill washed out), 85, 86.5, 88.5 (about 1,500 ft. of bank washed out), 94.9 (about 800 ft. of bank washed out), 104.6 (about 600 ft. of bank washed out), 104.8 (about 300 ft. of bank washed out), 107.6 and 110.8. Several mud slides near Folley, on Springhill Subdivision, resulted in train 4 being delayed about 10 hours. All repairs at the various points were completed as quickly as possible, except the bridge at James River, where a temporary structure was made by driving piles, the work being completed in time to allow the first passenger train to cross on Oct. 6, at 2.15 p.m.

St. John Diamond Renewal.—A new manganese steel diamond crossing is reported to have been placed at Mill St., St. John, N.B.

Alma & Jonquieres Ry. Junction.—The Board of Railway Commissioners has approved location for a freight station at the Alma & Jonquieres Ry. junction with the C.N.R., at mile 199.6, Jonquieres Subdivision, near Hebert, Que.

Three Rivers-St. Barnabe Branch.—We are advised that the management knows nothing about a proposal to build a branch from St. Barnabe to Three Rivers, Que., in connection with the har-

bor improvement plan at the latter place. (Nov., pg. 537.)

East Moira River Bridge.—The Board of Railway Commissioners has authorized the operation of trains over the bridge at Stoco Lake, East Moira River, Hungerford Tp., Hastings County, Ont.

Bridgeburg Terminals.—A press report states that plans are under consideration for the enlargement of the terminal yards at Bridgeburg, Ont., and that work that is at present done in the yards at Black Rock, N.Y., will be transferred to Bridgeburg. It is also reported that an interlocking system has been installed on the International Bridge, which connects Bridgeburg and Black Rock. The question of the enlargement of the bridge or the erection of a new one is also stated to be under consideration.

Stratford Locomotive House.—The eastern entrance and a considerable portion of the eastern end of the locomotive house at Stratford, Ont., were destroyed by fire Oct. 28. The building is an old one, largely of frame.

St. Thomas Shops.—We are advised that proposals for the improvement of the C.N.R. shops at St. Thomas, Ont., used by the Wabash Rd., do not include the erection of new shops, as stated in a press report. The work to be done will consist of improvements to the locomotive house fittings. The report stated that \$92,000 had been provided in the estimates for 1924 for this purpose. Such estimates would, of course, have to be approved by Parliament.

Nipissing Division Bridges.—The Board of Railway Commissioners has authorized the operation of traffic over the bridges at Laronde River, mile 74.7, Alderdale Subdivision, and at the Little Madawaska River, Deacon Tp., Nipissing, Ont., Nipissing Division, Northern Ontario District, Central Region.

Longlac-Nakina Cutoff.—The cutoff between Longlac and Nakina, Ont., 29.4 miles, described in Canadian Railway and Marine World for February, pg. 71, is practically completed, only a few miles of ballasting and surfacing, and some train filling, remaining to be done. At the time of writing (Nov. 20), the railway management is employing about 600 men on ballasting and track lifting. The greatest number of men employed at any one time by the contractors for the grading, Foley Bros. & Hervey, was about 1,200. Tracklaying was completed early in November, about five-sixths of it having been laid southward from Nakina. Untreated ties and 85 lb. steel were used. The track laying was done, and the ballasting and surfacing are being done, by railway forces, and at the time of writing the contractors have taken out a large part of their outfit, although they still have some men employed trimming the grade. Ballast is being drawn from three pits, two between Longlac and Nakina, one of which is supplying material for train filling only, and from a pit on the Longlac Subdivision. Ballasting will be completed and the track placed in condition for operation before the end of this year. As stated in a preceding issue, the intention is to remove the terminal facilities from Grant, 15.9 miles east of Nakina, to Nakina, and the yard at Nakina is nearing completion, as is also a 12-stall locomotive house there. Following the completion of these facilities, the yard at Grant will be taken up and terminal

operation transferred to Nakina. At Longlac, a small locomotive house and a few yard tracks will be provided. The construction of this cutoff, which connects Longlac, 480.7 miles northwest of North Bay, on the former Canadian Northern Ontario Ry., with Nakina, 272.25 miles west of Cochrane on the former National Transcontinental Ry., was carried on under the supervision of R. A. Baldwin, District Engineer of Construction, C.N.R., with Capt. K. G. Polylank, as Division Engineer of Construction, in direct charge. The resident engineers were: C. H. N. Spafford, H. L. Benson, W. B. Redman, and Hector Macneil. O. W. Swenson, Secretary-Treasurer, Foley Bros., was in charge of the work for the contractors.

Kashabowie Subdivision Track Revision, etc.—The Board of Railway Commissioners has authorized the opening for traffic of the second track on the main line between miles 2.74 and 6.10; the line between miles 6.1 and 7.1; and the Rowan revision from Conmee Jct., mile 36.56, to old mile 38.42, all Kashabowie Subdivision, Port Arthur Division, Western Region.

Roblin Second Track.—The Board of Railway Commissioners has authorized the construction of a second track across the east and west road allowance between Secs. 4 and 9, Tp. 26, Range 28, west principal meridian, at Roblin, Man.

Regina Hotel.—In the early days of the Grand Trunk Pacific Ry. construction, an agreement was entered into with the city of Regina, Sask., for the erection of an hotel under terms which were confirmed by the Saskatchewan Legislature in 1912-13. The war and the consequent financial situation prevented the agreement being carried out, and nothing was heard of the project until recently. A. E. Warren, General Manager, Central Region, C.N.R., was present at the Regina City Council meeting, Nov. 9, when the matter was discussed, and plans for the proposed hotel, which it is estimated will cost about \$1,000,000, were presented, it being stated that if the plans were approved, an amount would be included in the 1924 estimates. The council passed a resolution on Nov. 15, as far as it could possibly do so, accepting the plans as complying with the 1912 agreement, and agreeing to amend the bylaw in such details as may be necessary.

Regina to Northgate, Sask.—A press report states that during the summer certain work was done on the Regina-Northgate Branch, and that trains are running through Lampman, Sask., doing away with Minard station.

Gravelbourg Extension.—The Board of Railway Commissioners has amended its order of Oct. 13, 1922, respecting the opening for traffic of the extension from Gravelbourg, Sask., mile 79, to Hodgeville, mile 109, by providing that the speed of trains shall not exceed 15 miles an hour.

North Battleford Branch.—The Board of Railway Commissioners has amended its order of Nov. 28, 1921, respecting the opening for traffic on the extension of this branch from Turtleford to St. Walburg, Sask., mile 57 to 77.8, by providing a 12 mile an hour limit to the speed of trains.

The Atchison, Topeka & Santa Fe Ry. has given a contract for erecting an apprentice school building, at San Francisco, Cal., to cost \$80,000.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta & Great Waterways Ry.—The Alberta Minister of Railways took members of the Legislature and others over the line to the present terminus at Waterways recently, to show the improvements made during the three years the Government has had control of the line, and to ascertain what further work is necessary.

Alma & Jonquiere Ry.—J. B. Duke, New York, President, Quebec Development Co., which is building a large hydro-electric development plant at the Grande Discharge of Lake St. John, Que., necessitating the construction of a railway from Hebertville to the site, 10 miles, visited the work recently. (Sept., pg. 439.)

Burrard Inlet Tunnel & Bridge Co.—The contract entered into between this company and the Northern Construction Co. Ltd., and J. W. Stewart, includes the complete construction of a single track railway and highway bridge across the second narrows in Burrard Inlet, Vancouver, B.C., together with the approaches and overhead crossing of the C.P.R. from Cariboo St., Vancouver, to the bridge, and on the North Shore, a road and railway across the Indian reserve and a bridge to consist of three 50 ft. plate girder spans across Lynn Creek. The bridge proper will consist of a 185 ft. bascule span over the navigable portion of the channel, at the south end of which will be a 150 ft. steel span, and on the north end, a 300 ft. steel span. The bascule span is being designed by the Strauss Bascule Bridge Co., but the designing of the other steel work has not yet been settled. These steel spans will be carried on piers, consisting of groups of cylinders of concrete resting on a foundation of piles driven to rock. The floor of the bridge will be 15 ft. above extreme high water. The approaches will be built of creosoted piling and timber trestle, that on the south side consisting of 10 bents, and that on the north side consisting of 34 bents. The highway will have a descending gradient of 5% from Vancouver to the bridge proper, and a similar gradient from the end of the bridge proper to the shore line. The railway gradient from the north shore to the bridge will be 0.50%. We are officially advised that some work in the way of clearing, etc., has been started. A press report of Nov. 9, stated that the contractors had had a scow built for pile driving, and that 6 of the concrete cylinders for the piers had been completed. Wm. Smaill is the contractors' Chief Engineer.

The company is reported to be negotiating with the B.C. Government to connect the Pacific Great Eastern Ry. with the northern end of the bridge. The question of the loading of the bridge was, it is reported, discussed, the Government being desirous of having its strength increased. (Nov., pg. 536.)

American Niagara Bridge Co.—The American Niagara Rd. Co., which is the general company proposing to build a bridge across the Niagara River, from Black Creek on the Canadian side, to Grand Island, thence to the United States shore, with railway connections, has been authorized by the Interstate Commerce Commission to build a line from the New York Central Rd. at Tonawanda, N.Y., across the east branch of the Niagara River and Chippawa channel to the International Boundary at the centre of the

bridge across the river, connecting there with the Canadian Niagara Bridge Co.'s undertaking, which includes a railway from the Michigan Central Rd., at Welland, to the centre of the bridge across the river. (Nov., pg. 586.)

Canadian Puget Sound Lumber & Timber Co., will, a press report says, build a logging railway, 40 miles long, from Sooke Harbor to Port Renfrew, Vancouver Island, B.C.

Esary Timber Co.—We are advised that this company, representing some United States lumber interests, has secured a large area of timber in the vicinity of Horne Lake, Vancouver Island, and is building a logging railway from Deep Bay southwesterly to Horne Lake, about 4 or 5 miles. It is expected that a mill will be built at Deep Bay.

Esquimalt & Nanaimo Ry.—The branch line from 2 miles west of Port Alberni, on the line to Alberni, to Great Central Lake, 11 miles, construction of which was started in 1919, will, a press report states, be completed and put in operation early in 1924. Grading has been completed, and track was laid to Stamp River, 3.75 miles, in 1922.

The railway span of the new Johnson St. bridge, Victoria, was put into use Oct. 25, thus making the beginning of the last stage of construction, viz.: the raising of the grade on lower Johnson St. to conform with the bridge level. (Sept., pg. 439.)

Grand Lake Ry. Co.—Application will be made to the Quebec Legislature to incorporate a company, with this title, to build a railway from near the Bell River, on the Canadian National Rys., to near Twenty-one Miles Bay, Grand Lake Victoria, on the Ottawa River; to operate ships and engage in a general transportation business on the waterways south of the National Transcontinental Ry., between Nottaway (Senneterre station), mile 399.9 from Quebec, and Cunus, mile 433.2 from Quebec, and the Ottawa River, and elsewhere on the Ottawa River above Quinze River. The applicants are Hon. George Bryson, Fort Coulonge, Que.; Hon. George Gordon, North Bay, Ont.; J. B. Fraser, G. E. Fauquier, Ottawa; A. J. Nesbitt, P. A. Thompson, Montreal. A press report states that the projected railway will be located a short distance from the water power on the Megiscane River, leased recently by the Tobin interests, where a pulp mill is proposed to be erected within the next two years, and that it will cross a colonization centre, and a large lumbering area.

Pacific Great Eastern Ry.—The British Columbia Premier, in addressing the Legislature on the finances and prospects of the Pacific Great Eastern Ry., on Nov. 6, stated that investigations were being made to see if it is possible to do away with the difficulties on a section of the roadbed from 7 miles south of Quesnel to the north of the Cottonwood River, 25 miles, on which there are several sections of slowly sliding masses of earth, which make maintenance very difficult and expensive, and that a diversion of track was being looked into, but nothing would be done without the fullest investigation. In regard to an extension to the Peace River district, the Government was confronted with the construction of 300 miles of line at a minimum, at a roughly estimated cost of about \$25,000,000. It was considered advisable to refrain from proposing that such construction be undertaken until such time as all

other possible solutions of the situation have been exhausted. Representations were made to the Canadian National Railways and to the C.P.R., and these two railways are investigating the possibilities of the Peace River country. (Nov., pg. 536.)

Quebec & Chibougamou Ry.—A press report states that the company proposes to make an early start on the construction of its projected railway, that the section on which construction is likely to be started will be at the northerly end of Lake St. John, with a view of completing a belt line round the lake, connecting with the Canadian National Rys. Quebec & Lake St. John line, and the Roberval-Saguenay Ry. There have been several similar announcements before which have not materialized.

Timiskaming & Northern Ontario Ry.—We are officially advised that on Nov. 1, the T. & N. O. R. Commission took over from Grant Smith & Co. and MacDonnell, Limited, the contract for the construction of the extension of the line from Cochrane to the Abitibi River opposite New Post, mile 70. The work to be done by the Commission consists of such ballasting and train filling as has not been completed between Cochrane and mile 44.4, and tracklaying, ballasting and train filling from between mile 44.4 and 70. It is not the intention to proceed with any of this work during the winter. On the section from Cochrane to mile 44.4, the Commission put a train service in operation, Nov. 1, as far as Island Falls Jct., mile 43, the service consisting of a mixed train leaving Cochrane on Tuesdays, Thursdays and Saturdays, at 9 a.m., and return, leaving Island Falls Jct. at 1.30 p.m. on the same days. While this service is being given by the operating department, the maintenance of the track will remain with the Engineering Department until the ballasting, trestle filling, etc., are completed.

The Board of Railway Commissioners has authorized the building of a bridge over Blanche River, mile 19.5, on the extension from Swastika to the Kirkland Lake mining areas.

A press report states that, acting on engineers' reports on three suggested routes for a branch line to the South Lorrain silver mining district, the Commission has decided to have a location survey made for a line from Cassidy siding, 3 miles south of Cobalt.

A press report states that contracts have been let for ties as follows: J. Clark, 25,000; J. Mongeon, 100,000; Grant & Dunn, 75,000; P. McCool, 100,000; Harrie Tie & Lumber Co., 50,000. (Nov., pg. 536.)

Vancouver Harbor Ry.—The Board of Railway Commissioners has authorized the Vancouver Harbor Commissioners to open for traffic, temporarily, the portion of its terminal railway between the Dominion Government elevator and the Ballantyne pier. This piece of track is a mile long, and connects with 2 miles of tracks on Ballantyne pier, making 3 miles of new tracks placed in operation Oct. 19. The Commissioners also own about 2 miles of tracks partly on Granville Island, which were electrified in 1922, and are operated under an agreement by the British Columbia Electric Ry. (Aug., pg. 376.)

The Victoria Lumber & Manufacturing Co. is reported to have made considerable progress with building its logging railway along the south shore of Cowichan

Lake, Vancouver Island, in the direction of the Robertson River timber areas. Several miles of track are reported to have been laid from Cowichan Lake station, on the Esquimalt & Nanaimo Ry.

Grain Rate Reductions in United States Opposed by Railways.

As stated in Canadian Railway and Marine World for November, U.S. President Coolidge suggested to President Rea, of the Pennsylvania Rd., that a reduction in export wheat rates, possibly accompanied by an increase in the export coal rates to bring them to the domestic rate levels, would be desirable. Although this was apparently only an unofficial suggestion, a committee of railway executives met in New York on Oct. 30 and drafted a reply to the President's suggestion as follows: "Such a reduction in rates will not lessen the competition with foreign countries, notably the Argentine and Canada, from which latter countries exports are far greater in volume than from the U.S., and therefore will not stimulate the movement from this country, particularly since Canadian railways have always concurrently adjusted their rates on export wheat with respect to those currently carried by the U.S. lines, and there is no reason to believe they will make any exception in this instance. It is impracticable to confine the proposed reductions to eastern roads, as at one time thought possible, as inevitably the western roads would be forced to make corresponding reductions on wheat for export through the Gulf and Pacific coast ports, because of the reduction on eastern roads to the Atlantic seaboard. It is generally conceded that the western roads are in no position to stand any reduction whatever in their revenues. It would not be practicable to confine the proposed reductions to wheat alone, as corresponding reductions would inevitably follow on flour, other grain, and their products. The proposed reduction in export wheat rates would result in a material loss of revenue to all the carriers, many of which, in the east as well as in the west, are not in position to earn such a return as will re-establish credit and attract the capital necessary to provide adequate transportation facilities."

The railway executives approached the President to make known their decision on his suggestion, but, apparently on account of his desire not to appear to be interfering in a matter within the Interstate Commerce Commission's province, they were referred to the Commission, to which they presented the foregoing statement.

The Interstate Commerce Commission had announced, on Oct. 16, that on the then record, it considered rates on grain, grain products and hay in the western U.S. to be reasonable, but on the same day, in response to much agitation by various agricultural associations, it issued an order for a general investigation into rates on grain and grain products. Hearings have been set for Dec. 5, at Spokane, Wash.; Dec. 11, at San Francisco, Cal., and Dec. 17, at Phoenix, Ariz. Proposals were made to the Commission by various industrial associations throughout the U.S. that an investigation be held into rates on basic commodities generally, but on Nov. 7 the Commission refused to do this.

The agricultural associations applying to the Commission for grain rate reductions cited the lower rates in Canada as one of the reasons for considering grain rates in the U.S. unduly high.

Traffic Orders by Board of Railway Commissioners.

Freight Rates on Gypsum Rock.

34,341, Oct. 20.—Re application of Canada Cement Company, Montreal, for an order adjusting rates on gypsum rock, in carloads, from Caledonia, Ont., to Montreal and Ottawa, on a basis not to exceed the rates now in effect on crushed stone: Upon reading what is filed in support of the application, and the report of its Chief Traffic Officer, the Board orders that the Michigan Central Rd. Supplement 69 to Tariff C.R.C. no. 3,074, effective Nov. 3, 1923, in so far as it relates to rates on gypsum rock, be suspended, pending a hearing by the Board.

C.P.R. Standard Freight Tariff.

34,344, Oct. 22.—Re application of Canadian Pacific Ry., under sec. 330 of the Railway Act, 1919, for approval of its Standard Freight Tariff C.R.C. no. E-4097: Upon the report and recommendation of its Assistant Chief Traffic Officer, the Board orders that the said tariff be approved.

Football Excursion Rates for Kingston, Ont.

34,345, Oct. 22.—Re application of Queen's University, Kingston, Ont., for an order extending to the University and to the City of Kingston the same privileges in the matter of excursion rates on the railways in connection with the annual football games, as are enjoyed by Toronto, Montreal, and other large cities: Upon hearing the application in Ottawa, Oct. 16, 1923, Queen's Athletic Board of Control, Queen's University Student Body, the University of Toronto, the City of Kingston, the Kingston Board of Trade, the Canadian National and Canadian Pacific Railways, and certain commercial interests of the City of Kingston being represented, and what was alleged, the Board orders that the application be refused.

Express Rates on Homogenized Cream.

34,374, Oct. 27.—Re application of Saskatchewan Creamery Co., Moose Jaw, and Saskatchewan Co-operative Creameries, Regina, for a ruling as to whether pasteurized cream includes homogenized cream, and whether special commodity rates by express apply on homogenized cream: Upon hearing the application at Ottawa, April 17, at Regina, July 12, and at Winnipeg, July 16, the applicants, the Express Traffic Association of Canada, and the Crescent Creameries being represented at the hearing, and what was alleged, the Board declares that express commodity rates on cream are not applicable to homogenized cream.

Freight Rate on Soda Ash.

34,400, Oct. 31.—Re complaint of Guy Tombs, Limited, Montreal, against rate of 37c per 100 lb. on carload of soda ash shipped from Walkerville, Ont., to Mille Roches, Ont., as contrasted with a rate of 35c contemporaneously in force to Windsor Mills, Que.: Upon reading what is filed in support of the complaint, and on behalf of the Canadian National Ry. Co., the report of its Chief Traffic Officer, and its appearing that the C.N.R. Co. improperly indicated Windsor Mills as competitive in its tariff C.R.C. no. E-4746, effective Aug. 1, 1922, the Board declares that the said rate of 37c per 100 lb. on the shipment complained against was in violation of the long and short haul clauses of the Railway Act, 1919.

Public Works Department Appointments.

Kenneth M. Cameron, heretofore Assistant Chief Engineer, Public Works Department, Ottawa, has been appointed Chief Engineer, succeeding the late A. St. Laurent. After matriculating, he graduated at the Royal Military College at Kingston, in June, 1901, and in April, 1902, graduated from McGill University, Montreal. From April to Dec., 1903, he was in the C.P.R. Chief Engineer's office, and subsequently was with the Canadian Niagara Power Co.; lecturer at McGill University, Montreal, with the Pennsylvania Rd.; Bar Harbor & Main River Power Co., Maine; Ambursen Hydraulic Construction Co., Wyoming; Smith, Kerry & Chase, consulting engineers, Toronto; Dominion Public Works Department, at London, Sherbrooke and Ottawa, to Sept., 1918, when he was appointed Assistant Chief Engineer. R. de B. Corriveau has been appointed Assistant Chief Engineer of the Department. He was born at West Hoboken, N.J., Jan. 24, 1877, and graduated from McGill University, Montreal, in 1900.

R. C. Desrochers, who has been Secretary of the Public Work Department at Ottawa since July 1, 1910, has been appointed Assistant Deputy Minister, which position had been vacant since Feb. 1922, when Arthur St. Laurent (since deceased) was appointed Chief Engineer. Lewis H. Colman, heretofore Assistant Secretary of the Department, has been appointed Secretary of the Department. These appointments were made by the Civil Service Commission.

Canadian Pacific Railway Land Amortization Plan.

Canadian Railway and Marine World for June published the announcement by E. W. Beatty, President, C.P.R., of the company's new policy in regard to its land contracts, under which all land contracts were to be rewritten and the indebtedness spread over 34 years on an amortization plan. A meeting of contract holders was held in Calgary, Alta., Oct. 30, at which a resolution was passed approving of a proposal adopted previously to refuse to sign the new contract, on Nov. 1, as required, and making a request for 20-year contracts, with interest payable on arrears only and present relief on certain payments, with a contract limit of \$25 an acre, exclusive of improvements. The meeting decided to oppose any proceedings that might be taken to enforce the new contract in the courts and to carry the matter to the Imperial Privy Council if necessary. A fund of \$12,000 is reported to have been pledged by contract holders to protect their interests.

Grain Elevator for Edmonton.—The Dominion Parliament at its last session appropriated \$200,000 towards the construction of a grain elevator at Edmonton, Alta. Canadian Railway and Marine World is officially advised that C. D. Howe & Co., Port Arthur, Ont., have been instructed to prepare plans and specifications for an elevator of 2,500,000 bush. capacity.

St. John's Ambulance Association.—Sir Henry Thornton, President, Canadian National Rys., on Nov. 13, presented the medallions awarded members of the office staff at Montreal, in the third year examinations in first aid work.

Canadian National Railways Atlantic Region Division Changes.

Canadian Railway and Marine World for October gave full particulars of changes which it was proposed to make by merging the Bridgewater Division of the Atlantic Region with the Halifax Division, under the latter name, abolishing the Bridgewater Division headquarters at Bridgewater, N.S., and placing the whole new division under J. T. Hallisey, Superintendent of the old Halifax Division, transferring him from Truro to Halifax. At that time we published a circular issued by W. U. Appleton, General Superintendent, on Sept. 24, and approved by L. S. Brown, General Manager, Atlantic Region, announcing that the change would be effective Sept. 30, and we also stated that the Dominion M.P.'s for Colchester and Lunenburg had telegrams from the Minister of National Defense that the order had been suspended until the President, Sir Henry Thornton, could visit Nova Scotia, about the middle of October, when he would receive representations, this announcement being followed by General Superintendent Appleton issuing, on Sept. 28, a circular cancelling the one issued Sept. 24. Sir Henry Thornton also telegraphed the member for Lunenburg that the change would not be made until he visited Nova Scotia and explained personally to the representatives of the districts interested, the reasons for making it. Sir Henry went to Nova Scotia towards the end of October and met people in both Truro and Bridgewater, when he explained the reasons for the change and announced that the original decision would go into effect.

On Oct. 27, General Superintendent Appleton issued the following circular: "Circular 20, dated Sept. 28, is hereby cancelled. Effective Oct. 28, the position of Superintendent at Bridgewater will be abolished and the Bridgewater Division will become a part of the Halifax Division, under the jurisdiction of J. T. Hallisey, Superintendent, with headquarters at Halifax."

J. T. Hallisey, heretofore Superintendent of the old Halifax Division, has been transferred to Halifax, with jurisdiction over the new Halifax Division; extending from Truro via Halifax to Yarmouth, and the various connecting branches. J. Bain, who was Superintendent of the Bridgewater Division, at Bridgewater, has been given leave of absence, at the end of which he will be pensioned. H. V. Musgrave, Assistant Superintendent of the old Halifax Division, remains as Assistant Superintendent at Halifax for the present. W. E. Robinson, Assistant Superintendent, old Bridgewater Division, at Bridgewater, remains as Assistant Superintendent there for the present. The train dispatching offices at Truro and Bridgewater have been abolished, and all dispatching for the new division is being done from Halifax. M. M. McLearn, Chief Dispatcher of the old Halifax Division, having been transferred from Truro to Halifax. R. A. Black, Division Engineer, old Halifax Division, has been transferred from Truro to Halifax, and given jurisdiction over the new division. L. H. Robinson, heretofore Division Engineer, Bridgewater Division, is acting as Assistant Division Engineer at Halifax. T. W. Hennessey, Master Mechanic, has been transferred from Truro to Halifax. The Car Foreman, Locomotive Foreman and Yardmaster remain at Truro as heretofore. H. A. Mc-

Ellhinney, Bridge and Building Master, old Halifax Division, has been transferred from Truro to Halifax, and given jurisdiction over the whole new division. L. J. Saulnier, heretofore Bridge and Building Master, Bridgewater Division, at Bridgewater, has been appointed Assistant Bridge and Building Master there. C. W. Archibald, Roadmaster, has been transferred from Truro to Halifax, and has charge of the line between those points, and the Dartmouth branch. O. H. Lohnes, Roadmaster, has charge of the line between Halifax and Bridgewater, and is located there, having succeeded R. Dulhantry, deceased.

Proposal to Tax Publicly Owned Utilities.

The following circular was issued by the Niagara Falls Chamber of Commerce early in October to chambers of commerce and boards of trade throughout Ontario: "The Niagara Falls Chamber of Commerce has submitted the following resolution to the Ontario Associated Boards of Trade and Chambers of Commerce for discussion at the annual meeting in Hamilton on Nov. 15 and 16:—

"Resolved: That the Ontario Associated Boards of Trade and Chambers of Commerce places itself on record as approving of the principle of taxation of all publicly owned utilities, in the same manner as would be the case if such utilities were privately owned; and that the association shall memorialize the Ontario Government to enact such legislation as will enable any municipality to levy and collect such taxation."

"We feel that it involves a principle that will appeal to every municipality in the province. While we believe that the people generally are in sympathy with the principle of public ownership, the only way that the burden of taxation may be equitably distributed is that utilities of every nature, either publicly or privately owned, shall contribute a just share of such taxation. We trust that this resolution may meet with your approval and that your delegates who attend the meeting will be prepared to give it an intelligent and hearty support."

The motion was discussed at considerable length, being approved by delegates from Toronto and Hamilton, but was opposed by those from smaller places, including Kitchener, Orillia, Owen Sound and Preston, the delegates from which appeared to think that the proposed taxation would increase the cost of their power. It was carried by one vote, 21 voting for and 20 against.

Retort to a Railway Director's Wife.

One of a party of men left his seat in an already crowded train to go in search of something to eat, leaving a rug to reserve his place. On returning he found that, in spite of the rug and the protests of fellow passengers, the seat had been usurped by a woman. With flashing eyes she turned upon him:

"Do you know, sir, that I am one of the directors' wives?"

"Madam," he replied, "were you the director's only wife I should still protest."—The Argonaut.

The American Railway Association's Signal Section held its 13th meeting in New York, beginning Nov. 14, the economics of signaling and highway crossing protection being the chief subjects discussed. The next annual meeting will be held in Chicago, March 13 and 14, 1924.

Government Operation of Jamaican Railways Reported Against.

A Kingston, Jamaica, press dispatch of Nov. 6, stated that Lt.-Col. D. F. Hammond, Royal Engineers, who was commissioned to make recommendations to the Colonial Government as to the development of transport facilities throughout the island, on an economic basis, by railway, water, or otherwise, has reported to the Duke of Devonshire, Secretary of State for the Colonies, expressing his disbelief in state ownership, or control, of enterprises which are expected to show a profit, and stating that a government cannot run even light railways as economically as private individuals and companies.

The Jamaican Government Ry. has about 200 miles of 4 ft. 8½ in. gauge, and operates 44 locomotives, 34 passenger cars, and 600 freight cars. The line from Kingston to Spanish Town was built in 1884, by a private company, and afterwards taken over by the Government. An extension to Porus was built in 1885 with a branch line from Spanish Town to Ewarton. A United States syndicate bought the then existing railways in 1889, and built extensions from Porus to Montego Bay, and from Bog Walk to Port Antonio, but the Government took possession in 1900. A branch to Chapelton was completed in 1913, and a branch to new works in 1921.

Canadian National Railways' Negotiations for Montreal Right of Way.

Negotiations have been in progress for some time between the Canadian National Ry. and the Montreal Tramways Co., for the acquirement of a portion of the Montreal Terminal Ry. right of way, but no sale has been effected. A press report states that the property consists of a strip of land 45 ft. wide and 15 miles long, paralleling the C.N.R. track from La Salle Ave., through Maisonneuve to Bout de l'Isle. The Montreal Tramways Co.'s local and suburban lines map shows its Terminal line extending from La Salle Ave., through Maisonneuve, Montreal East, Pointe aux Trembles and Laval de Montreal, to the end of Montreal Island at Bout de l'Isle. It is a single track line with switches at Marien Ave. and 5th Ave., Pointe aux Trembles; Rifle Range branch, Chapel branch, and Cemetery branch, Laval de Montreal.

St. Regis Pulp & Paper Co. is considering the question of locating a plant at Cap Rouge on the St. Lawrence River, about 7 miles above Quebec, and has obtained options on a lot of property on the waterfront on the north shore, near the former Canadian Northern Ry. line. The Canadian National Ry. have about 100 acres on the waterfront there.

Timiskaming & Northern Ontario Ry. Earnings.—We are officially advised that the T. & N. O. R. Commission has paid the Ontario Government \$750,000 out of the railway's net earnings for the fiscal year ended Oct. 31. This exceeds by \$38,000 the net earnings for the year ended Oct. 31, 1922, which was the record year up to that time.

Railway Lands Patented.—Letters patent were issued during October for Dominion railway lands in Manitoba, Saskatchewan, Alberta, British Columbia and Yukon, as follows: Canadian Northern Ry., 3,328.91 acres; Canadian Northern Western Ry., 7.72; C.P.R., 2,048.7.

Hotel Scribe Purchase for Canadian National Railways.

Major Graham A. Bell, Deputy Minister of Railways and Canals, was credited in a press report with having stated at Ottawa recently that there was no hitch in the purchase of the Hotel Scribe in Paris, France, by the Canadian National Rys., and that the deal had been concluded and possession taken. Another Ottawa press dispatch of Nov. 2 stated that while the purchase of the hotel as headquarters for the C.N.R. on the European continent was going through, the personnel of the purchasing syndicate was being changed, and that some who figured in the original transaction had been eliminated. It was also stated that the purchase price is higher than was first rumored, and will be between \$4,000,000 and \$5,000,000.

A writer in *Le Temps* in Paris, said recently, that under Arnold Aronovici, the C.N.R. representative in France and on the European continent, the Hotel Scribe will be changed into a real palace destined to give prominence to Canadian life. The building when luxuriously transformed will provide a home for the C.N.R. offices, to which all will go who are interested in the development of economic relations between France and Canada. The *Temps* writer continues:—"It will also offer to the great public of Paris a permanent opportunity for becoming better acquainted and for appreciating still more that magnificent country to which we are united by affinities of race. A cinema installed in the basement, where Lumier Brothers not long ago showed on the screen their first moving pictures, will exhibit to the spectators the life and customs, the landscape and the scenery of Canada, its agriculture and its industry in full operation, the physiognomy of its statesmen and of its people. A general exhibition and local exhibitions from the provinces will describe to visitors all the natural and manufactured resources of that immense territory where the name of France is so universally honored. A banquet hall and spacious parlors will complete this comfortable and splendid installation, which will very soon be a lobby alive with activity where will be nourished every movement capable of fertilizing and strengthening between the two countries an ancient and already powerful friendship."

A London press dispatch of Nov. 13 said that Hon. G. P. Graham, Minister of Railways and Canals, and the legal members of the Canadian delegation to the Imperial Conference, were in Paris looking into the hotel purchase, the value of the site, building, etc., and that the building was still vacant and plastered with signboards.

Esquimalt and Nanaimo Ry. Lands office.—It having been announced that the E. & N. R. lands office would be removed from Victoria, B.C., to Vancouver, the Victoria Chamber of Commerce telegraphed E. W. Beatty, President, C.P.R., recently, who replied that the matter arose through the retirement of the Land Agent, L. H. Solly, under superannuation regulations, and added:—"We will maintain an office in Victoria for the proper conduct of matters pertaining to our land interests there, giving all facilities to the public, and, while business does not warrant a continuance of all the expense formerly incurred there, it is not likely to involve more than two or three positions at the most."

D. B. Hanna's Western Trip.

D. B. Hanna, ex-President, Canadian National Rys., returned to Toronto, Nov. 6, accompanied by A. J. Mitchell, ex-Vice President, after nearly a month's absence, during which they went through to the Pacific coast, on business connected with several companies of which they are directors. They conferred with Andrew Kelly, President, Western Canada Flour Mills Co., at Winnipeg, visited one of its plants at Calgary, and conferred at Victoria with officials of its subsidiary, the Brackman-Kerr Milling Co. At New Westminster they inspected the plant of the Canada Western Lumber Co., of which Mr. Hanna is President, and discussed the situation there with Vice President J. D. McCormick. At Victoria, they conferred with Wm. Schupp, President, Consolidated Whaling Co., which operates 6 stations, 4 in Canada, and 2 in the United States, and inspected 2 of its plants, also visiting its offices in Victoria, Tacoma and Seattle.

On returning to Toronto, Mr. Hanna, in response to a request, said: "Generally speaking, I found business in a healthy condition, and the outlook for the immediate present is satisfactory. As an old timer in Western Canada, I cannot help thinking that much of the pessimism permeating the farming community is more imaginary than real. Of course, there are hardships among a certain class of farmers, who depend entirely on grain and therefore work less than 4 months out of the 12, and unless they get a crop at a decent price, they are bound to suffer, but the man who is a real farmer, and has diversified interests, and works like the rest of us, all the year round, while not making a great deal of money, is at least paying his way and more, and is a real representative of those who are doing their share in developing the western provinces."

Telegraph and Cable Matters.

F. P. State, former Telephone Inspector, Atlantic Region, Canadian National Telegraphs, died at Montreal recently, after a brief illness.

The Dominion Government cable steamship *Syrian* returned to Halifax, N.S., recently from a month's cable repairing trip, having visited St. Paul's Island, the Magdalen Islands, Pictou Island, Byron Island, and the Saguenay River.

The cable repair steamship *Restorer* is reported to have completed work on the Pacific cable near Midway Island, and to have gone to Honolulu, to do some work prior to returning to Victoria, B.C.

C. E. Davies, General Traffic Superintendent, and E. Kenward, Superintendent of Railway Service, Canadian National Telegraphs, attended the American Railway Association, Telegraph and Telephone Section, annual meeting, at Colorado Springs, recently.

Mrs. C. Matthews, manager and operator, Canadian National Telegraphs' up-town office at Warton, Ont., has celebrated her 50th year in the service, the office having been established in 1873 in her home, she being the first operator, and having held the position continuously since.

Thos. O'Donohue, son of C. O'Donohue, retired Superintendent of the Western Union Cable station, Canso, N.S., David Peters, and M. de Barres, all members of the cable operating staff there, were in an automobile accident near Antigonish, N.S., recently, the two first named being killed.

Among the questions considered at the Imperial Conference in London, Eng., recently was that of laying an all-British cable from Canada to the West Indies. The present cable from Halifax, N.S., to the West Indies is owned by the West Indies and Panama Cable Co., which is subsidized by the Imperial, Canadian and West Indian Islands Governments.

G. C. Jones, General Manager, Canadian National Rys. Telegraph and Telephone Department, has been making a general inspection trip of western lines, accompanied by C. E. Davies, General Traffic Superintendent; W. G. Barber, General Commercial Superintendent, and the superintendents of railway telegraph service.

Tenders will be asked shortly, a press report states, for laying a new cable from Turks Island to Barbados, where it will bifurcate to Trinidad on the one hand and to British Guiana, on the other. The new cable will connect with the Halifax-Bermuda cable line, and there will be wireless telegraph stations on the smaller islands, linked up with the cable station at Barbados.

The Marconi Wireless Telegraph Co. of Canada's report for the calendar year 1922, shows operating profits of \$22,251, against \$12,253 for 1921. The deductions were \$271,779, leaving a deficit of \$249,528, which has reduced the amount at the credit of profit and loss to \$7,484. The net working capital has been reduced from \$399,942 to \$228,258. The general balance shows total assets of \$6,841,044, of which \$6,142,669 represent the plant.

The Dominion Government's wireless telegraph stations at Dawson and Mayo, Yukon, were opened for service Oct. 22. For the present the Government telegraph system forms the connecting link between these stations and Edmonton, Alta. It is expected that next year wireless telegraph stations will be established at Fort Simpson, on the Mackenzie River, and Fort McMurray, Alta., and that in 1925 stations will be established at Fort Smith, Fort Norman and Akralavik.

Canadian National Telegraphs messengers in Toronto appeared on Nov. 7 in uniforms consisting of grey serge cap, tunic and breeches, and black leather leggings. The tunic fastens close up around the neck, and two rows of black braid encircle the cuffs of the sleeves. The company's crest is embroidered on the left arm, and also appears on the cap, with the words "Canadian National Telegraphs." About 500 messenger boys, in the principal cities, are to be uniformed similarly.

Canadian National Telegraphs have opened offices at Crabtree, or Crabtree Mills, and St. Joseph d'Alma, Que.; Blenheim, Crerar, Keemle Point and Whitby Jct., Ont.; Lavina, Muir and White Plains, Man.; Bayard and Chandler, Sask.; Lyalta, Alta. The following offices have been closed: Cape Despair and Newport (Gaspe County), Que.; Clarence Creek, Hammond, James Bay, Keemle Pit, Rock Lake and Whitby, Ont.; St. Norbert, Man. The names of the following offices have been changed: Callender, Ont., to Derland; Nakina Camp, Ont., to Nakina; Otter Lake, Ont., to Holmur.

Major J. E. Gobeil, M.C., heretofore Assistant to General Superintendent, Dominion Government Telegraph Service, who has been appointed by the Civil Service Commission as General Superintendent, Dominion Government Telegraph Service, a Public Works Department branch, with office at Ottawa, vice D. H. Keeley, who has retired, was born at St. Jean Ile d'Orleans, Que., Feb. 20,

1870, educated at Ottawa College, and entered the civil service Nov. 20, 1891, as secretary to the Chief Engineer, Public Works Department. In 1896 he passed the civil service qualifying examinations and three years later was transferred to the Government Telegraph Service. From 1899 to 1904 he was engaged in the construction of the Yukon telegraphs. His next appointment was as inspector of Yukon telegraphs, which he filled from 1905 until appointed Technical Assistant to the General Superintendent in 1908. In Dec., 1914, he enlisted for overseas service, served in France with the First Canadian Division, and was awarded the Military Cross and the French Croix de Guerre with star and with palm. On being demobilized, Nov. 1, 1919, he returned to his former position in the Government Telegraph Service.

Among the Express Companies.

G. C. Taylor, President, American Ex. Co., and of the American Railway Ex. Co., died at his home, Pelham, N.Y., Nov. 18, aged 54.

The Board of Railway Commissioners has decided, in connection with an application made by Saskatchewan Creamery Co., of Moose Jaw, and Saskatchewan Co-operative Creameries of Regina, that express commodity rates on cream are not applicable to homogenized cream. The order is given in full on an earlier page of this issue, under "Traffic Orders by Board of Railway Commissioners."

The Board of Railway Commissioners announced early in November that it would open its sittings at Edmonton, Alta., Nov. 26 to hear objections against the Express Traffic Association of Canada's application for a general increase of rates. The other sittings in the west were arranged as follows: Victoria, B.C., Nov. 29; Vancouver, B.C., Nov. 30; Nelson, B.C., Dec. 3; Calgary, Alta., Dec. 6; Saskatoon, Sask., Dec. 7; Regina, Sask., Dec. 8; Winnipeg, Man., Dec. 10.

Canadian National Railways, Express Department.

The C.N.R. Express Department shipped from Sudbury, Ont., to New York, two tons of fur skins, valued at \$50,000.

E. Collins, heretofore General Clerk, Brockville, Ont., has been appointed Agent there, vice A. J. Courtice, deceased.

S. L. Pratt, heretofore cashier at Brantford, Ont., has been appointed acting Agent there, vice J. I. M. Grant, resigned.

R. C. Mellish, heretofore Travelling Agent, Stratford, Ont., has been appointed Travelling Agent at London, succeeding B. S. Murray, retired.

E. G. Coulthurst, heretofore Cashier, North Bay, Ont., has been appointed Agent there, vice G. J. Goldthorpe, appointed Travelling Agent there.

G. J. Goldthorpe, heretofore Agent, North Bay, Ont., has been appointed Travelling Agent there, vice B. W. Bailey, transferred to Stratford, Ont.

B. W. Bailey, heretofore Travelling Agent, North Bay, Ont., has been appointed Travelling Agent at Stratford, Ont., to succeed R. C. Mellish, transferred to London, Ont.

W. G. Everett, heretofore Travelling Agent, St. John, N.B., has been appointed Agent there, succeeding H. C. Creighton, General Agent, who has been pensioned, after many years service in various

capacities. The position of Travelling Agent there has been abolished.

The following offices have been closed: Grand View and Hawkshaw, N.B.; Boucherville and Crabtree, Que.; Electric, Ont. The express service has been withdrawn from Iberville and Menardville, Que., the Canadian National Rys. having abandoned the line between Farnham and St. Johns, Que., 13.5 miles.

H. C. Creighton, General Agent, St. John, N.B., has retired after 47 years in express service in the maritime provinces. He entered it Dec. 27, 1876, with the Intercolonial Ex. Co., at Halifax, N.S., serving as clerk until April 30, 1878, since when his record has been: acting Agent, Halifax, same company, May 1, 1878, to March 31, 1879; Agent, Halifax, same company, April 1, 1879, to May 31, 1889; Agent, Halifax, Canadian Ex. Co., June 1 to Dec. 31, 1889; Assistant Superintendent, St. John, N.B., same company, Jan. 1, 1890, to April 30, 1898; Superintendent, St. John, same company, May 1, 1898, to Aug. 31, 1921; Claims Agent, Canadian National Ex. Co., Eastern District, St. John, Sept. 1, 1921, until recently, when he was appointed General Agent, St. John.

Dominion Express Company.

A delivery service and free pick-up service have been established at Grimsby, Ont.

The following temporary offices have been opened: Amazon, Crichton, Fortune, Gibbs and Wolfe, Sask.

The Dominion Ex. Co. is reported to have shipped, via Montreal, about 100 live foxes from a fox farm at Bodfish, Me., to Victoriaville, Cal. The shipment was carried in an all steel car, and passed through Montreal Nov. 17.

A parcel containing \$1,000 in silver, consigned to a bank in Rosetown, Sask., was stolen from the company's office in Saskatoon, Sask., Oct. 26. L. P. Valcouth, who went to the office as night operator, Oct. 25, signed for the parcel, and disappeared Oct. 27. The way bill and other papers relating to this parcel were removed from the files.

Frederick Stevens, who died at Winnipeg, Nov. 23, had been in the Dominion Ex. Co.'s service for over 40 years, having entered it at Winnipeg, Nov. 1, 1882, and having written the company's first waybill there. He occupied a number of responsible positions, both at Winnipeg and Vancouver, and during later years was on Superintendent W. M. Gordon's staff at Winnipeg. On the completion of 40 years of service, a year ago, he was the recipient of handsome presents. Among the pall bearers were G. Ford, General Superintendent, Western Lines; W. M. Gordon, Superintendent, Western Division; and C. N. Spooner, Route Agent. The General Superintendent, Superintendent and Assistant Superintendent's staffs attended in a body.

Express Rate Increase Application Hearings.

Hearings on the Express Traffic Association of Canada's application for an increase in rates were commenced by the Board of Railway Commissioners in Edmonton, Alta., on Nov. 26, and further hearings will be held at other important points, the Board's intention being to work east from Edmonton. It is stated that at the hearings in western Canada various boards of trade will oppose the application, and also the provincial governments, and it is said that the Cana-

dian Council of Agriculture will not only oppose the granting of an increase, but will press for a reduction in the present rates. The prospects are that in eastern Canada also the application will be opposed, by the Canadian Manufacturers' Association, boards of trade and other bodies.

The City of Sault Ste. Marie applied to the Board for an adjustment of express rates which would afford that place the same advantage as concerns express charges as were accorded it as concerns freight rates when it was placed in schedule A. territory, by the Board's judgment and order of June 30, 1922. The Secretary of the S. S. M. Board of Trade is reported to have received a communication from C. N. Ham, Chairman, Express Traffic Association of Canada, pointing out that if the Board of Railway Commissioners should decide that the express rates are to be based on the first class freight rates, as has been suggested, the express rates into and out of Sault Ste. Marie would be adjusted automatically.

Details of the hearing at Ottawa, on Oct. 4, at which the Dominion Express Co. and the Canadian National Rys. Express Department presented figures showing that present rates are insufficient, and the alternative methods proposed for ensuring the companies adequate revenues, were given in Canadian Railway and Marine World for November. It is expected that after the hearings throughout the country have been completed, a final hearing, at which argument will be presented, will be held at Ottawa.



DEPARTMENT OF RAILWAYS AND CANALS, CANADA, WELLAND SHIP CANAL.

Section 8.

NOTICE TO CONTRACTORS.

SEALED TENDERS addressed to the undersigned and marked "Tender for Section 8, Welland Ship Canal," will be received at this office until 12 o'clock noon, on Thursday, December 27th, 1923.

Plans, specifications and form of contract to be entered into can be seen on or after this date at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa, and at the office of the Engineer in Charge, Welland Ship Canal, St. Catharines, Ont.

Copies of plans and specifications may be obtained from the Department on the payment of the sum of fifty dollars. To bona fide tenderers this amount will be refunded upon the return of the above in good condition.

An accepted bank cheque on a chartered bank of Canada for the sum of \$550,000.00 made payable to the order of the Minister of Railways and Canals, or War Loan Bonds of the Dominion of Canada to the same amount or War Loan Bonds and cheques if required to make up the difference, must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work at the rates stated in the offer submitted.

The cheque or bonds thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque or bonds of the successful tenderer will be held as security or part security for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,

J. W. PUGSLEY,
Secretary.

Department of Railways and Canals,
Ottawa, November 29th, 1923.

Electric Railway Department

Electric Railway Statistics for Calendar Year 1922.

The table on the following page was compiled in Canadian Railway and Marine World's office from statistics furnished by the Dominion Bureau of Statistics, Transportation Branch. The following abbreviations are used in the names of railways: E., electric; E.R., electric railway; E.S.R., electric street railway; S.R., street railway. The minus (—) mark in the column for net income or deficit shows that there was a deficit in the operation of the line to the extent of the figures given.

The mileages in the first column of figures are of the first main track, in addition to which the railways reporting had 513.22 miles of second track, and 255.96 miles of sidings and turnouts. In the line at the foot of the table giving comparative figures for 1921, the last eight columns cover the Toronto Ry.'s operations only up to the time it was taken over by the city, the figures for the 4 months' operation to Dec. 31, by the Toronto Transportation Commission not being received by the Bureau in time to be included.

The total length of first main track was 1,724.60 miles; of second track, 513.22; of sidings and turnouts, 255.96, making a total of 2,493.78 miles computed as single track, compared with 1,687.37 miles of 1st main track, 499.58 of 2nd main track, 238.79 of sidings and turnouts, and a total of 2,425.74 miles of all tracks at Dec. 31, 1921. The first main track mileage distribution by provinces is: Nova Scotia, 55.42; New Brunswick, 25.86; Quebec, 300.27; Ontario, 811.40; Manitoba, 127.01; Saskatchewan, 47.22; Alberta, 108.24; British Columbia, 249.18. Of this, 969.62 miles are owned and operated by private companies; the Montreal Tramways Co.'s 142.81 miles are owned and are operated by that company under the Montreal Tramways Commission's direction, under a special contract; the remaining 612.17 miles are under public ownership, as follows: The Canadian National Ry. owns and operates 136.28 miles; the Province of Ontario owns 23.01 miles, of which the Nipissing Central Ry. is operated by the Timiskaming & Northern Ontario Ry. Commission, and the Peterborough Radial Ry. is operated by the Hydro Electric Power Commission of Ontario, which also operates for the City of Toronto, the Toronto & York Radial Ry. and the Schomberg & Aurora Ry., 80.66 miles, and for the municipalities interested, the Guelph Radial Ry. and the Sandwich, Windsor & Amherstburg Ry., totalling 43.24 miles. The London Railway Commission operates the London & Port Stanley Ry., 24.50 miles, under lease from the City of London, and 13 municipalities own and operate directly 304.48 miles. The publicly-owned lines are located as follows: Ontario, 456.43 miles; Manitoba, 7.65; Saskatchewan, 38.22; Alberta, 106.49, and British Columbia, 3.38. The Calais St. Ry. in New Brunswick, and the Niagara Falls Park & River Ry. in Ontario, connect with lines in the United States, under the same ownerships.

The stock capitalization decreased from \$91,169,885 in 1921 to \$76,949,185, and the funded debt increased from \$86,017,551 to \$111,309,789, these differences being due, it is explained, to readjust-

ments made by the taking over of the Toronto Ry. by the city; but the price to be paid for the Toronto Ry. has not been settled, and further adjustments will have to be made. Of the 65 railways reporting, 14 failed to earn operating expenses, reporting a loss of \$116,887, while 51 showed an aggregate net operating revenue of \$13,790,501. After paying interest on funded and other debt and other deductions, 35 railways of the 51 had a corporate surplus of \$8,035,794, out of which to pay dividends and add to reserves. Dividends paid totalled \$2,-

The total number of employees was reported as 18,099, of whom 1,364 were engaged in general administration, 5,277 in maintenance, 11,373 in transportation and 85 not specifically distributed. The wages paid amounted to \$24,988,118.79.

London Street Railway Purchase Negotiations.

In connection with the negotiations which have been in progress for some time between Sir Adam Beck, acting for London, Ont., City Council, and the London Street Ry. Co., regarding the purchase by the city of the company's property, the Ontario Government was approached at the end of October with a view of having certain matters, which had arisen during the progress of the negotiations, straightened out. It is said that the principal point was in connection with the fare now being charged. Under the charter the fare is 5c, with tickets at reduced prices for adults, children and workmen, but an act passed in 1922 authorized the company, for the unexpired portion of its charter, to charge a straight 5c fare, tickets to be sold 5 for 25c, with children's fares as previously, cash 3c or 2 tickets for 5c, workmen's tickets being done away with. The city claimed that the present fares, which were put in operation June 14, 1922, are of an emergency character, and are not to be counted upon as an asset in fixing the price of the property. The parties were heard by the Premier and other members of the Government, Oct. 25 and 30, but no definite understanding was reached. It is claimed for the city that if the increase of fare had not been granted, the city could purchase the line at a much less price than that at which the company is now willing to sell. The city claims that the increased fare will not be effective after the expiration of the charter in March, 1925, while the company holds that the fares granted in 1922 will continue in force under any 5-year extension of the charter. The Government view apparently is that the increase of fares granted in 1922, will only run to the expiration of the charter in March, 1925, but it is said that the Legislature will be asked to give an interpretation of its intention.

The price at which the company is willing to sell its property is \$1,425,000, which Sir Adam Beck reported to London City Council, Nov. 5, as being excessive. The council, by a vote of 9 to 2, decided to take no action, consequently there will be no bylaw submitted to the ratepayers at the ensuing municipal election. The position now is that the council has until March, 1924, to decide whether it will give notice to take over the company's property under arbitration proceedings, or to endeavor to get some concessions for a 5 years' renewal of the franchise.

The Winnipeg Electric Ry. put its winter schedule in operation, Nov. 16. Practically every line is given an increased service, about 40 additional cars having been placed on the various routes in the city.

Canadian Electric Railway Association.

Honorary President: Major General Sir John M. Gibson, K.C.M.G., M.A., LL.B., LL.D., K.C., director, Dominion Power & Transmission Co.

Honorary Vice President: Acton Burrows, Proprietor, Canadian Railway and Marine World.

Honorary Advisory Council: Thos. Ahearn, President, Ottawa Electric Ry.; F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario; Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.; Geo. Kidd, President, British Columbia Electric Ry.

President: H. H. Couzers, General Manager, Toronto Transportation Commission.

Vice President: D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.

Treasurer: E. P. Coleman, General Manager, Dominion Power & Transmission Co.

Executive Committee: The President, the Vice President, the immediate Past President (Major F. D. Burpee, Manager and director, Ottawa Electric Ry.), the Treasurer, and G. Gordon Gale, Vice President and General Manager, Hull Electric Co.; W. S. Hart, Treasurer, Quebec Railway, Light, Heat & Power Co., and Vice President, Three Rivers Traction Co.; D. W. Houston, Superintendent, Regina Municipal Ry.; C. B. King, Manager, London Street Ry.; M. W. Kirkwood, General Manager, Grand River Ry. and Lake Erie & Northern Ry.; H. K. McLean, Superintendent of Transportation, New Brunswick Power Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry.; W. R. Robertson, General Superintendent of Railways, Hydro Electric Power Commission of Ontario; H. E. Weyman, Manager, Lewis County Ry.; C. L. Wilson, Superintendent, Hydro Electric Ry., Toronto & York District.

Auditor: Lt. Col. G. C. Royce.

Secretary: Eustace Smith, Jr., Executive Assistant, Toronto Transportation Commission, 35 Yonge St., Toronto.

Official Organ: Canadian Railway and Marine World, Toronto.

554,568, and additions to reserves aggregated \$4,664,822, while the railways as a whole showed a net surplus of \$89,557, whereas in 1921 there was a deficit of \$2,472,635.

During the year 47 persons were killed on street railways, against 48 in 1921, and persons injured increased from 2,385 in 1921 to 3,833, the largest increase being in passengers, viz., from 1,110 to 2,260.

The rolling stock and equipment owned consisted of 3,868 closed passenger cars, 258 open passenger cars, 103 combination passenger cars, 741 freight cars, 38 combination passenger and baggage cars, 20 work cars, 65 snow plows, 146 sweepers, 278 miscellaneous cars, and 56 locomotives. In addition, the railways owned 8 trackless trolley cars and 27 buses, this information being given for the first time.

Electric Railway Operating Statistics for Year Ended Dec. 31, 1922.

Name of Railway	1st main track mileage	Gross earnings from operation	Miscellaneous income	Operating expenses	Taxes funded debt, etc.	Net income or loss	Total car mileage	Fare passengers carried	Freight carried tons
Brandon Municipal Ry.....	7.65	\$41,420		\$51,253	\$21,853	\$-31,685	253,407	677,300	
Brantford & Hamilton Ry.....	23.19	242,464		183,273	105,100	-45,909	382,181	674,381	21,309
Brantford Municipal Ry.....	20.63	177,691		148,386	30,659	-1,353	571,750	3,046,640	
British Columbia E.R.....	245.80	5,082,064	\$1,596,918	3,963,507	1,323,310	1,383,164	13,949,925	67,932,527	312,143
Calais S.R.....	6.45	45,455		40,167	6,537	-1,259	183,960	664,557	
Calgary Municipal Ry.....	66.50	881,684	1,649	599,006	127,528	156,799	2,907,473	14,765,567	4,217
Canadian Resources Development Co.....	1.75	30		981		-950	6,388	613	
Cape Breton Electric Co.....	30.59	296,811	138,466	293,546	139,733	1,985	685,784	3,615,481	
Chatham, Wallaceburg & Lake Erie Ry.....	36.73	146,649		144,445	47,245	-45,041	221,775	142,299	93,644
Cornwall S.R., Light & Power Co.....	4.00	65,939	83	42,178	2,378	21,466	215,900	649,709	137,454
Edmonton Radial Ry.....	33.32	795,633	4,180	543,597	147,696	108,519	2,350,589	12,914,896	
Fort William S.R.....	11.03	187,741	69,886	162,072	65,184	30,371	627,507	3,014,929	
Grand River Ry.....	24.36	377,914	1,049	321,354	24,070	33,538	539,476	1,340,643	168,379
Guelph Radial Ry.....	8.49	73,659		72,202	23,588	-22,131	219,976	1,310,372	
Hamilton & Dundas S.R.....	6.98	74,935		96,269	6,974	-28,307	193,994	1,042,593	12
Hamilton, Grimsby & Beamsville E.R.....	22.60	202,371		211,460	24,171	-33,261	412,874	1,007,778	52,642
Hamilton Radial Ry.....	22.86	188,841		211,200	88,539	-110,899	431,525	1,175,538	12,264
Hamilton S.R.....	17.40	989,961		821,180	124,886	43,894	2,698,545	20,582,376	
Hull Electric Co.....	16.54	315,284	41,608	238,271	88,889	29,732	882,866	4,211,630	4,576
International Transit Co.....	3.80	66,620	43,803	55,262	44,940	10,222	229,676	1,441,303	
Kitchener & Waterloo S.R.....	4.30	111,273		80,960	15,080	15,232	263,399	2,571,590	
Kingston, Portsmouth & Cataract E.R.....	6.00	71,059	1,607	69,722	5,721	-2,776	199,680	881,752	
Lake Erie & Northern Ry.....	51.00	340,895	2,849	281,864	101,239	-39,358	654,487	585,992	131,362
Lethbridge Municipal Ry.....	6.67	57,784		62,802	29,440	-34,484	248,549	1,193,895	
Levis County Ry.....	11.50	85,642		69,199	32,113	-15,670	254,274	958,019	1,200
London & Port Stanley Ry.....	24.50	564,481		440,801	113,091	11,309	971,193	1,016,890	287,512
London S.R.....	27.48	594,583		494,986	34,620	64,977	1,853,622	13,413,945	
Moncton Tramways E. & G. Co.....	2.72	14,553	370,472	16,861	181,067	187,096	58,530	308,126	
Montreal Tramways Co.....	142.81	11,826,350	58,494	6,801,716	2,893,840	2,180,389	22,048,927	189,720,799	341,301
Montreal & Southern Counties Ry.....	52.33	510,662	390	435,761	91,392	-16,102	944,567	3,033,531	560
Moose Jaw E.R.....	9.00	108,564		99,386	3,652	5,525	420,353	1,792,672	
Nelson Municipal Ry.....	3.38	21,787		23,141	4,050	-5,404	65,520	431,089	
New Brunswick Power Co.....	16.69	416,477	217,859	323,375	173,384	137,547	1,088,039	7,127,355	
Niagara Falls Park & River Ry.....	11.91	107,605	36,295	120,000	75,366	-51,466	273,503	1,166,218	
Niagara, St. Catharines & Toronto Ry.....	61.77	958,089		823,006	76,634	85,448	1,628,880	7,650,520	331,988
Niagara, Welland & Lake Erie Ry.....	2.90	18,664	8	16,191	2,399	81	82,318	397,688	
Nipissing Central Ry.....	15.37	90,348		85,543	14,255	-9,450	189,065	859,040	
Nova Scotia Tramways & Power Co.....	12.63	599,914	292,550	460,670	318,757	113,037	1,727,265	9,848,031	
Oshawa Ry.....	9.00	331,249	12,760	172,186	18,633	153,189	242,718	647,148	287,500
Ottawa E.R.....	26.61	1,822,544		1,308,062	115,566	398,914	5,171,188	37,442,477	
Peterborough Radial Ry.....	7.64	89,204		100,442	14,898	-26,117	474,472	1,253,320	
Pictou County Electric Co.....	9.20	76,052	157,010	75,176	159,736	-1,850	140,812	787,158	
Port Arthur Civic Ry.....	12.80	192,358		133,894	32,473	25,991	550,128	3,126,989	
Quebec Ry., Light & Power Co.: Citadel Division.....	20.48	892,138		712,487		179,650	2,364,430	15,198,792	
Montmorency Division.....	28.60	327,008		261,849	7,963	57,195	482,020	2,120,215	
Regina Municipal Ry.....	25.59	302,727		277,907	80,920	3,899	1,047,928	5,522,232	36,640
Saskatoon Municipal Ry.....	12.63	278,204		210,098	44,748	23,358	855,472	4,416,590	
Sandwich, Windsor & Amherstburg Ry.....	34.75	574,124	8,550	435,822	138,972	7,879	1,528,830	9,874,785	6,726
Sarnia S.R.....	8.25	88,173		78,289	8,376	1,507	209,196	1,157,652	13,162
Schomberg & Aurora Ry.....	14.44	27,970		34,067	204	-6,302	60,474	47,528	30,965
Shawinigan Falls Terminal Ry.....	11.52	75,290		41,819	17,528	15,942			
Sherbrooke Ry. & Power Co.....	9.39	91,376	67,993	93,690	87,261	-21,583	475,452	1,021,502	
St. Thomas Municipal Ry.....	6.50	29,363	5	37,721	6,714	-15,067	223,276	549,801	
Suburban Rapid Transit Co.....	17.31	189,464	72,795	193,701	52,842	15,716	883,909	3,553,644	
Sudbury-Copper Cliff Suburban E.R.....	7.90	39,338		33,547	7,700	-1,908	106,421	525,488	
Three Rivers Traction Co.....	7.10	126,917		84,012	30,312	12,593	395,240	2,496,497	
Toronto Transportation Commission.....	93.48	11,580,071	71,441	8,375,733	1,616,978	1,658,801	26,891,077	187,145,263	
Toronto Suburban Ry.....	65.51	345,244	6,281	331,096	145,662	-125,233	864,603	4,374,200	15,075
Toronto & York Radial Ry.....	66.22	1,130,661		977,063	160,127	-6,592	1,947,968	11,670,388	81,869
Waterloo-Wellington Ry.....	3.45	10,422		9,869	5,037	-4,484	35,800	183,734	
Windsor, Essex & Lake Shore Rapid Ry.....	37.35	312,092	2,153	264,503	58,383	-8,641	529,712	721,315	67,342
Winnipeg Electric Ry.....	63.57	3,588,979	868,594	2,615,487	987,819	854,266	9,563,898	60,399,419	
Winnipeg, Selkirk & Lake Winnipeg Ry.....	38.48	213,741	48,165	169,193	101,668	-8,955	559,733	1,143,151	5,565
Woodstock, Thames Valley & Ingersoll Ry.....	10.20	22,532		19,456	7,760	-4,684	97,630	70,509	
Yarmouth Light & Power Co.....	3.00	64,357	1,508	25,797	33,493	6,574	71,000	286,868	
Total.....	1724.60	\$49,660,485	\$4,195,536	\$35,986,871	10,567,202	\$7,308,947	116,711,189	738,908,949	2,445,425
1921.....	1687.37	\$44,536,832	\$3,651,524	\$35,945,315	10,112,035	\$2,131,006	106,044,531	719,305,441	2,285,886

See explanatory notes on preceding page.

Toronto Transportation Commission's Activities.

Rehabilitation of Toronto Suburban Ry. Lines.—Consequent on the sale, on Nov. 14, of the T.S.R.'s city lines to the City of Toronto, for operation by the Commission, the latter began their rehabilitation at once. Two shovels were put to work on Nov. 14 at 9 p.m., and on the following day work was under way at three points, westerly from Bathurst St. and Davenport Road, westerly from Keele and Dundas Sts., and easterly from Gilmour and Dundas Sts., and on Nov. 18 work was started on Keele St., north from Dundas St. The work contemplated for 1923 is as follows: Rehabilitation and double tracking, with 122-C-G construction, of the single track line on Dundas St. from the intersection of Dundas and Keele Sts. to the city limits at Runnymede Road; rehabilitation and double tracking, with 122-S-G construction, of single track line on Keele St. from Dundas St. to St. Clair Ave.; changing of gauge of standard gauge line on Weston Road from St. Clair Ave. to McCormack Ave., to the T.T.C.'s gauge, 4 ft. 10 $\frac{1}{2}$ in.; double tracking, with 122-C-G construction, of single track line on Weston Road from McCormack St. to city limits at Northland Ave.; double tracking, with 122-S-G construction, of single track line on Davenport Road from Bathurst St. to the north entrance of the Hillcrest repair shops, now being built; changing of gauge on Davenport Road line between north entrance to Hillcrest shops and Dovercourt Road, from standard to 4 ft. 10 $\frac{1}{2}$ in.; double tracking, with 122-C-G construction, of single track line on Davenport Road and Weston Road, between Dovercourt Road and St. Clair Ave.; construction of a loop at Weston Road and St. Clair Ave., and another at Runnymede Road and Dundas St. As stated above, this work has been mapped out for completion this year, but this will be contingent upon the continuance of favorable weather conditions.

On Nov. 16, the T.T.C. inaugurated a service from Keele and Dundas Sts., along Dundas St. to Gilmour St., on a temporary track. The Toronto Suburban Ry. provided a service on Dundas St. from Gilmour St. to Runnymede Road, on Keele St. and Weston Road, between Dundas St. and the city limits at Northlands Ave., and on Davenport Road, for a few days, after which all T.S.R. equipment was taken off the city lines. Following this, service was discontinued on Keele St. and Davenport Road, it being estimated that the Davenport Road service east of Dovercourt Road would be discontinued for about a week, and for about three weeks west of Dovercourt Road. The Keele St. service was discontinued for a few days only, on account of stone subgrade being used for the new track instead of concrete.

The Fairview section of the T.S.R. lines, a spur running south from Dundas St., will be abandoned by the Commission, and the people who have been served heretofore by this line will be served by buses. A map, accompanying an article elsewhere in this issue, concerning the sale of the T.S.R. city lines to the city, shows the location of the lines being rehabilitated, regauged or abandoned as above noted.

Parliament St. Line Loop.—Construction of a loop at the north end of the newly built Parliament St. line, at the Prince Edward Viaduct, is delayed pending the city's approval of plans.

Gerrard St. Bridge.—The Commission has connected its lines across the bridge over the Don valley, on Gerrard St., which it is expected, at the time of writing (Nov. 16), will be opened for traffic about Nov. 25. Closing of this gap in the Gerrard St. line will probably result in some re-routing of the cars serving the east end of the city.

Winchester St. Line.—The Commission undertook the construction of the Parliament St. extension on the understanding that the Winchester St. line would be abandoned, which has caused considerable protest. At the time of writing (Nov. 16), no decision has been arrived at concerning final disposition of the line.

Track Extensions into York Township.—Details of proposed extensions into the portion of York Tp. northwest of Toronto city limits were given in previous issues of Canadian Railway and Marine World. At the time of writing (Nov. 16), committees of business men and others in the areas which would benefit from the construction of the proposed lines are engaged in a campaign to secure a vote favorable to the lines' construction when the matter is put to the voters on Jan. 1, 1924.

Hillcrest Repair Shops.—The large repair shops at Bathurst St. and Davenport Road, construction of which by the John V. Gray Construction Co. has been pro-

ceeding since last spring, are nearing completion, and installation of machinery and equipment has been begun. The expectation is that they will be in operation before the end of this year. It is also expected that the various auxiliary buildings, mentioned in Canadian Railway and Marine World for October, pg. 498, for which Sullivan & Fried, Toronto, are contractors, will also be ready for occupancy about the same time; and also the office building being built by Witchall & Son at the Russell car house property.

The Roncesvalles Car House, in the southwestern portion of the city, at the intersection of King St., Roncesvalles Ave., Queen St. and the Lake Shore Road, was officially opened for operation on Nov. 3. The car house office was occupied by the Commission's staff on Oct. 20. A complete description of car house and office building was given in Canadian Railway and Marine World for September, pg. 444.

Bus Operation.—The 4 gasoline motor buses ordered by the Commission from the Fifth Avenue Coach Co., through Packard Ontario Motor Co., Toronto, have been placed in operation on the Rosedale runs. The Commission continues to operate the other gasoline motor bus routes, and the trolley bus routes, specified in previous issues of Canadian Railway and Marine World.

The One-Man Car Question in Ottawa.

The Ottawa Railway Employees' Union executive committee wrote to local newspapers recently, stating that the union was opposed to the introduction of one-man cars there, whether wholly or in part. Major Burpee, Manager, Ottawa Electric Ry., replied, and his letter is of interest and importance to electric railway officials generally. He said:—"The committee's letter contains the query, 'Who is more competent to advise the public upon the question of the practicability and safety of the one-man cars than the street car employees themselves?' May I suggest, that the most competent judge is the management of the street railway. Is it reasonable to suppose that sane business men would undertake an investment of millions of dollars in this type of equipment if it was impracticable and unsafe? The latest information prepared by the American Electric Railway Association for the guidance of its members, the street railways of Canada and the United States, report 422 street railways using 8,948 one-man cars. The one-man car has been the subject of discussion at every street railway convention for years past. The most careful investigations have been conducted by the Association. The practicability and safety of the one-man car for light traffic is beyond question.

"The letter makes the statement that the responsibility for accidents rests upon the employees. What does the employee lose if he is responsible for an accident? At most, his job. The street railway must settle for all accidents. I recall an accident which occurred some years ago on the Britannia line, in which a large number of persons were injured. It was due entirely to the stupidity and disregard of rules of one motorman. The motorman lost his job. The company paid \$90,000 in settlement of claims. It is natural that labor should oppose the

institution of any labor-saving device, but if the most important function of a street railway is to provide employment, why not put three or four men on each car?

"It is not a difficult matter to cite isolated cases of accidents in various cities in which chance alone has implicated the one-man car. The statistics prepared by the American Association show proportionately less accidents from the operation of one-man cars than from those manned by two men. The reason for this is that the one-man car is designed to avoid accidents as far as human ingenuity can provide. The properly equipped one-man car is built to carry not more than 30 passengers. The steps and doors are interlocked with the motors, so that the steps must be up and the doors closed before the car can start. Neither can the doors be opened or the steps lowered until the car is at rest. This has practically eliminated boarding and alighting accidents, which last year amounted to 20% of our total accidents in Ottawa. The controller and brakes, the starting and stopping mechanisms, are arranged so that even should the motorman drop dead the power is thrown off, the emergency brakes are set, and the car stops instantly. The employee operating a one-man car is instructed to perform his duties as conductor only when the car is at rest. An emergency exit is provided at the rear end which can be opened by passengers, giving two exits in case of emergency.

"The one-man car is used only for light traffic. On a line where the average number of passengers per trip is not more than 10 or 12, is it not better to have two cars of this type giving a five-minute service than one car with two men giving a 10-minute service? The operating cost is almost the same, and the service is improved 100%. We do

not propose that one-man cars should be used on the Bank or Somerset lines, or on any line where the traffic is heavy. It is designed to save power, wages, and wear and tear on equipment and tracks where it can be usefully employed. The management of this system has been supplied with the fullest information on the subject from all over the continent, and has personally observed one-man car operation in many cities. We have no intention of depreciating our service by introducing cars into Ottawa that will slow up our time schedules, or cause accidents for which we have to pay. The economy in operation which would result would be a big factor in keeping down the rate of fare by helping to offset the operating loss from extensions that cannot for some years produce enough revenue to carry themselves.

"State railway commissions in the United States have generally endorsed this type of car for light traffic, and have authorized their use in many cases where city councils, influenced by the propaganda of labor agitators, have refused permission to employ them. This has been done only after a thorough investigation as to practicability and safety of operation. Why has the Toronto Transportation Commission not only continued their use in that city, but is purchasing more? Why has the Montreal Tramways Commission authorized the purchase of 25 cars of this type which are now under construction? Why are they being effectively employed in New York, Brooklyn, Chicago, Philadelphia, Boston, Washington, Los Angeles, Denver, Baltimore, Detroit, Grand Rapids, Newark, Rochester, Albany, Cleveland, Providence, Milwaukee, Vancouver, Halifax, St. John, Quebec, Regina, Calgary, and hundreds of other cities? Would the management of these street railways purchase and introduce one-man cars if they were impracticable and unsafe, or continue them in operation if they injured their business and caused excessive damage claims?

"The advantages to Ottawa of the one-man car are: an improved service on light traffic lines, and an important saving in operation which will materially help to continue the five-cent fare. We will agree that their introduction will be so gradual that the status or seniority of any employee will not be affected, and that those employed on them will receive a 10% increase in wage rates. We are prepared to leave the partial adoption of the one-man car in Ottawa to any recognized street railway expert that the street railway committee care to employ."

Detroit Municipal Ry.—A press dispatch gives the following figures for the year ended June 30:—Total operating revenue, \$20,196,163.25; operating expenditure, \$14,450,612.80; taxes, \$633,796.64; interest on funded debt, \$1,833,857.14; deductions for interest on notes payable, \$31,037.37; deductions for sinking fund on construction and purchase bond contract, \$2,381,293.46; gross expenditure of \$19,330,597.41; net revenue from operation, \$865,565.84, to which is added non-operating revenue, \$72,901.63, making a net income of \$938,467.47.

Quebec Ry., Light & Power Co. notified Quebec City Council recently that a number of stops on the city car routes had been eliminated to promote better efficiency in operation. The council is reported to have decided, Nov. 8, to notify the company it had no right to change stopping places of cars without the city's consent.

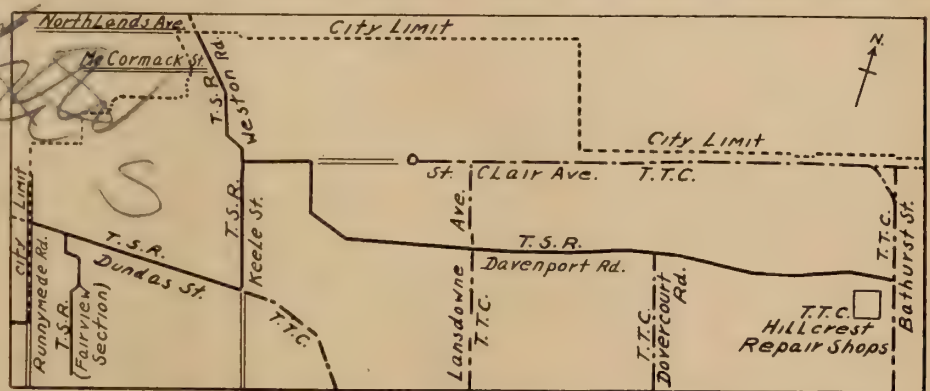
Toronto Suburban Railway Lines Bought by City.

Canadian Railway and Marine World has given in previous issues particulars of the negotiations which have been in progress for many months, for the acquisition by the City of Toronto, for operation by the Toronto Transportation Commission, of the Toronto Suburban Ry.'s city lines, and our October issue contained the terms of a draft agreement which, we stated, would be just about those on which these lines would be taken over. As stated in our November issue, Toronto city authorities objected strenuously to the clause providing for the construction of a subway on Weston Road, and York Township authorities, who proposed buying the section of the T.S.R. line on Dundas St. from the westerly city limits at Runnymede Road, to Lambton, 1.34 miles, and handing it over to the Toronto Transportation Commission for operation, found that they were unable to do so legally until the matter had been submitted to a vote of the people.

furnish what service can be given, limited on account of the rehabilitation being proceeded with, on the acquired lines.

A cheque for \$118,317.24, covering the purchase price, and one for approximately \$12,000, as consideration for the deletion of the subway clause in the final agreement, were issued by the Toronto Transportation Commission to the T.S.R. bondholders' trustees on Nov. 14. In accordance with the agreement by which the T.S.R. had been operating the T.S.R. city lines for the Transportation Commission, and by which the Commission assumed the deficits incidental to such operation as from Sept. 1, 1921, the Commission on Nov. 15 issued a cheque for \$70,000 to the Canadian National Ry. in part settlement of deficits accrued. The settlement of the balance of deficits incurred to Nov. 15 will be made later.

The accompanying sketch map of a portion of northwest Toronto shows the



Portion of Northwest Toronto, showing Toronto Suburban Ry. lines bought by the City, and connecting T.T.C. lines.

Negotiations carried on during the early part of November succeeded in removing these obstacles, however, and an agreement was arrived at and ratified on Nov. 14. The final agreement differs from that outlined in our October issue, chiefly in that the clause concerning the subway construction has been entirely deleted; and in that \$87,628.67, representing the value of the Dundas, Fairview, Keele St. and Davenport West sections, and \$51,671.33, representing the value of the Lambton and Davenport East sections, have been replaced by \$118,317.24, representing the value of the Dundas, Fairview, Keele St., Davenport West and Davenport East sections, the Lambton portion, extending 1.34 miles west from the city limit at Runnymede Road, along Dundas St., not having been included in the sale. The original arrangement concerning this Lambton section was that the city was to take it over with the other sections, and to be recompensed therefor by York Township. The probabilities are that the township will vote on the matter of acquiring this line on Jan. 1, and if the vote is favorable, it will be bought from the T.S.R. by direct purchase, after which the township will arrange with the Toronto Transportation Commission for its operation.

While the agreement as finally drafted contained the interim operating arrangement mentioned in our October issue, which specifies that such arrangement shall last for not longer than 6 months, indication are, at the time of writing (Nov. 17), that it will be in effect for a few days only, as the Toronto Transportation Commission will itself proceed to

location of the T.S.R. lines taken over by the city, and their relationship to connecting Toronto Transportation Commission lines (marked T.T.C.). The T.S.R. line which leaves the city limit at Northlands Ave. goes on to Weston and Woodbridge, while that leaving the limits at Runnymede Road goes on to Lambton and Guelph. As stated, however, only the lines within the city boundaries, as shown, were acquired.

The successful conclusion of the negotiations for the purchase of the T.S.R.'s city lines by the city, is an effectual answer to the arguments advanced by Mayor Maguire and his satellites, that the city lines could not be acquired unless the line from Toronto to Guelph was also bought.

Hydro Electric Ry. Matters.—Residents along the Hydro Electric Ry., Toronto & York District, Mimico Division line, presented a petition recently to the Hydro Electric Power Commission of Ontario, which operates the lines for the City of Toronto, asking for widening of the Toronto-Hamilton highway, which the line follows from Toronto to Port Credit, 8.37 miles, so that the line could be double tracked. Dr. Forbes Godfrey, Ontario Minister of Health, who represents the district, Premier Ferguson of Ontario, and Sir Adam Beck, Chairman, Hydro Electric Power Commission of Ontario, and minister without portfolio in the Ontario Government, held a conference on Nov. 17, when this request and other matters concerning the Hydro Electric Ry. were considered.

Ottawa Electric Railway Franchise Negotiations.

In connection with the negotiations which are in progress, on the initiative of the Ottawa City Council, relative to the Ottawa Electric Ry. Co.'s franchise, the council's street railway committee submitted to the company a series of 17 questions, which were drawn up by the committee in connection with the proposed solution of the problem submitted by the company, details of which were given in Canadian Railway and Marine World for October. In brief, the company's proposal is that a supplemental agreement be entered into, in which certain clauses of the existing agreement are amended, under which the company would make the extensions and improvements proposed in the Feustel report of 1922. The committee desired to have more specific particulars on certain matters. The company's reply made certain concessions, including the right to appeal to the Board of Railway Commissioners as to fares at the end of each 5-year period; and a promise that the number of one-man cars would not exceed 40% of the rolling stock. The company also stated that it would agree to the 5c fare being effective only as far as the present city limits west of Holland Ave.; that the question of fares in territory to be annexed to the city could be discussed at the end of the 1928 franchise renewal period, and that it would not agree to the council designating the streets on which one-man cars should be run. It asked for an exclusive franchise free from the competition of motor buses or other vehicles, until 1928, and stated that certain of the extensions mentioned in the Feustel report would have to be postponed for consideration in 1928. The committee held a lengthened meeting on Oct. 30, at which the company's replies were considered. The Mayor is reported to have said: "We thought we would get the provisions of the Feustel report, a 5c fare, and service, but now we know just how much we will get." The meeting was adjourned with a view of arranging an interview with the company's Manager, Major Burpee.

A further meeting between the street railway committee and Major Burpee took place Nov. 13, when it is reported that the company was willing to build all the extensions mentioned in the Feustel report, with three exceptions, but would submit those to arbitration at the times it was recommended they should be built. Some progress is reported to have been made on other points. The committee submitted a further series of questions, in regard to which, Major Burpee replied that the company adheres to its position that any extension of the franchise must be an exclusive one; that in order to assure the continuance of the 5c fare during the continuation of the franchise extension, that the most economical methods of construction must be followed, and that an efficient construction without concrete base is possible; the use of metal ties would cost \$5,000 a mile more than wood, but there would be a saving in excavation and depth of pavement. While the company would agree to arbitration to settle the price to be paid by the city for the property if it were decided to buy, it would not agree to an arbitration to settle service on somewhat similar lines to the Montreal Tramway Co.'s franchise; and it would not agree to accept all recommendations of boards of conciliation as to wages. This covers the main points raised in the questions. After further

consideration, the committee reported to the city council, Nov. 19, that it had proceeded with the negotiations as far as was possible and had concluded that no further concessions could be obtained from the company. The committee had therefore asked the company to submit for its consideration a draft memorandum of agreement embodying the changes to be made in the existing franchise agreement.

The Ottawa Allied Trades and Labor Council is reported to have passed a resolution expressing a desire for the continuance of the existing agreement between the city and the company, until its expiration, and that the city should then acquire the property under the franchise terms.

Windsor, Essex & Lake Shore Rapid Railway Collision.

Two Windsor, Essex & Lake Shore Rapid Ry. cars, moving in opposite directions at a fast rate, collided during a fog on the morning of Nov. 15. Orlando White, motorman of the southbound car, was killed, and 13 passengers were more or less seriously injured. The collision occurred near the Devonshire race track, about 3 miles outside the Windsor City limits. The cars are said to have been each proceeding at about 40 miles an hour, and telescoped one another for about 20 ft., the smoking compartments of each being demolished, and the front trucks lifted off the tracks. Earl McKeown, motorman of the north bound car, was arrested, pending investigation of, and the placing of responsibility for the accident. A charge of manslaughter was laid against him, Nov. 17, when he was remanded for 10 days, bail being fixed at \$10,000.

British Columbia Electric Railway Company's Enterprises.

The British Columbia Electric Ry. Co. has issued an attractive descriptive and illustrated booklet about its various plants on the B.C. mainland, and on Vancouver Island. It was compiled at the directors' request to inform those who have money invested in the company, upon the extent and class of the company's interests, in a way no financial report can do. In addition to sending a copy to each of its nearly 15,000 shareholders in Great Britain, the company is distributing 5,000 copies in British Columbia. In addition to its electric railways, which have 311.18 miles of single track on the mainland, and 65.40 on Vancouver Island, the company controls the Vancouver Power Co., the Vancouver Island Power Co., the Western Power Co. of Canada, the Vancouver Gas Co., and the Victoria Gas Co. The present capacity of the several power plants is 158,150 h.p., of which 29,500 h.p. is developed and utilized on Vancouver Island. Additions to the Western Power Co. plant are being made which will add considerably to the 158,150 h.p. at present developed and used in Vancouver, New Westminster and vicinity. The booklet contains 40 pages of descriptive matter and illustrations, and two maps, one showing in outline the portion of British Columbia in which the company operates, and the other showing its railways and power plants.

Montreal Tramways Co's Proposed Reorganization.

About two months ago, shareholders of the Montreal Tramways & Power Co., the holding company for the Montreal Tramways Co., and other public utilities companies, with which E. A. Robert and his associates are connected, appointed a committee to look into the several companies' affairs. It was stated, Nov. 17, that the committee had prepared its report, and that it will form a preliminary to a large plan of reorganization, details of which are being worked out. E. A. Roberts, President, is stated to have been in New York, Nov. 17, in connection with plans for financing the enterprise. It is stated that under the new plan a new holding company will be formed to take over the Montreal Tramways & Power Co., the Quebec, New England, Hydro Electric Corporation, the Canadian Light & Power Co., and also a new company to be formed to develop the Carillon water power. It is proposed to develop 40,000 h.p. there, and 20,000 h.p. on the Riviere du Loupe, Maskinonge county, which will be delivered to points in the New England States.

Hamilton and Dundas Street Railway Charter, etc.

It is stated that under the terms of the Hamilton and Dundas Street Railway Co.'s charter, a failure to operate cars for a continuous period of 60 days would bring about the forfeiture of the charter. The company ceased to operate between Hamilton and Dundas, Ont., at midnight, Sept. 5, notice to that effect having been given previously by the company to the Hamilton City Council and the Dundas Town Council. E. P. Coleman, General Manager, Dominion Power & Transmission Co., is reported to have said, Nov. 6, that the Hamilton and Dundas Street Ry. Co.'s affairs had been in the hands of its solicitors since Sept. 5. He could not say whether the company would go into liquidation or whether the Dominion Power & Transmission Co., which had been paying the deficits, would dispose of the property. One thing was certain, the Hamilton and Dundas St. Ry. would not be operated again by Dominion Power & Transmission Co.

Hamilton Street Railway Ticket Forgery.

In connection with an article about this matter which appeared in Canadian Railway and Marine World for November, on pg. 547, we are advised that the statement that "Hamilton Street Ry. has for some time past been the victim of forged tickets dropped into the fare boxes by passengers," is not correct, as the fact of the forgery was known for at least a month before the tickets reached Hamilton, and the company was able to seize the entire outfit before any issue had been made. It appears, however, that the men implicated had given out about 160 tickets to relatives and friends, and that a few of these were dropped into the fare boxes on the day the seizures were made. George Beckerson and W. A. Walton, who were arrested on the charge of forging the car tickets, pleaded guilty in Wentworth County Court, and were each sentenced to two years' imprisonment less one day.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	August, 1923	August, 1922
Gross	\$855,551	\$842,274
Expenses	627,050	616,540
Net	228,501	225,734

Calgary Municipal Ry.—A press report of Nov. 9, stated there was an operating deficit in October of \$1,402.34, compared with a surplus of \$2,621.76 for Oct. 1922. The number of passengers carried was 1,125,874, against 1,207,227 in Oct. 1922. The total revenue for the 10 months ended Oct. 31, is stated to have been \$687,049.35, and operating expenses \$700,135.94, leaving a deficit of \$13,086.59, against a revenue of \$724,821.18, expenditures of \$740,593.48, and a deficit of \$15,772.28 for the 10 months ended Oct. 31, 1922.

Cape Breton Electric Co.—

	Aug. 1923	Aug. 1922	12 mons. to Aug. 1923	12 mons. to Aug. 1922
Gross	\$56,753.66	\$49,640.28	\$685,064.29	\$641,663.80
Exp'ses	48,921.52	36,847.84	599,589.35	574,368.45
Net	7,832.14	12,792.44	85,474.94	67,295.35
Interest	5,641.46	5,696.97	67,609.95	67,437.37
Balance	2,190.68	7,095.47	17,864.99	*142.02
*Deficit.				

*Deficit.

Hamilton St. Ry.—The Hamilton, Ont., City Clerk is reported to have said, Nov. 19, that Hamilton St. Ry. receipts for the 3 months ended Sept. 30 were \$243,671.26, compared with \$245,990.25 for the corresponding months of 1922, and that the city will receive \$19,493.70 for percentage, and \$2,914.15 for mileage. This will make the total received by the city for the nine months \$70,756.

Montreal & Southern Counties Ry. Co.'s annual meeting was held in Montreal, Oct. 18. The following are the directors:—Sir Henry Thornton, President; S. J. Hungerford and Gerard Ruel, K.C., Vice Presidents; W. C. Chisholm, K.C., Solicitor; Major Graham A. Bell and E. R. Decary. The other officers are: W. B. Powell, General Manager; J. A. Yates, Treasurer; H. G. Forman, Assistant Treasurer; J. M. Rosevear, General Auditor; J. P. Hudson, Secretary. All the directors and officers, except Messrs. Powell and Hudson, are also either directors or officers, Canadian National Rys.

Montreal Tramways Co.—A dividend of \$2.50 a share for the quarter ended Sept. 30, was declared payable Nov. 2, to shareholders of record Oct. 22.

The Quebec Power Co. is reported to have sold an issue of £300,000 of 6% 20-year first mortgage bonds in London, Eng., at 95, being the balance of an issue of \$5,000,000, the remainder of which was sold in Canada and the U.S. The Q. P. Co. owns the Quebec Ry., Light & Power Co., the transfer of which is in process of consummation.

Winnipeg Electric Ry.—

	Sept. 1923	Sept. 1922	9 mons. to Sept. 30, 1923	9 mons. to Sept. 30, 1922
Gross	\$407,598	\$426,363	\$3,923,202	\$3,977,034
Expenses	277,596	293,454	2,749,237	2,924,615
Net	130,002	132,909	1,173,965	1,052,459
Fixed charges	72,980	75,816	672,915	575,535
Surplus	57,022	57,092	501,050	476,833

The net results for the month are a net divisible income of \$57,022.25, compared with \$57,092.31 for Sept. 1922. The gross earnings of the three utilities combined decreased \$18,764.96, or 4.4%, due to a decrease in the receipts of both railway and gas utilities. This was due to a decrease in the number of passengers carried daily, on account of favorable weather conditions for operating automobiles and the public walking, and a temporary general depression in business

conditions that prevails throughout every line of business in the city. The gas utility's gross earnings decreased \$11,150.53, or 15.3%, also due to prevailing local conditions. The electric utility's gross receipts increased \$8,507.76, approximately 10%. This increase is considerably below what it would have been under normal conditions. Practically every large power consumer's account decreased in the amount of power consumed, and had these accounts been on a comparative basis with the previous year, the increase due to an increase in the power accounts alone would have been more than twice what it actually was. The total operating expenses of the three utilities decreased \$15,585.54, or 5.4%. The decrease in operating expenses of both the railway and gas utilities compares very favorably with the decrease in gross receipts. The increase in the electric utility operating expenses was due primarily to an increase in the cost of power on account of increased output.

Electric Railway Passenger Fares.

Brantford Municipal Ry.—We are officially advised that increased fares were put in force by the Brantford, Ont., Municipal Railway Commission on Oct. 16. The new fare of 6c cash or 10 tickets for 50c, replaces the old rate of 5c cash or 5 tickets for 25c. No change has been made in school children's and children's tickets, which are still sold 10 for 25c; but instead of being available for children up to 12 years of age, they are now limited for children up to 52 in. high. There are no other fares now in force on the line.

British Columbia Electric Ry.—North Vancouver District Municipal Council's special railway committee is reported to be drafting an agreement with the company respecting fares and other matters.

Ontario Hydro Electric Rys.—Residents of the territory served by the Hydro Electric Rys., Toronto & York District, Mimico Division line, have applied to the Hydro Electric Power Commission of Ontario, Railways Department, which operates the line for the City of Toronto, for extension of the 5c fare zone from stop 22 from Toronto, to stop 29, i.e., from mile 3.1 from Toronto to mile 4.78. At the time of writing (Nov. 20) no decision on the request had been announced. The people concerned claimed that they are entitled to this extension on account of the Toronto Transportation Commission having extended its line to the Humber River, thus cutting down the Mimico Division car runs at the east end.

Suburban Rapid Transit Co.—An investigation is reported to have been initiated under the Manitoba Public Utilities Act, as amended, into the rates and tolls to be imposed and the nature of the service to be furnished by the Suburban Transit Co., a Winnipeg Electric Ry. subsidiary, in the Assiniboia, St. James and Charleswood municipalities, and the town of Tuxedo. It is stated that the object of the investigation is to try and establish a uniform zone rate in these municipalities and Winnipeg, and it is claimed that the zone rate for Winnipeg is 3c, while for the municipalities named it is 4c.

Publicly Owned Utilities and the Industrial Disputes Investigation Act.

As stated in Canadian Railway and Marine World for October, in an article dealing with the wage dispute between the Toronto Hydro Electric Commission and its employees, Mr. Justice Orde issued an interlocutory judgment, on Aug. 29, which prevented the board of conciliation and investigation, appointed by the Dominion Labor Department, from functioning. As also stated, the Labor Department gave notice of appeal. The members of the board were ex-Judge Snider, of Hamilton, chairman; F. H. McGuigan, appointed by the Minister of Labor to represent the Commission, and J. G. O'Donoghue, representing the employees. Justice Orde's decision was on an application by G. H. Kilmer, K.C., for the Commission, for an injunction to restrain the board from acting, on the ground that the Industrial Disputes Investigation Act does not apply to a publicly-owned utility. The decision not only denied the board power to act, but cast considerable doubt on the constitutionality of the act in its entirety.

Action on the Labor Department's appeal started on Nov. 19, at the assizes in Toronto before Mr. Justice Mowat. G. H. Kilmer, K.C., and J. R. Robinson appeared for the Toronto Hydro Electric Commission; Lewis Duncan for the defendants (the members of the board of conciliation and investigation having been named as such in the previous action); H. H. Dewart, K.C., for the Labor Department, and E. Bayly, K.C., Deputy Attorney-General, for the Ontario Government. Justice Mowat is reported to have stated that the act is one that has proved very valuable and that it would be unfortunate if it were to be found to be ultra vires. He suggested that perhaps the Ontario Government might pass legislation which would remove doubt as to its constitutionality. Mr. Kilmer said that the Commission was willing to let the matter stand and wait to see what action provincial legislatures might take, but Mr. Dewart insisted on obtaining a clean-cut decision from the court, as he considered it would take too long for nine provinces to pass legislation which would definitely remove doubts as to the act being intra vires. The action therefore proceeded, Justice Mowat being reported as saying, "I suppose I will have to try the case and start it on its long career to England."

The Minister of Labor, Mr. Murdock, and Jas. Gunn, of the electrical employees' union, were examined on Nov. 19 and 20. Mr. Murdock stated he would not have granted the board, in view of there being a publicly-owned utility concerned, if it had not been for dangerous labor troubles in other parts of the country. H. H. Couzens, the Commission's General Manager, testified, on Nov. 21, that the men were unlikely to strike at any time. He said that if the board was legally entitled to act, he had no objection to its doing so, but thought that its legality should be definitely determined before it took any action. Argument was set for Nov. 29.

Montreal Tramways Co. has bought from the Detroit, Mich., City Railway, 14 Birney safety one-man cars, which have been operated only for a short time. They will be used on short outlying stub lines in Montreal, where the traffic is very light.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—At the time of writing (Nov. 12), it is expected that the new station for the Lulu Island line, at Davie and Seymour Streets, will be in operation by the end of November. With the completion of the station, and some changes in the tracks, the traffic from the interurban line to Marpole and Kerrisdale, branching out on Lulu Island, will be diverted over Granville St. bridge to Seymour St., as far as Davie St. (Nov., pg. 548.)

Calgary Municipal Ry.—R. A. Brown, Superintendent, is reported to have stated that \$70,000 had been expended during 1923 on betterments; that plans for betterments for 1924 are being made, and that it is expected provision will be made for the expenditure of about \$70,000. (Nov., pg. 548.)

Fort William Municipal Ry.—The Board of Railway Commissioners has authorized Fort William, Ont., City Council to electrify the Canadian National Ry. track on James St., Fort William, Ont., between Frederica and Montreal streets, to connect its street railway tracks with the C.N.R. at Frederica and at Montreal streets, and to operate over the same.

Hamilton Radial Ry.—The Burlington Beach Commissioners and Dominion Power & Transmission Co. officials met recently to discuss the question of the Hamilton Radial Ry. tracks along the Beaches. It is stated that the raising of the levels on the highway by the Ontario Government has brought about an unsatisfactory state of affairs, and the company claims it should not be forced to pay the entire cost of raising the tracks up to the new level. No decision was reached as to what is to be done, but it is thought that the residents will appeal to the Board of Railway Commissioners for an order directing the tracks to be raised.

Kingston, Portsmouth & Cataraqui Electric Ry.—A press report states that the Kingston city board of works has approved of the company's plans to extend its tracks for 125 ft. on King St. (May, pg. 238.)

Montreal Tramways Co.—In connection with the company's application to the Board of Railway Commissioners in June for permission to extend the Atwater Ave. line across the Canadian National Ry., the Board suggested that the line crossing the C.N.R. at Guy St. be abandoned in favor of the projected extension of the Atwater Ave. line. The city council's executive committee recommended, in a recent report, that this plan be agreed to, on condition that the Guy St. line be not abandoned until the Atwater Ave. line has been built. A protest against this has been sent to the council by residents in the region served by the Guy St. line. Further consideration is being given to the matter by the council.

Financial men closely associated with the company are reported to be preparing plans for the development of water-power on the Riviere du Loup, about 70 miles northeast of Montreal, to supply power for operation of the company's railway and for affiliated enterprises. (Oct., pg. 492.)

Montreal & Southern Counties Ry.—The additions to the station at McGill and Youville streets, Montreal, is reported to be practically completed, and it is expected to have the enlarged building fully open to the public early in

December. A description of it was given in Canadian Railway and Marine World for August, pg. 406.

Progress is also reported as being made with the erection of the railway's new office building at St. Lambert, Que., which it is expected will be completed early in January, 1924.

New Brunswick Power Co.—The relaying of the track on Main St., between Douglas Ave. and Portland St., St. John, has been completed, and traffic was reported to have been resumed on Nov. 5. (Nov., pg. 548.)

Ottawa Electric Ry.—The new track on Bank St., between Pretoria Ave. and Fifth Ave., has been completed and cars are being operated over it. The temporary tracks have been removed. (Nov., pg. 548.)

Ottawa Electric Ry.—We are officially advised that a substation is being built on Albert St., Ottawa, to contain one 2,000 k.v.a. Westinghouse rotary converter. It is also proposed to erect a garage on Queen St. for motor cars and trucks, containing linemen's quarters and office for Electrical Engineer, with store rooms, etc.

Quebec Ry., Light & Power Co.—We are officially advised that there is under construction about 1,500 ft. of line on 8th Ave., Limoilou, connecting 8th Ave. and 5th St. with 8th Ave. and 10th St.

The company has also under construction an extension of its St. Malo car house to cover 600 ft. of track. (Oct., pg. 492.)

Toronto Eastern Ry.—Tracklaying between Whitby and Pickering, Ont., in which 80 lb. steel was used, and which was begun Oct. 25, has been completed. Tenders were received to Nov. 26 for rebuilding 14 trestles between Pickering and Bowmanville, and this work will be started as soon as the contracts are awarded. The trestles are located as follows: 4.4, 2.8, 1.4 and 0.5 miles west of Whitby; 1.2 and 2.1 miles east of Whitby; at Oshawa; 1.6, 2.0, 2.4, 2.6, 3.5 and 5 miles east of Oshawa, and over Bowman Creek at Bowmanville. Some of the new trestles will be of pile construction and others will have framed bents, while a few will include both piles and framed bents. The contract forms call for the demolition of the present structures, which have depreciated so as to be unfit for use, and construction of the new ones. (Nov., pg. 548.)

Winnipeg Electric Ry.—A car service has been placed in operation on the extension of Notre Dame St. line, westerly to Midland St. A 6-minute service is given during the day, and a 4-minute service during the morning and evening rush hours. (Nov., pg. 548.)

Winnipeg Electric Ry.—The extension of the Academy St. line from Lindsay St. to Kenaston Boulevard, construction of which was started Sept. 25, was reported to have been opened for traffic Nov. 16. (Nov., pg. 548.)

The Suburban Rapid Transit Co., a Winnipeg Electric Ry. subsidiary, has applied to the Municipal Commission, under the provisions of the Manitoba Public Utilities Act, to order the substitution of a continuous 45-minute service to Charleswood, via the Academy Road route, in place of the present service, which is operated at hourly and half-hourly intervals at different periods of the day.

Mainly About Electric Railway People.

Jos. Alfred Cote, who has been appointed Superintendent, Montmorency Division, Quebec Ry., Light & Power Co., vice J. A. Everell, resigned, was born at Quebec, Que., Nov. 13, 1887, and entered transportation service March 20, 1903, since when his record has been, March 20, 1903, to Sept. 15, 1903, messenger boy; Sept. 15, 1903, to Oct. 10, 1910, clerk in audit office; Oct. 10, 1910, to Dec. 15, 1912, accountant and cashier; Dec. 15, 1912, to Aug. 28, 1923, also storekeeper, timekeeper and car accountant; Aug. 28, 1923, to Oct. 13, 1923, acting Superintendent, Montmorency Division; Oct. 31, 1923, Superintendent, Montmorency Division, all in Quebec Ry., Light & Power Co's service.

P. W. Ellis and **George Wright** were renominated by Toronto City Board of Control on Nov. 23, as members of the Toronto Transportation Commission, which operates the street railway, and Roy Miller, of Roger Miller & Sons, contractors, was nominated to fill the vacancy caused by the death of his brother, Fred. R. Miller. The city council, on Nov. 26, by a majority of three, referred the recommendation back to the board for further consideration.

Arthur Gaboury, formerly Superintendent, Montreal Tramways Co., has been appointed General Manager and Secretary, Province of Quebec Safety League.

A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry., Mrs. McLimont and Miss Betty McLimont, returned to Winnipeg at the end of October from a trip to eastern Canada.

M. C. O'Donnell, who has, for some years, acted as Consulting Electrical Engineer for the Ottawa Electric Ry., has been appointed to that position, and will give his entire time to the company's electrical matters.

T. H. Purdon, K.C., who died in London, Ont., Nov. 14, aged 70, was director of a number of companies with headquarters there. He was one of the directors of the Southwestern Traction Co., which built an electric railway from London to Port Stanley, which reorganized as the London & Lake Erie Ry. & Transportation Co., and went out of business after the London & Port Stanley Ry. was electrified.

Lieut.-Col. G. C. Royce was presented recently with a morris chair by W. Wilkes, the oldest conductor, and R. Harris, the oldest motorman, on behalf of the Toronto Suburban Ry. employees, on retiring from the position of General Manager.

The Toronto Suburban Ry. has rented a portion of one of the Massey-Harris Co. factory buildings on Weston Road, at the northwest limit of Weston, Ont., for temporary use as a car house. The storage space secured will accommodate the cars operating on the T.S.R. Weston Division, which, owing to the Toronto Transportation Commission's rehabilitation work on the lines purchased recently by the City of Toronto from the T.S.R., are unable to have access to the T.S.R. Lambton or St. Clair Ave. (Toronto) car houses. This transaction gave rise to rumors that the Canadian National Ry. had bought the Massey-Harris Co's entire 40 acres property on Weston Road, but immediate denial was given the rumor by E. W. Oliver, Manager, T.S.R.

Electric Railway Notes.

The Quebec Power Co. is reported to have under consideration a plan for changing several of the street car routes in the city to improve the service.

Cape Breton Electric Co. has ordered 2 one-man safety cars from Utilities Equipment Co., New York, and 1 single truck snow sweeper from McGuire-Cummings Co., Chicago.

Calgary Municipal Ry. had a fare box stolen recently from one of its trailer cars, which had just been hauled into the yard. The box was discovered the next day near the Bow River, where it had been thrown by the thief, who had failed to open it.

The Winnipeg Electric Ry. has 56 cars equipped with electric heaters, 20 with hot water, and 245 with hot air. Approximately 1,800 tons of coal are required for the operation of the hot water and hot air equipped cars. Heating of cars costs the company approximately \$300 a day.

Edmonton, Alta., City Commissioners are reported to have called the Dominion Government's attention to the carrying on of coal mining operations under the city, which, it is claimed, is endangering the Edmonton Radial Ry. tracks on Jasper Ave. It is stated that the car tracks have sagged to such an extent that cars cannot pass each other.

The Quebec Railway, Light & Power Company has, a Quebec press dispatch states, decided to operate its Montmorency Division, from Quebec to St. Anne de Beaupre and St. Joachim, 28.60 miles, entirely by electricity, instead of partly by electricity and partly by steam, as heretofore. It is also said that the company is buying three electric locomotives.

London St. Ry. has lost its appeal to the county court judge against the raising of its assessment by the city assessors from \$5,000 a mile for straight tracks, and \$7,500 a mile for curves, to double these figures. The court of revision reduced the assessment to \$7,500 a mile for straight tracks and \$10,000 a mile for curved sections. The county judge confirmed this.

County Judge Macbeth heard, in London, Ont., on Nov. 6, appeals from the city court of revision on assessment matters, the most important being that of London St. Ry. Co. The company was formerly assessed at \$5,000 a mile for straight track, and \$7,500 a mile for curves. The assessors doubled these figures, and the court of revision cut the increase in half, leaving the assessment at \$7,500 a mile for straight track, and \$12,500 a mile for curves. Judgment was reserved.

The Montreal Tramways Co. has under consideration, in conjunction with the Montreal Tramways Commission, and the employees' union, a project for the provision of an employees' pension fund. The matter has been mentioned for some years past, but no definite action was taken towards carrying it into effect until this year. A comprehensive plan for pensions, sick benefits, etc., has been prepared, the funds to be provided by contributions from the company and the employees.

The Ottawa Electric Ry. Co. appealed to the court of revision against an assessment for 1924 of \$1,903,148 for business tax and on the poles, tracks, wires and car house machinery. The company was exempt from this under the 30-year

franchise, but the city claims that under the 5-year extension it has the right to levy the business tax. The company appealed on the ground that the agreement provides that in the event of a renewal, all its privileges are to be extended. The court decided in the company's favor, and it is said that the city will appeal to the county court judge.

The Brantford Municipal Railway Commission was sued in an Ontario court by the Utilities Equipment Co., New York, recently, to recover \$608 freight charges on 2 second hand, single truck street cars and equipment, shipped from Norwich, Conn., to Brantford, Ont. The Commission counterclaimed for \$510 on the ground that the motor equipment was not in good running order, as represented, and that some parts were not supplied. Judgment was given for the plaintiff for \$226 and costs with \$25 counsel's fee on the claim, and for the defendant for \$300 and costs with \$70 counsel's fee.

R. A. Brown, Superintendent, Calgary Municipal Ry., is reported to have said recently: "The use of automobiles is growing so rapidly that no one can possibly say what the next five years may bring forth. The problem is not Calgary's alone. The upshot may be that gasoline motor buses will eventually drive out electric street railways. On the other hand, the huge and growing consumption of gasoline may reach such a point eventually that it will force prices up to such an extent that automobile traffic will be curtailed. We are in a period of change, the result of which no one can forecast."

Electric Railway Employees' Wages, Etc.

British Columbia Electric Ry.—We are officially advised that the new agreement, putting into effect the conciliation board's recommendations, which had been mutually agreed to, has been signed by the company and the union's representatives. The agreement dates from Sept. 1, 1923, will continue for one year, and is binding on all employees referred to therein, except conductors, motormen and trainmen employed on the Lulu Island branch, and the Fraser Valley line. Motormen and conductors receive $3\frac{1}{2}$ c an hour increase over the schedule in force since Jan. 5, 1922, the new rates per hour being:—City and suburban lines: First 6 months, 52c; second 6 months, $56\frac{1}{2}$ c; third 6 months, $59\frac{1}{2}$ c; thereafter, 62c; one-man car operators, 68c; in work train service, 2c an hour in addition to above rates. Interurban lines: Passenger cars—First 6 months, 52c; second 6 months, $57\frac{1}{2}$ c; third 6 months, 61c; thereafter, 64c. Freight cars: First 6 months, 55c; second 6 months, 60c; third 6 months, 64c; thereafter, $66\frac{1}{2}$ c. Passenger brakemen: First 6 months, 52c; second 6 months, $55\frac{1}{2}$ c; third 6 months, $58\frac{1}{2}$ c; thereafter, 61c. Freight brakemen, 62c; trolleyman, 60c. Sunday work, time and a quarter; holiday work, time and a half. Extra men to be guaranteed a minimum monthly earning of \$87.50.

Calgary Municipal Ry.—The question of the apportionment of night work between the senior and junior employees, has been a source of contention for some two years. Some time ago the old strict

seniority rule was changed for a new plan, under which junior men worked 3 weeks on a night shift and one week on a day shift. The senior men now propose that another plan be tried for 6 months, under which the men will divide the night shifts on an equal basis, after which a vote will be taken on the merits of the three plans.

Dominion Power & Transmission Co.—A press report states that 26 of the junior employees at Hamilton, Ont., have been "let out," owing to the readjustment of the staffs of motormen and conductors, consequent upon the operation of the Hamilton and Dundas Street Ry. being discontinued. Except in a few instances, the men who have been let go have had less than 5 years' service.

Montreal Damage Suit Dismissed.

The Quebec Court of Appeal, sitting at Montreal, gave judgment, recently, allowing the Montreal Tramways Co.'s appeal against a Quebec Superior Court judgment, awarding H. H. Kavanagh, a student, \$6,779.25 damages for injuries sustained by a trolley pole falling on him, and reversed the judgment. Kavanagh, together with a number of other students, boarded a car at Notre Dame de Grace, and in the rush one of the boys seized the trolley rope and pulled the trolley down. This was adjusted, but after the car was restarted, the trolley was again pulled down, and fell among the boys, injuring Kavanagh severely. The Superior Court awarded him \$6,779.25 damages. Justice Rivard, in delivering the Court of Appeal's judgment, said the facts showed that Kavanagh was injured, not through any act or default of the company, but through the illegal act of one of a bond of students of which he was one. It was true that the trolley pole became separated from the rest of the mechanism and fell, but this was due to a derangement of the mechanism caused by the illegal act of an unknown student pulling at the rope. Article 6,054 of the Civil Code as to presumption of fault, did not apply, as it appeared that the company's employees did what was reasonable under the circumstances. Justice Guerin was the only one of the five judges who heard the case, who did not concur with the judgment.

Fort William and Port Arthur Electric Rys.—Through service of cars between Fort William and Port Arthur, Ont., was resumed Oct. 22, in accordance with the agreement reached by the Port Arthur Public Utilities Commission and the Fort William Public Utilities Committee, the service given being a 20 minutes schedule, the same as prior to the rupture on May 15. A Port Arthur press report of Nov. 5 said that the receipts of the Port Arthur Civic Ry. for the 10 days ended Oct. 31, were \$5,221.81, as compared with \$5,286.43 for the 10 days ended Oct. 22, when the cars ran only to the boundary between the two cities.

The Suburban Rapid Transit Co., Winnipeg has been authorized by the Manitoba Provincial Secretary, under the Public Utilities Act, to discontinue its electric car service across the Canadian National Rys. bridge at St. James, provided all transfer privileges accorded to passengers from points east and west of the intersection of St. James St. and Portage Ave., continue to be observed. The order was put into effect Nov. 25.

Marine Department

The World's Largest Drydock Opened at St. John, N.B.

Drydock Dimensions:—Length on keel blocks, 1,150 ft.; minimum entrance width, 125 ft.; draft on entrance sill, h.w.o.s.t., 42 ft.; inner docking chamber length, 500 ft.; outer docking chamber length, 650 ft.; minimum draft entrance wharves, l.w.o.s.t., 32 ft.

Drydock Equipment:—Ten 15-ton capacity electric capstans; one 15-ton travelling crane, useable at any point around dock; one 60-ton fixed derrick on fitting-out wharf; compressed air and electrical energy available at all points around dock; self-contained fire protection system; sewerage disposal system for

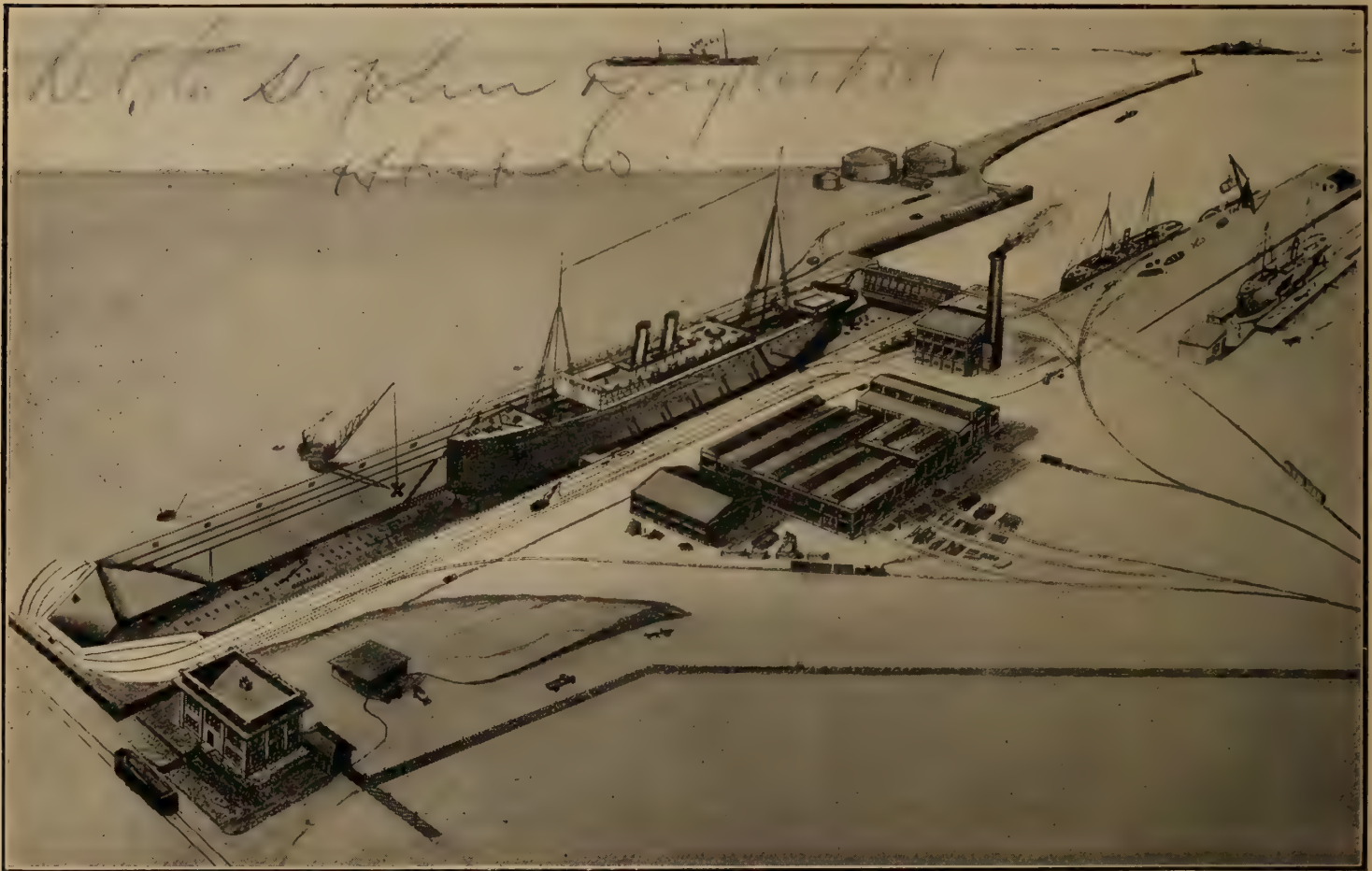
Construction Data:—Excavation for dock started Oct. 15, 1918. Excavation for dock completed July 31, 1921. Rock removed, 400,000 cu. yd. Concrete in dock started July 31, 1921; completed Sept. 22, 1923. Concrete placed, 100,000 cu. yd. Repair shops started June, 1922; completed Oct., 1923. Marine slipway started Sept. 1, 1923; completed Oct., 1923.

The Harbor Development and Drydock and Ship Repairing Plant.

The Dominion Government has had under construction in Courtenay Bay,

final adoption of the scheme of improvements that is now approaching completion.

Courtenay Bay.—The accompanying map of St. John harbor shows the present deep water wharves and accommodation in the main harbor, and the location of Courtenay Bay and its relation to St. John and the Canadian National Rys. Courtenay Bay is particularly well adapted to the further expansion in harbor and terminal facilities required by St. John. It has a considerable area, an advantage over the present main harbor, and it is free from objectionable cur-



The St. John Drydock & Shipbuilding Co.'s Drydock, Marine Railway, Fuel Tanks, Repair Shops and Offices at St. John, N.B.

docked ships; electrically operated unwatering pumps, capable of emptying dock in 4 hours; self-contained flood lighting system.

Power Plant:—Boiler capacity, normal rating, 2,000 h.p.; generator capacity, 2250 k.v.a.

Repair Plant:—Machine shop, plate shop, boiler shop, blacksmith shop, joiner shop and loft.

Marine Slipway:—Eighteen hundred tons deadweight capacity. Will accommodate ships up to 300 ft. long, and any draft aft up to 20 ft., with facilities for side slipping.

Direct rail connection from Canadian National Rys. main line to alongside drydock, marine slip and entrance berths.

Crude oil fuel station alongside entrance to dock.

St. John, N.B., for several years, a large and comprehensive scheme of harbor development, the object of which is to cope with the increasing demands of Canada's large export and import trade. In conjunction with these improvements, a drydock and ship repair plant have been built.

By reason of its location on the Atlantic coast, with the shortest rail haul to the interior, and the terminus of two large transcontinental railways, St. John is Canada's chief winter port, and, as regards volume of trade, is Canada's second ocean port. The facilities to take care of the trade, in St. John's main harbor, have been inadequate. During recent winters many ships have had to anchor awaiting berth space. These conditions led to the consideration of the advantages of Courtenay Bay and to the

rents that make navigation and berthing of vessels difficult. There is ample room for industrial, railway and terminal development at the head and on the east side of the bay. Easy access is afforded the Canadian National Rys., which have lines on both sides, one of which terminates at the drydock.

The Contracts.—The works were comprised in two contracts, known as the Harbor Works Contract and the Drydock Contract. These contracts were taken over in July, 1918, by the St. John Drydock & Shipbuilding Co., Ltd., which is incorporated under the Dominion Companies Act, most of the principals in which have been engaged for some years in harbor developments on the Great Lakes and in transportation and shipbuilding. The Harbor Works Contract provided for the construction of a break-

water, entrance channel and basin and deep water wharves, and included the following works: 2,500 lin. ft. of break-water extension; the dredging of an entrance channel 500 ft. wide, with 22 ft. depth at lowest water (maximum tide 28 ft.), involving the removal of about 2,500,000 cu. yd. of sand, gravel and clay; the dredging of a large turning basin to a depth of 32 ft. at lowest water, requiring the removal of about 4,500,000 cu. yd. of sand, gravel and clay; the removal of some 140,000 cu. yd. of submarine rock, leading into the entrance to the drydock; the construction of a series of deep water piers.

Successive Dominion Governments have for a number of years endeavored to interest capitalists in investing in drydock and ship repair plants by undertaking to pay, as a subsidy, $4\frac{1}{2}\%$ a year for 35 years on the cost of the dock and repair yard built, on condition that the total cost of the drydock and yard shall not exceed \$5,500,000 for a dock of the first class, the general dimensions of which shall not be less than: length on blocks, 1,150 ft.; breadth at entrance, 125 ft., and depth of water over entrance sill at high tide 38 ft., and be capable of accommodating with ease and safety, the largest naval or commercial ship afloat of the time the dock construction is undertaken.

In 1911 the then Dominion Minister of Public Works succeeded in interesting old country capitalists, under the leadership of Norton Griffiths, in undertaking the construction of a first class drydock and repair yard at St. John. Construction was started in 1912, and in 1914, at the outbreak of the war, extensive operations were under way on the excavation and preparation of the drydock site. Like many other large projects, this soon felt the pinch of war times, with the resultant shortage and high price of both labor and material, so that after struggling along through the first two years of the war, further operations became impossible, construction operations ceased and the Norton Griffiths Co. was relieved of further obligations in connection with the drydock undertaking. Not until the end of the war, could any further interest be aroused in this undertaking which lay dormant until the autumn of 1918, when the St. John Drydock & Shipbuilding Co., representing Canadian capital entirely, took up the task where the Norton Griffiths Co. left off, assumed the obligations of the original undertaking, and has carried on the work continuously up to the present, when the project is in its final stage of completion.

The general dimensions of the drydock, as established by the terms of the Drydock Subsidies Act, are only slightly exceeded in actual construction. The overall length is 1,150 ft., the clear width at the entrance 125 ft., with 42 ft. of water over the entrance sill at extreme high tide. A comparison of these dimensions with those of other modern drydocks shows that the St. John drydock is actually the largest in the world. Bearing in mind that the largest ship afloat today, the White Star liner *Majestic*, is only 956 ft. long and that naval authorities are generally in agreement in the conclusion that ship dimensions have now reached their economic maximum, it would appear that entirely unnecessary length is provided in the St. John drydock. However, as it is being provided with an intermediate sill which will permit the whole dock to be divided into two entirely separate docking chambers, the inner one 500 ft. long and the outer one 650 ft. long, it will be appre-

ciated that this length is justifiable, as it provides for the accommodation, at one and the same time, of at least two moderate sized ships, and still can be utilized when the occasion arises, as a single docking chamber with sufficient capacity to accommodate the largest ship afloat today.

Concrete has been used throughout in the dock construction, with the slight exception that granite has been used to form the outline of the stops in the outer entrance and inner sill for the reception of the floating caisson, where concentrated pressures and wear will be excessive.

The cross-section of the docking chamber was an all important factor in the determination of the actual dock wall section. With the vast change in ships' cross section, from the older sailing ship, with its sharply defined keel and high sheer, to the modern flat bottomed ship, has come a like change in drydock chamber section. The older ships, possessing in themselves no ability to remain upright and on an even keel when removed from their natural element, required the extensive use of shores or props to support them when docked. This shoring necessitated a continuous flight of altars or steps in the face of the docking chamber walls for the reception of the ends of these shores. Today the need of lateral support is minimized by the wide bearing taken by the flat bottom of the modern ship on the dock floor, and the altar, as a result, has become an intermediate working level between dock coping and bottom, instead of a shoring support. To make these usable by workmen, has brought about a demand for wider altars, but even in the more modern drydocks this increased width has not yet been amply provided. In order to meet this requirement, and at the same time keep the width of docking chamber to a desired minimum at coping level, so that cranes of an excessively long working radius are not necessary, one solution only has been found, that of reducing the number of these altars to a minimum. A study of this question with reference to the St. John drydock resulted in three only being provided, two of these $2\frac{1}{2}$ ft. wide and the third and lowest 3 ft. wide. While the extra altar width, provided in this dock over altar widths as used in contemporaries such as the Champlain dock at Lauzon, Que., and the Commonwealth dock at South Boston, Mass., seems slight, the extra assurance of safety felt by one actually traversing these altars is greatly out of proportion to the increase in width. One of the accompanying illustrations of the dock's interior shows the arrangement of the altars.

Distribution Tunnel.—The modern drydock is an extensive open air workshop, in which innumerable intensive operations have to be carried on, all at the same time, yet with the least possible amount of confusion and interference, and practically all these operations require the use of equipment mechanically operated. Furthermore, because of the rapidity with which docking charges mount up with each additional hour that a large ship lies in the drydock, and because of the loss sustained by the owners while the ship is out of service, every provision must be made for conducting these operations as rapidly and continuously as possible. With these above requirements in mind, it was determined that a readily accessible, yet entirely unobstructive, distribution system must be provided throughout the perimeter of the dock, a system that would provide at

any and every point in the docking chamber such essentials as electricity for light and power, compressed air, water and even live steam. After consideration had been given to systems employed on other modern docks, such as those at Lauzon and South Boston, it was determined to make a rectangular tunnel the basis of the distribution system; this being located directly below the top of the wall and completely circuiting the whole perimeter of the dock, and of sufficient cross section to permit the passage of workmen, even with pipe lines installed on the tunnel sides. Originally it was intended to make this tunnel accommodate on its sides not only all water, air and steam lines, but also the cables carrying the electric energy to the various points about the dock. On further consideration of this, it was determined that a much cheaper and much more satisfactory layout of the cables would be obtained by providing a series of fibre conduits in the concrete, directly in rear of the tunnel, with pull boxes at 50 ft. intervals, opening into the tunnel from the conduit line.

The tunnel originates in the pumping station, located in the outer end of the north wall of the dock, and extends completely around the dock to a point in the south wall opposite the outer end of the pumping station. Between the pumping station and the power house, a similar tunnel is provided, so that a complete underground gallery is provided from the dock power house, on the north or left side of the dock entrance, to practically the extreme outer end of the south or right wall of the dock. By means of this tunnel, the requirements of electrical energy for light and power, compressed air for operating air tools, and water for fire protection, washing down the dock floor and to meet a docked ship's needs, are provided at all points around the dock and in an entirely unobstructive manner.

Electrical Distribution System.—The electrical energy requirements for the drydock are varied and extensive. Because of its adaptability and positive result in energy supplied, all the dock operating equipment is provided for direct motor operation, using in every case 550-v., 3-phase, 60-cycle alternating current. The unwatering, drainage and sump pumps of the pumping station present the largest demand at one point, and so a separate feeder circuit is provided to take care of this load of 2,465 h.p. The sluice gate valves on the filling and emptying culverts present a demand of only 75 h.p., but at five different and widely separated points in the dock's perimeter. Similarly, the 10 capstans, each operated by a 45 h.p. motor, require the supply of electric energy at 10 different points around the extent of the drydock. At either end of each caisson stop is a tap to provide energy for the operation of the 15 h.p. motor driven caisson unwatering pumps. In addition, the complete lighting of the dock with flood lights requires no less than 48 outlets in the dock chamber walls. By effecting a number of combinations of these demands, the whole distribution of power and lighting energy is obtained by the use of only 6 feeder circuits, and these combinations are so arranged that, even in the event of an interruption occurring in one of the circuits, there is still another available, supplying a similar combination of equipment demands, which can be called into use to replace other units of equipment rendered useless by this short circuit.

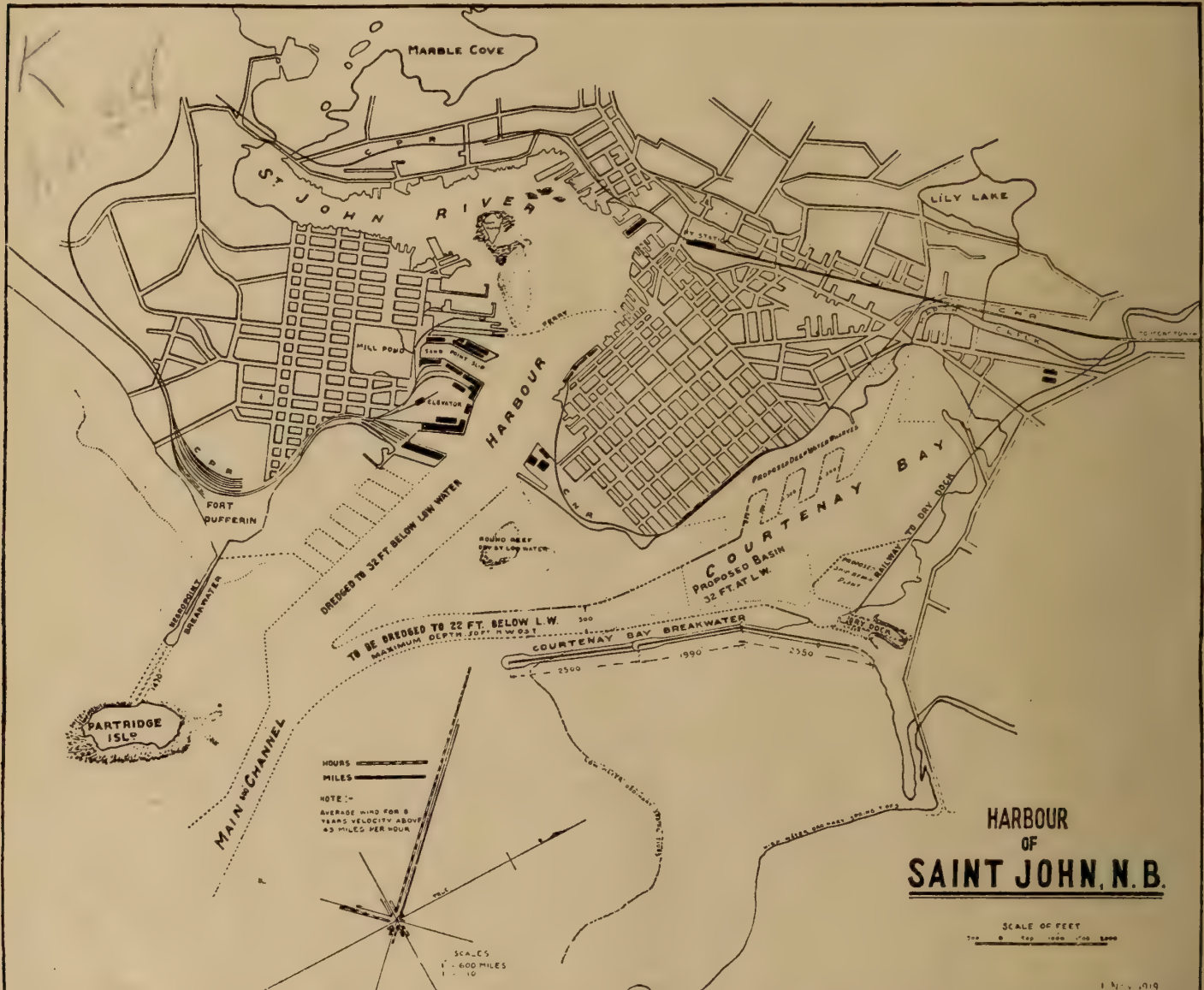
Lighting Equipment.—For dock lighting, flood lights will be used entirely,

and these will be arranged separately, one group for lighting the dock chamber and the other to light the top of each dock wall with the working area in rear. At intervals of 50 ft. along the face of each wall, 2 ft. above high tide level, are recesses approximately 2 ft. square by 15 in. deep. In each of these will be a wide angle flood light mounted on swinging base, so that the direction of the light can be altered either in a horizontal or vertical direction. Mounted on the back wall of each of these recesses will be a 3-outlet plug box of absolutely watertight and weatherproof construction. Two of the three outlets will be on the lighting circuits, giving a plug

tem will be accommodated in one of the distribution conduits, with outlets for attaching portable telephones at control points such as the pumping station, the different valve recesses and the floating caisson, so that the dock master can communicate directly with any of his assistants or operators from any point about the dock.

Compressed Air and Water Mains.—The air compressors are located in the power house and the air mains follow the same course as the electric circuits from this point through the end of the pumping station and thence around the dock in the distribution tunnel, the main being bracketed on the tunnel walls. At

damage. Water, at city pressure, will be similarly distributed, with all mains and control valves in the wall tunnel. For fire protection, hydrant connections are provided on the water main in the tunnel, directly alongside manholes in tunnel roof, with regular wall type hose brackets carrying connected lengths of hose on the tunnel wall beside each hydrant. From the same water main other pipes are carried down and in the concrete of the walls, to outlets in the face of the wall a few feet above dock floor level. Each of these outlets is fitted with standard hose connection, the shut-off valve being located in the tunnel. These down pipes provide the water for



connection to the flood light in the recess and a second plug connection for an extension cord to provide for taking lights to the bottom of the dock and underneath a vessel on the blocks. The third and larger connection, with a capacity of 50 amperes, is provided for operating electrically driven drihs or small portable motor driven welding units. Similar wide angle flood lights, but of greater capacity, will be located at the inner and outer ends of each dock wall, elevated to a height of about 30 ft. above wall level on removable towers, so that the light can be directed most effectively over the full extent of the dock wall or the working area in rear.

An intercommunicating telephone sys-

tem will be accommodated in one of the distribution conduits, with outlets for attaching portable telephones at control points such as the pumping station, the different valve recesses and the floating caisson, so that the dock master can communicate directly with any of his assistants or operators from any point about the dock.

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flushing down the dock floor or scrubbing a ship's sides and bottom.

The sewerage system provided is rather an innovation. Heretofore, even in the most modern docks, immediately a ship is received in the dock and the water removed, all the ship's lavatories, bilge water discharges, steam drains, etc., are made inoperative for the protection of the workmen engaged around or under the ship on the dock floor, and to prevent the accumulation of offensive waste discharges which, under such conditions, would be made on the dock floor from the continued operations of these outlets. Putting these conveniences out of operation has very materially handicapped the ship itself, and also has been

the source of a great loss of time with workmen, employed in the interior of a ship. When the White Star s.s. *Majestic* was docked in Oct., 1922, in the Commonwealth drydock at Boston, owing to all lavatory and waste discharges, etc., of the ship being closed while in the dock, the majority of the crew of some 1,100 persons had to be removed from their quarters on the ship and accommodated at hotels in the city, not only a large item of expense, but a very great inconvenience and loss of time to the many members of the crew whose services were still urgently required on the ship for repair and overhaul work incidental to the docking operation. To eliminate such inconvenience and expense, the St. John drydock is provided with a complete sewerage system, so that a ship may be received in dock and have all necessary work done without any interruption whatever to the operation of its usual waste discharges.

The pumping station occupies an 80 ft. section of the north wall of the drydock, widened out sufficiently to give required wall sections between dock and station chamber, and again in rear of the 22 ft. wide space representing the pumping station itself. Below the three main pumping units, the suction chamber, 22 ft. wide by 14 ft. high, with roof at approximately dock floor level, is continuous, and has the two separate and independent 8 x 10 ft. unwatering tunnels, from the outer and inner docking chambers, entering this suction chamber at its inner end. Each of these tunnels is controlled by a sluice gate valve located at this point of junction with the main suction chamber, thus allowing for their independent control and the pumping out of either the outer or inner chamber independently of one another. The motor driven valve operating machinery is thus located in the inner end of the pumping station and so concentrates the control of the pumping operation entirely at the one point in the station itself.

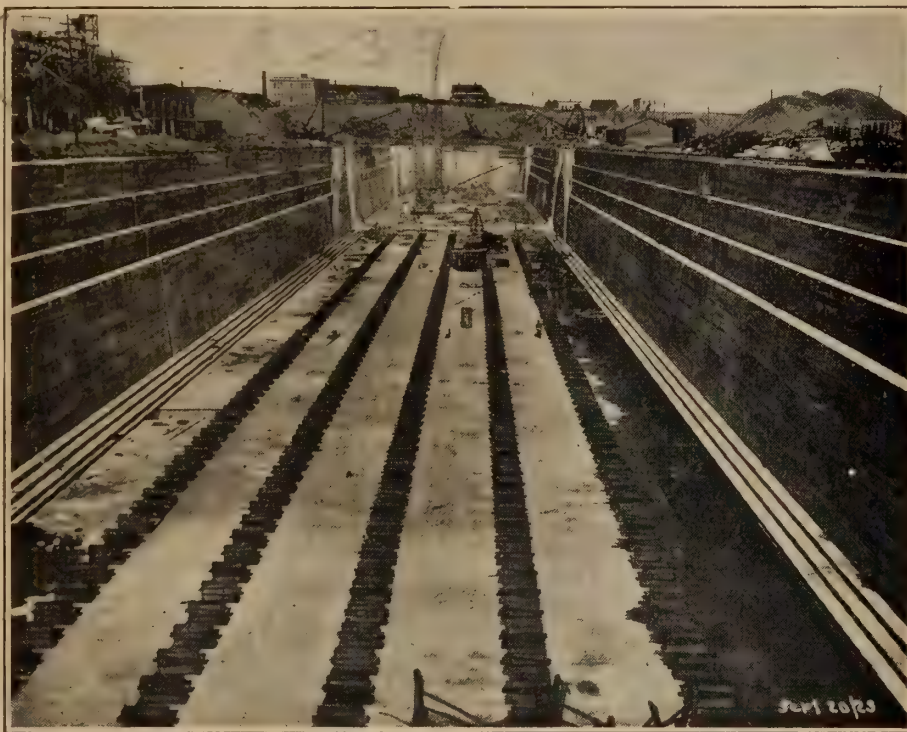
The pumping equipment was supplied by the Goldie & McCulloch Co., and consists of three 48 in.-42 in. Rees Roturbo patent pressure chamber, double suction, volute, centrifugal pumps, direct connected to 750 h.p., Westinghouse vertical, self starting, synchronous motors, for the emptying of the dock, and each of these large pumps is provided, on its discharge end, with a 42 in. single door type non-return valve and a 42 in. motor operated gate valve, for temporarily or completely isolating the pumps from the discharge tunnel as desired. To handle dock drainage, two 15 in.-12 in. pumps, of the same type as the main pumps, are provided, each driven by a Westinghouse 100 h.p. vertical induction motor with automatic starter and float control switch, and a 15 in.-4 in. Rees pump driven by a 15 h.p. motor constitutes the sump pump required.

The caisson for closing off the docking chambers from the outside water when the dock is to be emptied, is of the floating type generally used in large modern drydocks, and that provided at St. John follows very closely, both in design and operation, similar floating caissons with which such drydocks at the Champlain one at Lauzon and the Commonwealth one at Boston are equipped. In fact, as the Commonwealth drydock one in every way proved so entirely satisfactory, its design and construction were duplicated at St. John, changes in dimensions only being made to suit the different cross section of the latter drydock entrance and intermediate sills. The caisson is

simply a vessel of rather unusual lines and cross section. Both ends are identical in outline and terminate in a distinct, projecting stem, and this same projection carries as a keel across the bottom between uprights. Faced on either side with oak, this projecting stem and keel, when the caisson is in place across the dock entrance, make a complete and continuous contact with the projecting granite stop in the outer or intermediate entrance walls and floor, the pressure of water on one side of the caisson only, with the drydock empty, creating the desired water seal between oak and granite. Below deck no. 2, which is itself watertight, the caisson is divided into 5 separate chambers—2 in either end of similar dimensions, and a large middle compartment. This middle section has 2 openings, one on either side, connecting to the outside, but controlled by double gate valves. Similar connection is provided to the end compartments from the centre division, also under gate valve control. All gate valves have extension spindles with operating headstocks on

twin valve control is provided on the scuttling connections to the sea to insure these being always capable of being closed off, should one valve become plugged or jammed in its open position. The only unusual feature of the St. John caisson is in its being provided with a standard gauge track across its top, thus providing rail connection from one side to the other of the dock by this route. The one caisson now completed and in place across the outer dock entrance, was fabricated and erected by the Dominion Bridge Co.

The repair plant consists of, in addition to the power house, a machine shop, a boiler, blacksmith and fabricating shop, as well as a carpenter shop and stores building with second story accommodation for a mould loft. These buildings are all of reinforced concrete construction and are located immediately alongside the dock and parallel to its length, yet with ample working area between buildings and the side of the dock. An underground tunnel connects all buildings with the power house, so that electrical



Portion of St. John Drydock & Shipbuilding Co.'s Drydock at St. John, N.B., showing altar arrangement. Photographed from caisson Sept. 20, 1923.

deck no. 2.

When afloat with a light draft of approximately 28 ft. these compartments are dry, except for such water as may be carried in the end trimming compartments to maintain the caisson on an even keel longitudinally. When the drydock is to be closed, the caisson in its above condition is floated into position across the entrance, where its keel will be, at high tide, 14 ft. or so above the entrance sill and the stem clear of the wall stops. The valves on the side connections are then opened, admitting water to the centre compartment, until the caisson sinks to a position of rest on the sill, its stem and keel in contact throughout with the face of the granite stop. To remove it again from this position in opening the dock, this water ballast is pumped overboard by the 12 in. vertical motor driven pumps located below deck no. 2, bringing the caisson again back to its light draft condition, when it can be floated out of the dock entrance. The

energy, steam for heating and power, compressed air and water will be supplied to each and all, with nothing in the nature of wires or pipes above ground to interfere with, or be interfered with by, the movement of materials between the buildings and the dock. These buildings are equipped throughout with all necessary machines of sufficient size to handle any class of repair work that may originate from any ships which the drydock itself can accommodate.

The power house installation consists of a battery of four 500 h.p. Robb water tube boilers, equipped for firing with crude oil fuel. Two non-condensing De Laval steam turbines and one Wait mixed flow condensing turbine, each direct connected to 1,100 h.p. Allis Chalmers 550-volt, 60-cycle, alternating current generator, constitute the power plant. The main switchboard, controlling the whole of the electrical system of the dock and yard, is located in the power house and has incorporated in it panels to provide

for the supplying to any outside system of any surplus energy available from this plant, in excess of the demand of the dock and shops themselves. Two 2-stage belt driven air compressors, each driven by a 300 h.p. synchronous motor, are installed in the turbo generator end of the power house, to provide the air requirements of the drydock and repair shops.

Cranes.—The drydock is being equipped with a travelling locomotive type crane with a lifting capacity of 20 tons at 80 ft. radius, and this machine, with the track layout, will reasonably serve not only all parts of the dock, but the repair yard itself. In addition, a fixed derrick of 75 tons capacity at 65 ft. radius is being provided on the wharf at the entrance to the dock, so that heavy lifts such as arise with the placing or removal of ships' boilers, warships' guns, etc., can be made while the ship is afloat when hull repairs are not required.

Slipway.—In order to accommodate small ships, which if received in the drydock for repairs, would be subject to docking and lay day charges quite out of proportion to their size, a slipway is provided alongside the dock entrance, which will accommodate any ship up to 250 ft. long with a dead weight not in excess of 1,800 tons. The slipway consists of a carriage or cradle, fitted with keel and bilge blocks, travelling on a wide gauge inclined track, extending down to below low tide. The ship to be docked is floated, at high tide, to a position in contact with the cradle lowered to the bottom of the incline. The keel and bilge blocks are then adjusted to fit the ship's bottom and then carriage and ship are slowly hauled up the grade, by a large winding engine at the head of the slipway. The cradle thus receives the full ship weight and then is drawn to the top of the incline, when the ship is then in a position entirely above high tide level and accessible at all points for continuous repair or overhaul operations. This slipway is provided, in excess of the repair yard equipment required for the main dock, under the terms of the Drydock Subsidies Act, but by its addition to the other yard facilities, it is anticipated that every call for ship repair work, no matter how large or how small, can be properly accommodated, thus fulfilling more completely the intended object of this project.

The foregoing descriptive matter has been reproduced from a paper on the construction of the drydock, by E. G. Cameron, Chief Engineer, St. John Drydock & Shipbuilding Co., which he read before the Engineering Institute of Canada's St. John branch recently.

The Company's Personnel.—The St. John Drydock & Shipbuilding Co's directors are James Playfair, Midland, Ont., President; D. S. Pratt, Midland, Ont., Vice President and General Manager; Thomas A. Duff, Toronto, Secretary Treasurer; F. W. Grant, Midland, Solicitor; George McAvity and J. E. Moore, St. John, N.B.; W. E. Phin, Hamilton, Ont.; W. B. Sheppard, Waubaushene, Ont.; D. L. White, Midland, and J. B. Craven, New York.

Great Lakes Levels.—The United States Lake Survey reports the monthly mean stages of the Great Lakes for October as follows, in feet above mean sea level:—Superior, 602.06, against 602.10 in September; Michigan-Huron, 579.38, against 579.64; St. Clair, 574.19, against 574.49; Erie, 571.25, against 571.55; Ontario, 244.65, against 244.03.

The Opening of the Drydock and its Attendant Functions.

The opening of the drydock at St. John on Oct. 29, was the occasion for a large gathering of persons particularly interested in marine matters, who were the company's guests. Most of those from Quebec and Ontario assembled in Montreal on the morning of Oct. 28, and left there shortly after noon on a special C. P.R. train, consisting of a compartment observation sleeping car, 4 compartment sleeping cars, a dining car, a colonist car and a baggage car, among those on board being the following directors, etc.: D. S. and Mrs. Pratt; Thomas A. and Mrs. Duff; F. W. and Mrs. Grant; W. E. Phin, D. L. and Mrs. White. Much regret was expressed at the absence of the President, James Playfair, who, on account of pressure in business in connection with the Great Lakes Transportation Co., of which he is also President, and other matters, was unable to attend. Among the guests were Lt. Col. H. Cockshutt, Lieutenant Governor of Ontario, and his aide-de-camp, Lt. Col. Fraser; C. C. Hele, General Secretary to the Premier of Ontario; R. W. Bruce, naval architect and marine engineer, Washington, D.C.; Hugh Calderwood, Chief Surveyor for Canada, American Bureau of Shipping, Barrie, Ont.; K. M. Cameron, Chief Engineer, Public Works Department, Ottawa, and Mrs. Cameron; S. R. Campbell, C.A., Montreal; E. R. Carrington, President, Thiel Detective Co., Montreal; H. M. Davy, in charge of test borings, Public Works Department, Ottawa; Manning W. Doherty, M.L.A., Toronto; Lt. Col. E. G. M. Cape, D.S.O., Montreal; G. H. Flood, Contract and Purchasing Agent, Marine and Fisheries Department, Ottawa; James French, Chief Surveyor, United States and Canada, Lloyd's Register of Shipping, New York; W. I. Hay, Principal Surveyor for Canada, and Duncan McArthur, Principal Engineer Surveyor for Canada, British Corporation for Survey and Registry of Shipping, Montreal; Wm. Inglis, President, John Inglis Co., Toronto; Sir Joseph W. Isherwood, Bart., London, Eng., and New York; Major T. C. Keefer and Mrs. Keefer, Ottawa; A. MacCorkindale, New York Manager, Morse Drydock & Repairing Co.; T. M. Melrose, Dismantling Engineer, St. John Drydock & Shipbuilding Co., Drummondville, Que.; H. W. Murray, bond broker, Toronto; J. W. Nicholl, Manager, Furness Withy & Co., Montreal; P. Pagano, Bedford Construction Co., Halifax, N.S.; T. A. Somerville, of E. G. M. Cape Co., and Mrs. Somerville, Montreal; J. H. Spence, K.C., Toronto; Col. H. A. Stewart, D.S.O., of Lukis, Stewart & Co., insurance agents, Montreal; R. J. Taylor, Secretary, Willcox, Peck & Hughes, insurance, New York; Capt. E. E. Tedford, General Superintendent, Canadian Government Merchant Marine, Montreal; T. C. Warkman, Salvage Association, Montreal; J. L. Weller, ex Chief Engineer, Welland Ship Canal, now President, Canada Pipe & Products Co., Hamilton, Ont.; J. Wilkinson, Manager, Midland Shipbuilding Co., Midland, Ont.; G. A. Wood, of Carter & Wood, insurance, freight and ship brokers, Montreal; Acton Burrows, Proprietor, Canadian Railway and Marine World. D. S. Pratt, Vice President and General Manager, St. John Drydock & Shipbuilding Co., who was in general charge of the party, had made most admirable arrangements, and proved an excellent host. He was ably assisted by W. C. Birrell, of the company's staff at St. John, who met the party at Montreal and accompanied it to

St. John. The C.P.R. was represented by A. B. Burke, Travelling Agent, Montreal, who had charge of the berthing and other arrangements, which were most satisfactory, as also was the dining car service. J. Harry Smith, Canadian Press Representative, C.P.R., also accompanied the party, and A. Williams, Superintendent, Farnham Division, C.P.R., travelled on the train from Montreal to Megantic. St. John was reached early on the morning of Oct. 29, the party being received by Frank M. Ross, General Manager, St. John Drydock & Shipbuilding Co., who made most complete arrangements for accommodation there. A party of C.P.R. officials, including A. D. MacTier, Vice President, Eastern Lines; W. R. MacInnes, Vice President, Traffic Department; G. M. Bosworth, Chairman, Canadian Pacific Steamships Ltd., and Commander J. T. Walsh, R.N.R., Manager, Canadian Pacific Steamships Ltd., went on the regular train, which preceded the special train by half an hour, travelling in Mr. MacTier's business car, St. Andrews.

The Governor General, Lord Byng of Vimy, and some members of his staff, travelled to St. John by the Canadian National Rys., as also did Hon. A. B. Copp, Secretary of State; and Hon. J. H. King, Minister of Public Works. Sir Henry Thornton, President, Canadian National Rys., who was on an inspection trip in the maritime provinces, went, accompanied by J. E. Dalrymple, Vice President, Traffic Department; S. J. Hungerford, Vice President, Operation and Construction Departments; and W. S. Thompson, Director of Publicity. A number of C.N.R., Atlantic Region officials also attended, including L. S. Brown, General Manager; W. U. Appleton, General Superintendent; A. F. Stewart, Chief Engineer; A. T. Weldon, Traffic Manager; R. W. Simpson, Assistant to General Manager; F. W. Robertson, General Passenger Agent; M. F. Tompkins, General Freight Agent; G. E. McCoy, Superintendent of Equipment; and W. N. Rippey, Superintendent, Moncton Division.

Prior to the opening of the drydock, the company entertained some 400 guests, including many from a distance, and a large number of St. John people, at luncheon in the moulding loft. In the absence of President James Playfair, D. L. White, of Midland, another director, occupied the chair, and, after proposing the King's health, spoke on a number of marine matters. J. E. Moore, another director, proposed the toast of Courtenay Bay, which was responded to by Sir Douglas Hazen, Chief Justice of New Brunswick, and former Minister of Marine and Fisheries, in a magnificent speech, most beautifully worded, and full of valuable information and patriotic utterances. The Province of New Brunswick and City of St. John was responded to by Lt. Gov. W. F. Todd, who occupied considerable time; by Premier Veniot, Mayor Fisher, of St. John, Hon. J. B. M. Baxter, M.P. for St. John City and St. John and Albert Counties, whose speech, commendably brief, was remarkably to the point and most appropriate, also by Col. Murray MacLaren, the other M.P. for St. John City and New Brunswick and Albert Counties. The Public Works Department was proposed by Lt. Col. E. G. M. Cape, D.S.O., of Montreal, one of the contractors for part of the plant, and responded to by Hon. J. H. King, Minister of Public Works. Sir Henry Thornton, President, Canadian National Rys., and Grant Hall, Vice President, C.P.R., were to have responded.

(Continued on page 612.)

Ship Building and Ship Repairing Throughout Canada and Newfoundland.

B.C. Marine Engineers & Shipbuilders Ltd. has deposited with the Minister of Public Works, at Ottawa, a description of site and plans of a marine railway proposed to be built on Burrard Inlet, Vancouver, in front of lot 3, block 1, subdivision E, D.L. 183.

Campbell River, B.C.—The *Edward White* was launched recently at Campbell River, B.C., for the Crosby Methodist Marine Mission. She is 36 ft. long by 9½ ft. wide, and draws 3 2/3 ft. She is fitted with an engine capable of developing 7 knots, and has sleeping accommodation for 6.

Canadian Vickers Ltd., Montreal, did the following work during October at its Maisonneuve plant: *S.s. Pabjune*, 1,859 gross tons, Mapes & Ferdon: Docked Sept. 30 for survey and repairs to bottom damage, due to grounding, including 23 new shell plates and 23 shell plates treated; also floors, girders, frames and other internal work in way of damage repaired and renewed, as required; sundry owners' repairs also executed. Undocked Oct. 16. *S.s. Sheba*, 2,268 gross tons, Canadian Government Merchant Marine: Docked Sept. 29 for survey and ice damage repairs to fore end of hull, including 20 new shell plates, 26 shell plates treated; also repairing and renewing all internal damaged work on frames, floors, girders, etc., in way of ice damage; also repairs to propeller, rudder, bulwarks, and sundry owners' repairs. Undocked Oct. 12. *S.s. Canadian Ranger*, 5,752 gross tons, Canadian Government Merchant Marine: Supplied new liner for tail shaft. *S.s. Canadian Miller*, 5,439 gross tons, Canadian Government Merchant Marine: Docked Oct. 12 for owners' repairs and bottom painting, also boring out h.p. cylinder and other engine repairs. Undocked Oct. 14. *S.s. Trontolite*, 7,115 gross tons, Imperial Oil Ltd.: Owners' repairs, including new tonnage openings for Panama Canal; also hull topside painting. *S.s. Mina Brea*, 4,145 gross tons, Imperial Oil Ltd.: Preliminary work in connection with general overhaul. *S.s. Vredenburg*, 6,419 gross tons, Thos. Harling & Sons, agents: Docked Oct. 14 for survey and repairs to bottom damage, including 3 new keel plates and 1 new shell plate; 5 shell plates off and treated and internal repairs and renewals to floors, frames, girders, etc.; also sundry owners' repairs. Undocked Oct. 23. *S.s. Berwyn*, 4,992 gross tons, Canadian Pacific Steamships Ltd.: Docked Oct. 24 for repairs to damaged shell plating, including 1 new plate and 16 plates treated, also repairs to propeller, rudder and bilge keels, also bottom painting. Undocked Oct. 29. *S.s. Odland*, 1,244 gross tons, Hanson Produce Co.: Docked Oct. 18 for survey and underwriters' repairs, including damage to keel plate and shell plating; also examination of propeller and steering gear and owners' minor repairs. Undocked Oct. 20.

The following work was done by its harbor department: *S.s. Beaverton*, 2,012 gross tons, Canada Steamship Lines, repairs to hull. *S.s. Timavo*, 7,434 gross tons, Navigazione Libera Triestino, renewing copper steam pipes and valves. *S.s. Gaspesia*, Clarke Steamship Co., voyage repairs. *S.s. Winona*, 2,085 gross tons, Canada Steamship Lines, repairs to hull. *S.s. Arabian*, 1,073 gross tons, Canada Steamship Lines, electrical repairs. *S.s. Deuel*, 5,585 gross tons, United States Shipping Board, reboring h.p. cylinder and general voyage repairs.

S.s. Kristianafjord, 7,000 gross tons, Norwegian American Line, voyage repairs. *S.s. Hamilton*, Canada Steamship Lines, fitting new winch and seat on deck. *S.s. Thunder Bay*, 1,870 gross tons, Canada Steamship Lines, fitting new winch and seat on deck. *S.s. Athenia*, 12,000 gross tons, Anchor-Donaldson Line, repairing turbo-generator. *S.s. Marte*, 5,629 gross tons, Societe Ligure di Arma-mento, temporary repairs to hull damage. *S.s. Strassa*, 5,500 gross tons, Trankakt Grangesberg-Oxelosynd, voyage repairs. *S.s. Afghanistan*, 5,516 gross tons, Hindustan Steam Shipping Co., general repairs for voyage. *S.s. Jersey-moor*, 5,662 gross tons, Moor Steamship Co., repairs to tunnel top.

Collingwood Shipbuilding Co., Collingwood, Ont., will add 74 ft. to the *Great Lakes Transportation Co.'s s.s. Glenisla*

Dominion Marine Association.

Honorary President, A. A. Wright, Vice President and Managing Director, Davie Shipbuilding and Repairing Co., Montreal and Toronto.

President, T. R. Enderby, Operating Manager, Canada Steamship Lines, Ltd., Montreal.

First Vice President, G. J. Madden, George Hall Coal and Shipping Corporation, Ltd., Ogdensburg, N.Y.

Second Vice President, A. E. Mathews, Mathews Steamship Co. Ltd., Toronto.

Executive Committee, The President, First and Second Vice Presidents; and W. E. Burke, Century Coal Co. and Canada Steamship Lines Ltd.; W. Crawford and Yvon Dupre, Sincennes-McNaughton Lines Ltd., Montreal; L. L. Henderson, formerly of Montreal Transportation Co., honorary member; W. J. McCormack, Algoma Central Steamship Lines, Sault Ste. Marie, Ont.; Col. G. P. Murphy, C.M.G., Ottawa Transportation Co., Ottawa, Ont.; C. H. Nicholson, Canada Atlantic Transit Co., and Canadian National Ry. Central Region Car Ferries, Toronto; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; J. F. Sowards, Kingston, Ont.; J. F. M. Stewart, Toronto; John Waller, Keystone Transports Ltd., Montreal; Senator L. C. Webster, Webster Steamship Co. Ltd., Montreal.

Counsel, Francis King, K.C., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

during the winter. The *Glenisla* was built at Detroit, Mich., 1903, and was formerly named the *Western Star*. Her dimensions are: Length, 400 ft.; breadth, 50 ft.; depth, 24.3 ft.; tonnage, gross, 4,587 tons; register, 3,404 tons. She is screw driven by engines of 169 h.p.

Davie Shipbuilding & Repairing Company, Ltd., Lauzon, Que.—A winding-up order has been granted, Gordon W. Scott being appointed provisional liquidator.

Halifax Shipyards Ltd., Halifax, N.S., did the following repair work recently: For Farquhar & Co., Halifax: *S.s. Sable One*, which had sustained extensive damage by striking a submerged wreck near Lamaline Head, Nfld., and from being beached afterwards, docked Aug. 27, for repairs, including 18 new plates and 12 plates faired and refitted, 6 plates faired in place, also extensive interior repairs to floors, tank top, machinery, etc.; undocked Sept. 14. *S.s. Strandhill*, scraped and painted and generally overhauled. Dominion Coal Co.'s *s.s. Lingan*, which hit a dock at Quebec, requiring 8 new plates, and 10 additional plates treated. French Cable *s.s. Edouard Jeramec*, docked Sept. 19, for semi-annual overhauling, including scraping, painting,

drawing tail shaft and removing propeller for examination, as well as considerable miscellaneous work; undocked Sept. 25. Commercial Cable Co.'s *s.s. Marie Louise MacKay*, for annual overhauling, scraping, painting, etc. H.M.C.S. *Patriot*, semi-annual overhauling, cleaning, painting, examination of sea-cocks and re-turning both propeller shafts, fitting new bushes in both stern ends. The *s.s. Canadian Settler*, bought by New Glasgow, N.S., interests, represented by Capt. Peter Graham, and now called the *s.s. Portmore*, was docked Oct. 17, for inspection, annual overhauling, cleaning, painting, etc. A large number of men were continuously employed, completely overhauling and repairing main engines of auxiliary machinery, pipe lines, electric wiring, etc.; undocked Oct. 19. The *s.s. Dagchild*, owned by Dominion Coal Co., while leaving Philadelphia, Pa., Oct. 11, had an explosion in her port main boiler, three men being killed. Bids for repairs having been called for by the underwriters, Halifax Shipyards sent a representative there, and was awarded the contract for repairing this damage. The *Dagchild* arrived at Halifax on Oct. 28. On Oct. 20, the *s.s. King Frederick*, owned by Dodd, Thompson & Co., struck the rocks at Point Diamond, St. Pierre, in thick weather. She proceeded under her own steam to North Sydney, and after temporary repairs were completed, was sent to Halifax to be drydocked for survey, which was held Oct. 27. Tenders were submitted by representatives of 9 ship repairing firms, 4 from New York, and one each from Boston, Montreal, Quebec, St. John and Halifax, with the result that the contract was awarded to Halifax Shipyards Oct. 29. The *King Frederick* struck stem on, tearing away the under water portion of the bow from the 14 ft. mark to the collision bulkhead, necessitating the renewal of 13 new plates, one plate to be removed and replaced, and the renewal of 21 frames port and starboard.

A Halifax correspondent has written Canadian Railway and Marine World as follows: "In view of the publicity that is frequently given in United States paper about tenders submitted for ship repair work, I am sending you the following information, thinking that it may be of interest to your readers. The *s.s. King Frederick*, owned by Dodd, Thompson & Co., London, Eng., struck at Point Diamond, St. Pierre, on Oct. 20, and, although making considerable water, managed to reach North Sydney, N.S., without assistance. After temporary repairs were made there, she went to Halifax and was drydocked on Oct. 27 for survey and examination. The owners and underwriters having invited representatives of the principal Canadian and American ship repairers on the Atlantic coast, called for tenders for repairs, which were submitted as follows: Halifax Shipyards, Ltd., \$12,975; Davie Shipbuilding & Repairing Co., \$13,428; Staten Island Shipbuilding Co., \$14,100; Canadian Vickers, Limited, \$14,600; Robins Drydock & Repair Co., \$14,850; Morse Drydock & Shipbuilding Co., \$16,000; Bethlehem Shipbuilding Corporation, \$18,873; St. John Drydock & Shipbuilding Co., \$20,700; New York Harbor, \$21,216. All the tenderers specified running days, except the Davie Shipbuilding & Repair Co., which specified working days. Halifax Shipyards, Ltd., was notified on the morning of Oct. 29 that its

tender had been accepted, and, as it offered to complete the work in 16 days, its time would expire on the morning of Nov. 14. The ship had struck the rocks stem on, and had torn away the under water portion of the bow from the 14 ft. mark to the collision bulkhead, necessitating the renewing of 13 plates and 21 frames. In addition there was considerable internal damage, particularly to the collision bulkhead limbers and shifting boards. The work was completed Nov. 11, at 7 p.m., 2½ days ahead of time, and the ship cleared for Montreal to load grain for Europe.

Smith & Rhuland, Lunenburg, N.S., have built a schooner named *I'm Alone*, the principal particulars of which are: length, 125 ft.; beam, 27 ft.; draft, 10½ ft.; gross tonnage, 181.70; net tonnage, 90.45. The cabin has 4 rooms for the owner, captain, mate and engineer, and elsewhere there are 14 bunks for the crew. She is equipped with electric light, and hot and cold water service, and has space for 1,700 gall. of fresh water, and 3 tons of ice. She is provided with two 100 h.p. Fairbanks-Morse type C.O. engines, which give her a speed of 13 knots.

Yarrows, Ltd., Victoria, B.C., did the following repair work during October: Canadian Pacific Ry. B.C. Coast Service, s.s. *Princess Alice*, 3,099 tons, repairs to bulwarks; s.s. *Princess Adelaide*, 3,061 tons, docked, cleaned and painted, sea connections overhauled and zincs renewed; s.s. *Princess Victoria*, 1,943 tons, docked, cleaned and painted, sea connections overhauled and zincs renewed; s.s. *Princess Charlotte*, 3,844 tons, drydocked, 3 propeller blades changed, ship cleaned and painted; s.s. *Princess Beatrice*, 1,290 tons, docked, cleaned and painted and sundry repairs. **Furness Withy & Co.,** s.s. *Siberian Prince*, 5,604 tons, work progressing rapidly on extensive bottom damage due to stranding. **Knut Knutsen, Norway,** s.s. *Golden Gate*, 4,854 tons, casting and machining new spare propeller. **Pacific Salvage Co. s.s. Algerine**, 592 tons, docked for survey. **Canadian Explosives, Ltd. s.s. Polar Forcite**, new steering gear and rudder.

Canadian Government Merchant Marine Operations, Etc.

R. B. Teakle, General Manager, left Montreal, Oct. 19, on an inspection trip to the Pacific coast, accompanied by **W. A. Cunningham**, Traffic Manager, **C.G. M.M.**, and **D. O. Wood**, Manager, Foreign Freight Department, Canadian National Rys. They went right through to Vancouver, after which Messrs. Cunningham and Wood visited Victoria, Prince Rupert and Seattle, Mr. Teakle being able to go to Seattle only, on account of many matters to be attended to at Vancouver. They returned to Montreal together on Nov. 12.

Traffic Conference.—**Wm. Phillips**, European Manager, London, Eng.; **G. E. Bunting**, Australasian Manager, Auckland, New Zealand; and **A. Brodstedt**, General Traffic Agent for the Orient, Hong Kong, China, arrived in Montreal in November, for a conference with **R. B. Teakle**, General Manager, on traffic matters.

Officers of Steamships.—The following have been appointed recently: Captains—**Canadian Harvester**, **J. Newhook**; **Canadian Miller**, **J. McFadyen**; **Canadian Navigator**, **E. A. LeBlanc**; **Canadian Ranger**, **P. J. Murphy**; **Canadian Trooper**, **A. J. Gilbert**. Chief engineers—**Canadian Engineer**, **J. Brownlee**; **Canadian Trooper**, **J. W. D. Cumming**.

The winter port staff took up their

quarters at St. John, N.B., Nov. 25.

The s.s. *Canadian Conqueror*, which at the time of writing (Nov. 20), is expected at St. John, N.B., from Antwerp and London, about Nov. 30, with a general cargo, will probably be the first of the arrivals at this port for the winter season.

The s.s. *Canadian Navigator* sailed from Halifax, N.S., for St. John's, Nfld., Nov. 14, among her cargo being several narrow gauge locomotives from the Prince Edward Island Ry. for the hydro-electric plant in the Humber Valley, Nfld., which is being built by the Newfoundland Power & Paper Co. Ltd., in which the Reid Newfoundland Co. and Sir W. G. Armstrong, Whitworth & Co. are interested. (Press report.)

The s.s. *Canadian Seigneur* will, it is reported, be transferred from the Atlantic to the Pacific coast, for the new service from British Columbia ports to Great Britain.

The s.s. *Canadian Trooper* is reported to have been transferred from the Atlantic to the Pacific coast, for the British Columbia-California run.

Vancouver Dock.—The C.G.M.M. ceased using the Dominion Government dock at the end of November, and will use the harbor commission's Ballantyne pier in future.

Vancouver Service via Panama.—The British Columbia Associated Boards of Trade, meeting at Vancouver, Nov. 16, decided to urge upon the Dominion Government the desirability of establishing a regular service between Montreal, Halifax and United States and Pacific coast ports with C.G.M.M. steamships.

St. John, N.B., Sailings.

London and Antwerp service.—Dec. 5, Canadian *Conqueror*; Dec. 19, Canadian *Planter*.

Cardiff and Swansea service.—Dec. 14, Canadian *Victor*; Dec. 28, Canadian *Mariner*.

Halifax Sailings.

Hamilton, Bermuda; Nassau, Bahamas; Kingston, Jamaica; Belize, British Honduras service.—Dec. 20, Canadian *Fisher*.

Australia and New Zealand service.—Dec. 22, Canadian *Constructor*.

Vancouver Sailings.

United Kingdom service.—Dec. 20, Canadian *Skirmisher*; Jan. 20, Canadian *Transporter*.

Australasian service.—Dec. 10, Canadian *Importer*, for Auckland and Sydney.

Canadian Pacific Steamships, Ltd.

The company has opened an office at Unter der Linden 39, n.w. 7, Berlin, Germany.

The s.s. *Melita*, which had been in drydock at Levis, having her propeller repaired, sailed from Quebec, Nov. 17.

The company's trans-Pacific ships resumed calling at Yokohama, Japan, Nov. 29, and will resume calling at Manila, with the *Empress of Russia*, sailing from Vancouver, March 6, 1924.

The *Empress of Scotland* and *Empress of Britain*, after completing their present trans-Atlantic trips, will be withdrawn from the service, and reassigned for the winter for cruises in the Mediterranean and to the West Indies, respectively.

The s.s. *Empress of Britain* will be given her annual overhaul at Liverpool, Eng., following which she will make winter cruises to the West Indies. She will resume her place in the trans-Atlantic service next spring as the *Montroyal*.

The company has assigned 4 ships for

the Christmas sailings from St. John, N.B., leaving that port Dec. 7, 13, 14 and 15, respectively. The *Montclare*, Dec. 7, will go to Liverpool; the *Melita*, Dec. 13, to Cherbourg, Southampton and Antwerp; the *Montcalm*, Dec. 14, to Liverpool, and the *Marloch*, Dec. 15, to Belfast and Glasgow. The company's ships, in addition to its Christmas sailings, will make 32 round voyages from St. John during the 1923-24 season.

Capt. S. Robinson, R.N.R., who was in command of the s.s. *Empress of Australia* at Yokohama, during the earthquake, has been appointed commander of the s.s. *Empress of Canada*, for a cruise round the world, starting from Vancouver, B.C., Jan. 4, 1924, via the Panama Canal to New York, and leaving there Jan. 25 for the 25,000 miles cruise. Capt. A. J. Hailey, R.N.R., of the *Empress of Canada*, succeeds Capt. Robinson on the *Empress of Australia*.

Hamilton-Toronto-Montreal-Vancouver Water Route.

The s.s. *Margaret Coughlan* arrived in Montreal, Nov. 17, with a large and varied cargo from Vancouver, after having discharged 2,000,000 ft. of lumber at Corner Brook, Nfld., for the Newfoundland Pulp & Paper Co.'s pulp mill under construction there. The *Margaret Coughlan* was expected to leave Montreal by Nov. 30, on another trip to Vancouver, via the Panama Canal.

The *Kirkwood Line* s.s. *J. H. Plummer* arrived in Hamilton, Nov. 13, and took on a considerable quantity of general cargo for Vancouver. She loaded further tonnage at Toronto, sailing for Montreal Nov. 20, where she completed loading, and sailed for Vancouver, via the Panama Canal, Nov. 25.

The s.s. *Mariska*, which, as mentioned in Canadian Railway and Marine World for September, was sold by order of the Supreme Court of Ontario, under a trust deed made by the owner, the Transatlantic Steamship Co., and bought by the Minto Trading Co., Montreal, has been renamed *Kamaris*. She has been cut in two by Canadian Vickers Ltd., Montreal, and a new 48 ft. section has been added. In addition to this, she has been thoroughly overhauled and repaired, and alterations made to her derrick and miscellaneous machinery, as well as being refitted for lake service. This work was completed Sept. 21, and arrangements were made for her to be towed in two sections through the St. Lawrence and Welland Canals to Buffalo, to be rejoined there. **J. W. Norcross**, Vice President and General Manager, Canada Steamship Lines, Ltd., is acting as owner's agent, and the repair and removal operations were carried out under the supervision of **J. F. M. Stewart**, Toronto.

Vancouver Grain Shipments.—It is reported that, during October, 2,289,180 bush. of grain were shipped through Vancouver to United Kingdom and other European ports, and 89,932 bush. to the Orient, a total of 2,379,112 bush. During the first two months of the crop year beginning Sept. 1, 2,408,364 bush. were shipped through Vancouver, of which 2,318,432 were consigned to the U.K. and other European ports, and 89,932 to the Orient. This compares with a total of 1,058,967 bush. shipped during the first two months of the 1922-23 crop year, of which 989,055 were consigned to U.K. and European ports, and 69,912 to the Orient.

Atlantic and Pacific Oceans.

The Montreal & St. Lawrence Stevedoring Co. announced recently that it had loaded the s.s. *Ethelfreda* with 7,366 tons of grain at Montreal in 11 hours, which was claimed to be a record loading for that port.

The s.s. *Loyalist*, owned in Bombay, India, which is reported by Lloyds to have been scrapped for breaking up, was formerly the *Empress of India*, one of the ships built at Barrow-in-Furness in 1891, for the C.P.R. trans-Pacific route.

The Cairn-Thompson Line, which has for years operated a steamship in the fruit trade between Mediterranean ports and Montreal, put on a second one this year. The *Scatwell* arrived in Montreal, Oct. 30, and the *Cairntorr* arrived Nov. 7.

International Transportation Services, Ltd., dispatched the Norwegian s.s. *John Ludev Mowinkel*, 4,400 tons, recently with a large cargo from Montreal to ports in Colombia, South America, with a view to establishment of a regular service with Canada.

The Red Star Line will, a London, Eng., cable states, inaugurate a new service, Dec. 28, with the s.s. *Lapland*, between Antwerp and New York, calling at Southampton, Eng., Cherbourg, France, and Halifax, N.S. The s.s. *Belgenland* will be the second ship on the route.

Furness-Withy Co. has, it is reported, arranged that two of the French Line steamships will call at Halifax, N.S., on the route between Bordeaux, France, and New York. The first is due at Halifax, Dec. 3, and a monthly service will be maintained, the last for the season being due April 27.

The Royal Mail Steam Packet Co. will, it is reported, make Halifax, N.S., a port of call for its steamships westward bound from Hamburg, Germany; Southampton, Eng., and Cherbourg, France, to New York. The first steamship scheduled to call at Halifax is the *Ohio*, 18,940 tons, on Feb. 14, 1924.

The s.s. *Princess Margaret*, owned formerly by the C.P.R., and which was converted into a mine layer during the war, was, a press report states, used on Nov. 4 to convey the premiers of the British overseas dominions from Portsmouth to Spithead, where they reviewed the Atlantic fleet. (Press report.)

McLean, Kennedy, Ltd., Montreal, representing the Scandinavian-American Line, which began the operation of a direct freight service between Scandinavian ports and Montreal in May, announced that the service will be continued fortnightly during the winter, St. John, N.B., being the Canadian port.

The question of improved shipping facilities between Canada and the West Indies is reported to have been the subject of a conference between Hon. G. P. Graham, Dominion Minister of Railways and Canals, and Royal Mail Steam Packet Co. officials in London, Eng., Nov. 6. It is said that the company proposes to increase its services, and is asking for a further subsidy from Canada.

The London, Eng., Times stated recently that a considerable number of British ships had been chartered to load grain on the Pacific coast for European ports and are making the outward trip in ballast. A Vancouver report states that space has been taken for a large tonnage of grain both for U.K. and Oriental ports, and that it is expected the shipments of grain for the season will reach 60,000,000 bush.

The Dollar Line has arranged that the first sailing of its round the world service will be that of the *President Harrison*, leaving San Francisco Jan. 5, 1924, and the first sailing from New York will be that of *President Adams*, Feb. 7. Steamships will leave New York fortnightly, and the entire trip will be made in about three months. The ports of call are: New York, Havana, Colon, Balboa, Los Angeles, San Francisco, Honolulu, Kobe, Shanghai, Hong Kong, Manila, Singapore, Penang, Colombo, Suez, Port Said, Alexandria, Naples, Genoa, Marseilles, Boston.

The Master of the Ontario Supreme Court, Toronto, has approved an application from the Home Bank's liquidator to have the s.s. *Vaudreuil*, owned by the British Dominion Holding & Investment Corporation, sold to satisfy a lien held by the bank. The reserve price is fixed at £5,000, and a commission of 5%. The *Vaudreuil* of Montreal was built at Cleveland, Ohio, 1889, and rebuilt at Lauzon, Que., in 1919, being named *Frontenac*. Her dimensions are: length, 278 ft.; breadth, 40 ft.; depth, 20.3 ft.; tonnage, gross, 2,514 tons; register, 1,436 tons; screw driven, by engine of 136 h.p.

A Kingston, Jamaica, press report stated recently that the Government was preparing a dispatch to the Canadian Government claiming that the arrangement for a fortnightly steamship between Canada and Jamaica is not being observed in the manner expected, and asking for more suitable steamships. The Jamaica Imperial Association is reported to have advised the island's representative at the Imperial Economic Conference in London, Eng., that with regard to St. John, N.B., the present Canadian service is adequate for transportation of general cargoes, and that it is questionable whether there is necessity for a fruit or an increased passenger service.

Maritime Provinces and Newfoundland.

Premier Veniot, of New Brunswick, is reported to have stated that the Dominion Government has taken over more than 30 of the wharves and tidal waters in the province.

The Marine and Fisheries Department has authorized the changing of the name of the s.s. *Princess*, registered at Sydney, N.S., and owned by J. A. Young and T. Burchell, to that of *Lake View*.

The Port Hawkesbury Marine Ry., Port Hawkesbury, N.S., is reported to have been reopened after reconstruction and to have 2 cradles, on which ships up to 1,000 tons capacity can be docked and repaired.

The s.s. *Petrel*, which was sold out of the Dominion Government service some time ago, and was recently sold under Admiralty Court order for wages, is being repaired at Burns & Kelleher's yard, Halifax, N.S.

The 3-masted schooner *A.* and *W. Ogilvie*, timber laden, bound from Burlington, N.S., for Boston, Mass., which went ashore at Lorneville, N.B., has been towed to St. Martins, N.B., to discharge cargo, prior to being repaired.

St. John, N.B., longshoremen were reported, Nov. 17, to have asked for increased wages. The Labor Department, on Nov. 19, authorized the establishment of a board of conciliation and investigation, for which the employees had asked.

The Dominion Government s.s. *Aberdeen* is reported to have been abandoned

as a total loss on Seal Island, N.S., the cost of salvaging being estimated to be in excess of her value. She is being replaced in the lighthouse service by the *Dollard*.

The Dorothy L. Bell, a 70-ton auxiliary schooner, which was launched at Shelburne, N.S., Oct. 9, was destroyed by fire on her first trip on Nov. 3, through the engine backfiring and the following explosion of the oil tank. The crew got in the boat, and rowed to Lockport, N.S.

Judge Stewart, in the Admiralty Court at Charlottetown, P.E.I., gave judgment recently for \$600 in favor of C. W. Hanley, St. Stephen, N.B., and against the schooner *Ralph S. Parsons*, which was chartered for a voyage to England and was outfitted for the trip by the plaintiff to the value of the claim.

The St. John Drydock & Shipbuilding Co. has been given a contract by the Dominion Public Works Department, for dredging at the deep water berths, and the Canadian National Ry. long wharf, at St. John, N.B., the amount of material to be moved being approximately 120,000 cu. yd, scow measure, at 31c.

The s.s. *Strandhill*, chartered by Beazley Bros., Halifax, N.S., to salvage the guns, anchors and chains from H.M.S. *Raleigh*, which was wrecked on Amour Point, Belle Isle Strait, Aug. 8, 1922, returned to Halifax recently, having accomplished the work. The guns were shipped to England by the *Furness* s.s. *Digby*.

The St. John, N.B., City Council, on Nov. 15, provided \$350 additional for fitting up of the new steam ferry for the Lancaster-Indiantown service, a similar amount having been provided by Lancaster Municipality. The ferry is said to have cost about double the contract price, the city having provided altogether \$2,850.

The tern schooner *Jean Dundonald Duff*, 404 tons, which was one of the few remaining oceangoing schooners owned in Newfoundland, is reported to have been abandoned at sea while on a voyage from Glasgow, Scotland, to St. John's, Nfld., and her crew is said to have been taken off by the s.s. *Arawa*, and landed at Colon, Panama. The schooner was burned by the rescuing steamship so as to prevent her becoming a menace to navigation.

The Digby Steamship Co. is reported to have bought the s.s. *Ruby L.*, to replace the s.s. *Centreville*, which has been sold. The company also operates the s.s. *Ruby L. II*, between St. John, N.B., and Nova Scotia ports. The *Ruby L.* was built at Margaretsville, N.S., 1907, and was owned formerly by Margaretsville Steamship Co., her dimensions being: Length, 90 ft.; breadth, 20.4 ft.; depth, 8.6 ft.; tonnage: gross, 119; register, 51; engines, 16 2/3 h.p.; screw driven.

Connors Brothers, Ltd., business at Black's Harbor, N.B., including its steamships and canning plants, is reported to have been sold to a company which will enlarge the plant and equipment, and of which P. W. Connors will be a leading member. Lewis Connors, a member of the company, is interested in the promotion of the Canadian Terminal Ry. Co., which proposes to build a railway from Pennfold, on the C.P.R., to link up and develop the harbors of Blacks, Deadmans, Beaver and L'Etang, N.B.

The s.s. *St. George*, built at Birkenhead in 1906, was operated for several years by the C.P.R. between St. John, N.B., and Digby, N.S. After being used

on scouting service between Halifax and Bermuda in the early war days, she was taken to England, and lost sight of until 1919, when she was sold to the Great Eastern Ry. and was put on the Harwich-Amsterdam run. She is now reported to have been chartered by the Scientific Expeditionary Research Association of England for a 10 months' expedition to the South Seas.

Capt. T. J. Craig, Kinrose, P.E.I., is reported to be negotiating for the purchase of the sidewheel s.s. D. J. Purdy, on behalf of a syndicate which proposes to conduct a new passenger and freight service between ports on Northumberland Strait. The D. J. Purdy, formerly the Sincennes, of Montreal, is owned by the Crystall Stream Steamship Co., St. John, N.B., and was built at Montreal in 1893, her dimensions being: Length, 142.2 ft.; breadth, 24.4 ft.; depth of hold, 8.4 ft.; tonnage: gross, 500; register, 315; engines, 34 h.p.

Province of Quebec.

The George Hall Coal & Shipping Corporation's coal barge bunkering the s.s. Minnedosa at shed 7, Montreal, settled and sank in 28 ft. of water, Nov. 19.

The Montreal Harbor Commissioners took a party of newspaper men round the harbor on Nov. 15, to show them the improvements made during the year.

The Dominion Government s.s. Archie was moored in the inner Louise Basin, Quebec, Oct. 30, following her return from the Arctic Ocean, under Capt. Joseph Bernier.

The Dominion Government has, it is reported, completed arrangements to take over the wharf at St. Petronille, Island of Orleans, from which a ferry service is operated by Le Compagnie Maritime, to Quebec.

A schooner is reported to have been burned in the St. Lawrence River, off Cape Salmon, Que., about the middle of November, the crew having apparently got to land. The name of the schooner has not been reported.

The St. Lawrence Transportation Co. entered an action in the Admiralty Court, Quebec, Nov. 16, to recover \$400 damages to a lighter alleged to have been caused by a schooner releasing it from its moorings in Quebec, in consequence of which it ran ashore and was damaged.

The George Hall Coal & Shipping Corporation was sued in the Quebec Superior Court recently by A. Gamache, under the Workmen's Compensation Act, for damages due to injuries received to his hand while oiling the steering gear on the s.s. Senator Derbyshire, June 6. Mr. Justice Coderre awarded plaintiff \$300.

Mr. Justice MacLennan, in the Admiralty Court at Montreal, Nov. 18, reserved judgment in an action brought by the George Hall Coal & Shipping Corporation, Montreal, owners of the s.s. A. D. MacTier, against the owners of the s.s. Fifetown, to recover damages resulting from a collision between the two ships in Soulages Canal, Oct. 2.

Marine Department engineers were reported to have arrived at Three Rivers, Que., Oct. 31, to study the river situation. It is suggested that a new channel be opened off the city, on the south side of the river to replace the present one, which is only a few hundred feet from the wharves. It is claimed that there is danger to ships moored at the wharves from the use of the channel.

The steamship St. Croix, operating

between Quebec City and points in Lotbiniere county, went ashore near St. Antoine de Telly, a few minutes after leaving the wharf. The passengers were taken off, and a part of the cargo removed to enable her to be refloated. The damage to the hull is reported to be comparatively slight, and she was expected to be again on the route in about a week.

Petrel Steamships, Limited, has been incorporated under the Dominion Companies Act, with authorized capital of \$50,000 and office in Montreal, to buy and sell ships; to carry on business as shipowner and common carrier within and without the Dominion; to carry on towing, wrecking and salvage and a number of other businesses connected with transportation. The incorporators are R. Chenevert, L. Barry, M. Bernfield, F. J. Hyde and H. Scott, Montreal.

Capt. L. A. Demers, Dominion Wreck Commissioner, opened an investigation no Nov. 20 into the collision between the George Hall Coal & Shipping Corporation's s.s. John B. Ketchum and the Canada Steamship Lines s.s. Cataract near Dickenson's Landing, Nov. 8. On Nov. 21, he held an investigation at Quebec into the stranding of the s.s. General Milne at Cap La Roche, and on Nov. 22, he held another into the collision between the motor ship Steel Motor, and the barges Dunmore and Melrose, which were being towed by the tug Virginia in the Soulages Canal, Nov. 9.

Ontario and the Great Lakes.

The name of the Toronto Fire Department's tug City of Toronto has been changed to Charles A. Reed.

The Canada Steamship Lines' s.s. Turbinia is to be reconditioned, and placed on a passenger route out of Toronto, next year.

The United States Lighthouse Department will withdraw buoys and other aids to navigation on Lake Ontario and the St. Lawrence River, Dec. 1.

General navigation on the Great Lakes and the St. Lawrence River to Montreal, is expected to close Dec. 15. The Sault Ste. Marie canals locks will close on Dec. 14.

The Public Works Department has given the Port Arthur Construction Co. a contract for the reconstruction of the east pier of the eastern channel, Toronto harbor.

The Booth Fish Co.'s plant at Wiarton, Ont., was considerably damaged by fire, Oct. 28. The tug Sailor Queen, which was lying at the wharf, was burned to the water's edge.

The harbor at the Main Duck Island, near Prescott, Ont., is reported to have been dredged to a depth of from 10 to 12 ft. by C. W. Cole, thus providing better protection for ships.

Navigation on the Welland Canal was delayed for about 12 hours to 2 a.m., Nov. 20, owing to the gates at lock 18 being carried away by the Great Lakes Transportation Co.'s s.s. Glenburnie.

The Great Lakes Transportation Co.'s s.s. Glenclova, while landing a pilot at Prescott, Ont., Nov. 19, in order to avoid colliding with a barge, ran into the east side of the Buckley wharf, doing it considerable damage.

A serious landslide on the Welland Canal between locks 22 and 23, was reported from St. Catharines, Ont., Nov. 15, holding up navigation for two or three days. This is the third landslide

that has taken place at this point during the present season.

The s.s. Joyland, owned by Aube Steamship Co., Montreal, and laden with wheat, went ashore in Coteau Lake, half a mile below Cornwall, Ont., Nov. 6. She was lightered and got off, without material damage, the cargo was reloaded, and she proceeded Nov. 8.

The Department of Marine and Fisheries received tenders to Nov. 13, for towing, docking, repairs, renewals and painting the tug Hercules, and steel hopper scows 14 and 15, which have been used as tenders to Dredge P.W.D. 109, working in Goderich harbor.

In connection with the arrangement made between the British and the U.S. Governments that the latter may search British ships for alcoholic beverages within 12 miles of the U.S. coast, it has been asked whether the authority will extend to the Great Lakes.

The George Hall Coal & Shipping Corporation, Montreal, is stated in a press report to be about to scrap all its wooden ships, the s.s. Liberty and the barge Sherman having been laid up at Ogdensburg, N.Y., already for scrapping. Enquiry has failed to elicit official confirmation of the report.

The s.s. Glenellah ran aground in the aqueduct, Welland Canal, Oct. 30, and later in the day the s.s. Edward L. Strong also went aground, and the s.s. Metcalfe went aground Nov. 3. These groundings are reported to have been caused by low water, there being only 12 ft. reported Oct. 30, and 13 ft. Nov. 3. During the night of Nov. 3, the water rose to 14½ ft.

D. S. Pratt, General Manager, Canadian Dredging Co., Midland, was in Port Arthur recently completing arrangements for carrying out the contract for the construction of a section of a rubble mound breakwater for the Public Works Department. The company's plant and equipment for the work is reported to have been nearly all arrived at Port Arthur.

The s.s. John B. Ketchum 2nd, owned by the Geo. Hall Coal & Shipping Corporation, Montreal, bound from Montreal to Toledo, Ohio, and the Canada Steamship Lines s.s. Cataract, collided in the Cornwall Canal, Nov. 8. The John B. Ketchum 2nd was damaged seriously above the water line, but proceeded to Ogdensburg, N.Y. She subsequently steamed to Montreal, where repairs will be made.

The Hamilton Harbor Commission's development plans are reported to call for an expenditure of \$500,000. W. Ainslie, Chairman, has been in Ottawa, discussing the matter with the Marine Department, with a view of obtaining \$200,000 towards the cost of the work. The commission proposes to ask Hamilton City Council also to provide \$200,000, leaving \$100,000 to be financed by the commission.

Hon. J. S. Martin, Minister of Agriculture for Ontario, is reported to have said, in speaking at Brantford recently, that the efforts to have Port Dover harbor put into proper condition are not to be given up, and that a deputation representing the municipalities served by the Lake Erie & Northern Ry., and the Grand River Ry., will go to Ottawa to bring the matter before the Dominion Government.

The North Bay Navigation Co. has been incorporated under the Ontario Companies Act, with authorized capital of \$40,000 and offices at North Bay, to

operate steamboats on Lake Nipissing; to own and operate docks or other works in connection therewith, and to acquire and operate an amusement park. The provisional directors are: F. A. York, J. W. Deagan, C. W. F. Brown, T. H. Noble, and E. L. Banner, all of North Bay.

The Canada Steamship Lines s.s. Edmonton, bound from Montreal for upper lake ports, while in the Darcy Lake level of the Cornwall Canal, Nov. 2, collided with the Mapes-Ferdon Steamship Co.'s s.s. Pabjune, bound to Montreal. The latter sustained but slight damage and proceeded, while the Edmonton put into Prescott, where temporary repairs were made, and she proceeded Nov. 3 to Toronto, where her cargo was transferred to another ship, and she went to Kingston for permanent repairs.

The Detroit and Cleveland Navigation Co.'s new steamship, Greater Buffalo, was launched at the American Steamship Co.'s yard, Lorain, Ohio, Oct. 27. She is of practically the same dimensions as the Greater Detroit, launched in September; approximately 550 ft. long by 100 ft. wide. She will have accommodation for 1,200 passengers, besides a crew of 300, also space for 1,000 tons of express freight, and automobiles. The two new ships will be ready for the run from Buffalo to Detroit, with the opening of the 1924 navigation season.

The Border Transit Co.'s s.s. Wesee, bound from Sandwich, Ont., to Cleveland, Ohio, to load coal, caught fire and was totally destroyed, Nov. 11, her crew taking refuge on Middle Sister Island, whence they were rescued by the s.s. Conneaut, and landed at Port Clinton, Ont., Nov. 12. The Wesee was built at Green Bay, Wis., 1901, her dimensions being: Length, 265.5 ft.; breadth, 42 ft.; depth, 22.7 ft. Tonnage: gross, 1,829; register, 1,062. She was screw driven, with engines of 99 h.p. Her registered owners are: R. Massey and W. M. Gatfield, Sandwich, Ont.

The Canada Steamship Lines' s.s. Mapledawn left Collingwood, Oct. 21, for the head of the lakes, having been completed by the Collingwood Shipbuilding Co. She was originally the Manota, owned by the Minnesota Steamship Co., and was acquired by the United States Shipping Board for ocean service. She was cut in two for passage down the canals, but the bow section was lost while being towed across the lake. A new bow was built to the original stern in 1920 at Levis, Que., and she was acquired by Canada Steamship Lines. For transfer to the upper lakes, she was towed to Collingwood, where, as stated in Canadian Railway and Marine World for August, she was cut in two and a new 36 ft. section was added.

International Waterways Navigation Ltd., Montreal, has bought the steel steamship Jolly Inez, from Walford Lines, Ltd., London, Eng. She was built at Sunderland, Eng., 1896, her dimensions being: Length, 253 ft.; breadth, 44 ft.; depth of hold, 19.7 ft.; tonnage: gross, 1,850; tons net, 1,150. She has engines of 203 h.p. She was originally named Vickerstown, was subsequently renamed Turret Chief, and was given her present name in 1915 to conform with the other Walford Lines' ships. She has capacity for 120,000 bush. of grain, and is being operated in the grain trade on the upper lakes, Elmer Winter being captain and Wm. Keith chief engineer. The company's two other ships, Aragon and Westorian, are in the Port Colborne-Montreal trade.

Manitoba, Saskatchewan, Alberta and Northwest Territories

The motor boat Canadusa brought out to Waterways, Alta., recently, officials, traffic representatives and crews of a number of steamboats operating in the Athabasca and Slave Lake navigation, the party reaching Edmonton, Alta., by the Alberta & Great Waterways Ry.

The Hudson's Bay Co.'s motor boat Weenusk was reported recently to have completed her 19th round trip between Hudson Hope and Fort Vermillion, via Peace River town, making a total of about 12,000 miles for the season. It was expected she would make another round trip before she was laid up for the winter at Hudson Hope.

Capt. Moore is reported to have bought the steamboat Fort Norman, and to be going to add 25 ft. to her length during the winter. She will be fitted to carry freight and passengers, and equipped to tow coal barges from Hudson Hope to Peace River, Alta. The only steamboat of this name on these waters in the Canadian Register is a scow owned by the Hudson's Bay Co.

The Hudson's Bay Co.'s auxiliary schooner, Lac du Bruchet, built at Edmonton, Alta., for trading on Reindeer Lake, Sask., will leave Edmonton early in December, en route to her trading station. She will be shipped to Prince Albert, Sask., and then will be hauled overland by teams to Reindeer Lake, about 600 miles. Her dimensions are: Length, 40 ft.; width, 10 ft.; moulded depth of 6 ft. She will draw 3 ft. of water. She is fitted with two 27 ft. masts, is schooner rigged, and has a 9-12 universal engine. She has a capacity for 10 tons of cargo, with accommodation for the crew.

British Columbia and Pacific Coast.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Albert has been sold to Western Freighters, Ltd.

The Public Works Department received tenders to Nov. 26 for the construction of a new hull and house for a snagboat for the Fraser River, B.C.

G. Dicks and S. Pierce, Prince Rupert, B.C., have been granted permission by the Marine Department to change the name of the s.s. Eagle, registered at Prince Rupert.

The Hudson's Bay Co.'s s.s. Baychimo arrived in Vancouver, B.C., Nov. 4, from the Siberian coast with passengers and a cargo of furs reported to be valued at about \$1,000,000.

The Somerville Cannery Co. is reported to have bought the auxiliary schooner Laurie Whalen, now undergoing repairs by the Victoria Machinery Depot at Victoria, for a cannery tender.

The C.P.R. s.s. Princess Patricia, inward bound to Vancouver, collided with the tug Ocean Plunger, outward bound, in a dense fog, in the narrows, Oct. 26. Neither ship suffered serious damage.

The Vancouver Harbor Commissioners are reported to be going to ask the Dominion Government for a further loan of \$5,000,000 for the extension and improvement of the port facilities.

The C.P.R. coast steamship Princess Charlotte, after having repairs to her propeller completed by Yarrows Ltd. on Nov. 2, underwent a general overhaul at her dock in the inner harbor, at Victoria.

The Dominion Government wireless

direction finding station at Pachena Point is reported to have been opened, Nov. 14; to be in charge of three operators and that a 24-hour service will be given.

Thomas Harling and Son, steamship agents, Montreal, are opening a branch office at Vancouver, B.C., under the title of Harling, Son and Stevenson, Ltd., and in charge of H. A. Stevenson of Vancouver.

The C.P.R. British Columbia Coast Service steamships Princess Alice and Princess Louise will, it is reported, make 18 trips to Alaskan ports during next summer, starting June 7, and ending Sept. 10.

The Puget Sound Navigation Co. is reported to be about to build a ferry slip in the inner harbor, Victoria, B.C., for use in connection with the operation of the ferry Sioux on the Port Angeles-Victoria run.

The C.P.R. s.s. Charmer dropped her propeller in the Gulf of Georgia, Oct. 22, and was hauled out on the Victoria Machinery Depot's marine ways, Oct. 23, to have a new propeller fixed. She resumed her run Oct. 27.

The Hudson's Bay Co.'s power schooner Ruby returned to Seattle, Wash., recently from a supply trip to the company's posts on the Siberian coast. She sailed from Seattle May 10, and from Vancouver May 19, outward bound.

A Seattle, Wash., press report credits the Governor of Alaska with stating that the C.P.R. British Columbia Coast Service may extend its steamship services up the Tanana River so as to connect with the Alaska Rd. at Nenana, Alaska. The steamboats will, it is stated, link up the Alaska Rd. with Dawson, Yukon, via the Tanana and Yukon Rivers.

The Puget Sound Navigation Co.'s steam ferry Sioux, which is operating between Port Townsend and Seattle, Wash., will, a press report says, be transferred to the Port Angeles, Wash.-Victoria, B.C., run early in 1924, after having been cut in two and lengthened, so as to increase her capacity from 15 cars to about 40, and to carry 400 passengers.

The Vancouver-Courtenay Transportation Co. has been incorporated under the British Columbia Companies' Act, with authorized capital of \$125,000 and office at Vancouver, to acquire and operate steamships, tugs, sailing ships, barges, scows, lighters and other craft, upon ocean, seas, sounds, waters, rivers and canals for transportation of freight and passengers.

The Marine Department is reported to have arranged to station one of the fishery patrol ships, Givenchy or Thiepval, in Barkley Sound during the winter, to render aid to vessels in distress off that section of the coast. It is said that the life saving appliances will be added to, and that tenders are being invited for clearing trails and building bridges to make sure connections between the coast and the Banfield station.

The Pacific Great Eastern Ry. is reported to have bought the tug Point Ellice, to operate the railway barge service between North Vancouver and Squamish dock. Since the loss of the tug Clinton, about a year ago, the railway has been chartering tugs for this service. The Point Ellice was built at North Vancouver 1911, was owned by the Dominion Government, and operated under the Public Works Department. Her length is 95.8 ft.; breadth, 20.1 ft.; depth, 11.6 ft.; tonnage: gross, 205;

registered, 98; screw driven; engines 47 h.p.

The Union Steamship Co. of B.C. is reported to have bought the steamboat Lady Evelyn from Howe Sound Navigation Co., and to be going to operate her in the Powell River service. The Lady Evelyn is a steel twin screw steamboat of 483 gross tons, and 39 tons register, built and engined at Tramere, Birkenhead, Eng., in 1901. Her dimensions are: Length, 189 ft.; breadth, 26.1 ft.; depth of hold, 9.5 ft.; draught, 8 ft. 6 in. She is fitted with triple expansion engines, cylinders 16, 24 and 38 in. diameter, by 24 in. stroke; steam being supplied by 2 return tubular boilers at 160 lb. pressure. She is capable of making 16 knots on forced draught. Originally named the Deerhound, she was operated by West Cornwall Steamship Co., on a freight and passenger route between Penzance, Cornwall, and the Scilly Isles, from 1901 to May, 1907, when she was bought by the Dominion Post Office Department, and used as a mail tender at Rimouski, on the St. Lawrence, being renamed the Lady Evelyn, and registered at Quebec. In 1922 she was sold to Howe Sound Navigation Co., and her port of registry changed to Vancouver. During the last two years she has been used in freight and passenger service along the B.C. coast. Prior to being put on her new run, she will be converted into an oil burner. An illustration of the Lady Evelyn was given in Canadian Railway and Marine World for June, 1907, pg. 437.

The World's Largest Drydock Opened at St. John, N.B.

(Continued from page 606.)

ed to the toast of "Our Railways," but so much time had been occupied by some of the local speakers that, as the tide was beginning to ebb, the programme had to be cut short, so that the Governor General might leave to open the drydock. At about 3 p.m. the Norwegian steamship Kong Shavn, which had gone ashore at Brier Island in the Bay of Fundy, a few days before, being badly damaged, entered the dock under her own steam, assisted by tugs, the Governor General, in a brief speech, declaring the dock open. In the evening the St. John Drydock & Shipbuilding Co.'s staff gave a ball in Pythian Hall, the guests being received by Frank M. Ross, General Manager, and Mrs. Ross, and the whole affair being most enjoyable.

On Oct. 30, a number of the company's guests were taken round St. John harbor and Courtenay Bay on the company's wrecking tug, Ocean Eagle, and at 3.30 p.m., those who had gone from Montreal on the special train, left on it on their return, reaching Montreal early on Oct. 31, and dispersing there.

St. Lawrence River Insurance Rates.—The question of marine insurance rates on the St. Lawrence route is again arousing discussion in both England and Canada. Alex. Johnston, Deputy Minister of Marine, suggested recently the possibility of a Canadian marine insurance department under government direction, and the London Times has expressed the opinion that British underwriters are not likely to remove any discrimination alleged to exist against the St. Lawrence waterway.

The motorized barge, Twin Ports, is reported to have reached New York, Nov. 5, with the first unbroken freight shipment carried by the all water route from the head of the Great Lakes.

Customs Duties on Canadian Goods Sent via Panama Canal.

The question of trade between eastern and western Canada has assumed new phases since the opening of the Panama Canal, and the great development that has been made in the facilities for handling cargoes at Vancouver and Victoria, B.C. The making of direct shipments from Vancouver to Europe via the canal was followed by the making of shipments of freight from Canada to New York for transshipment to ships travelling via the canal to Pacific coast ports, and finally reaching Vancouver. This traffic brought from the Canadian Customs Department a decision that such freight was subject to duty on re-entering Canada, and a demand was made for the establishment of a Canadian customs office at New York to facilitate the trade. The Minister of Customs, when in Vancouver on Nov. 1, heard arguments from the Board of Trade in favor of the establishment of such an office, and was reported to have stated in Winnipeg on Nov. 15, on his way back, his willingness to recommend the appointment of a customs officer to deal with shipments by water between Canadian Atlantic and Pacific ports, where bulk is broken at New York. The British Columbia Legislature passed a resolution on Nov. 14, proposed by the Premier, and supported by the leader of the opposition, asking for the appointment of a customs officer at New York; that the imposition of duties upon the produce or manufactures of any province destined to any other province, no matter by what route transported or where transhipped, be discontinued; and that the B.C. Government take proper steps to resist such imposition of duties by the Dominion Government.

The s.s. Glenstriven, owned by Great Lakes Transportation Co., while grain-laden and bound from Fort William to Midland, Ont., went ashore on the southwest shoal, off Cove Island, at the head of Bruce peninsula, Georgian Bay, Nov. 16, during a fog, and on the following day was reported to be full of water. The crew reached Tobermory, 5 miles away, safely. The tugs Murray Stewart and Keenan made an unsuccessful attempt, on Nov. 17, to tow the Glenstriven off, and on the following day anything of value was removed from her by the tug Lucknow. The wrecking tug Manistique left Sarnia to endeavor to salvage the ship. The Glenstriven was built at Buffalo, N.Y., 1889, and was formerly called the America, her dimensions being: Length, 274 ft.; breadth, 42.2 ft.; depth, 20.5 ft.; tonnage, gross, 2,155 tons; register, 1,585 tons; screw driven by engines of 114 h.p. An Owen Sound press dispatch of Nov. 22 stated that it was thought possible that the ship might be refloated, the weather being more favorable for lightering and salvaging operations. A Cleveland, Ohio, press dispatch of Nov. 23 said that the underwriters had given the Reid Towing & Wrecking Co. a contract for releasing the ship and taking her to Collingwood, on the no cure, no pay, basis.

The American Marine Conference at New York, Nov. 8, is reported to have passed a resolution calling upon the U.S. Shipping Board and the Emergency Fleet Corporation to retire without delay from operating ships, and to place their operation in private hands.

Handling the Wheat Crop on the Lakes.

On Oct. 27, it was reported that stocks of grain in elevators at Fort William and Port Arthur, Ont., were 28,717,448 bush., against 35,238,001 at same date in 1922. Shipments out were reported comparatively light, but a heavy movement began Oct. 30, when 32 steamships, with 3,478,000 bush., were reported to have sailed for lower lake ports. Among the ships in the business are the Canadian Government Merchant Marine's Canadian Adventurer, Canadian Trader, Canadian Sower, Canadian Sailor, Canadian Signaller, Canadian Warrior, Canadian Engineer and Canadian Pathfinder. There are also 4 Norwegian steamships, Vesla, Lisen, Agga and Otto Sindling, the first two of which have been taking cargoes to Montreal and Buffalo, and the latter two sailed Nov. 12 for overseas. They each have a capacity of 65,000 bush. to Montreal, where they were to take on another 10,000 bush. each. The tramp steamships John Shaw and Itororo, the first named of which went to the upper lakes from South America, also cleared for New York. Shipments have continued heavy since the beginning of November, and it was reported Nov. 16 that rates from Fort William and Port Arthur to Georgian Bay ports were 2½c to 3c a bushel, against 5c and 6c a year ago; and on Nov. 18, that rates to Buffalo were 2¼c, and to Georgian Bay ports 2½c. It was reported from Port Arthur, Nov. 18, that several ships had been loaded for Buffalo at 4c a bush., freight and winter storage.

Assisted Passages for British Immigrants.—Dame Meriel Talbot, acting President, Society for the Overseas Settlement of British Women, London, Eng., is reported to have said recently: "If Canada wants to stimulate immigration, she might consider whether it would not be possible to make the conditions of transit more attractive financially." In this connection, a Canadian Immigration Department official is reported to have said that the Canadian Government was doing as much as it could be expected to do in the matter of assisted passages and that the comparison with Australia was scarcely fair. It was a practical certainty that a domestic servant going to Australia or New Zealand would remain in those countries for at least five years. They had not, as Canada had, to contend with the lure of higher wages presented by the United States. On that ground Canada could not be expected to assume an equal financial responsibility per head of her assisted immigrants. Since the Department started making advances to cover fares in July, the number of applicants had increased four-fold. In the majority of cases, full fare had been advanced.

Princess Beatrice-Camosun Collision.—Judgment was given by Mr. Justice Martin, in the British Columbia Superior Court, Nov. 9, in the action for damage brought by the C.P.R. against the Union Steamship Co. of B.C. The C.P.R. s.s. Princess Beatrice and the Union Steamship Co.'s s.s. Camosun collided in McKay Reach, west of Kingscombe Point, Jan. 20, both being damaged considerably. The C.P.R. sued for \$15,000 damages, and the Union Steamship Co. counter claimed for a similar amount. The actions went to trial some months ago, judgment being deferred. It was announced Nov. 9 that Mr. Justice Martin had dismissed the C.P.R.'s action and allowed the counter claim.

Mainly About Marine People.

Sir Montagu Allan, formerly of the Allan Steamship Line, Lady Allan and Miss Martha Allan, have been at Biarritz, and will spend the winter at Cannes.

Capt. J. Arseneau, of the schooner Marjorie Austin, died suddenly Nov. 8 while on board lying off Parrsboro, N.S.

Captain James Balcom, who died in Victoria, B.C., recently, was a native of Sheet Harbor, N.S., where he carried on shipbuilding, and also operated a number of ships in the West Indies trade. He retired from business about 20 years ago and moved to the Pacific coast.

J. R. Beck, District Passenger Agent, Canada Steamship Lines, Toronto, was married at Strathroy, Ont., on Nov. 21, to Miss Margaret Ramahan.

Wm. A. Black, President of Pickford & Black, ship owners and agents, etc., Halifax, N.S., is the Conservative candidate for the by-election in that constituency for the House of Commons, on Dec. 5.

Capt. C. E. Clarke, Harbor Master, Victoria, B.C., who underwent an operation at the Jubilee Hospital, Victoria, a short time before, was reported, on Nov. 12, as returning to the hospital for another operation.

Wm. P. Clyde, for many years President, Clyde Steamship Co., who retired in 1908, died in New York, Nov. 18, aged 84. He was a son of T. P. Clyde, who founded the line.

Capt. L. R. Demers, who died in Quebec, Nov. 4, aged 77, was for 12 years in command of the Canada Steamship Lines s.s. Quebec, and formerly in command of the Dominion Government's s.s. Druid.

Capt. Robert Dollar was the principal speaker at a dinner of marine men at Vancouver, B.C., Nov. 7, when he dealt with the development of business on the Pacific Ocean, since the opening of the Panama Canal.

Hon. Antonin Galipeault, Provincial Minister of Public Works, Quebec, Que., has been elected President, Levis Ferry Limited, to succeed Emile Tanguay, who died Nov. 6, and who was a practicing architect, and also the Quebec Government's chief architect.

Lt.-Col. F. Gourdeau, at one time Deputy Minister of Marine and Fisheries, who died in Ottawa Oct. 2, left an estate valued at \$20,429.41.

Wm. Hickman, who died at Bridgewater, Somerset, Eng., recently, aged 81, was the first agent appointed by the C.P.R. in England, in 1887, for shipping emigrants from England to Canada. The agency is still held by his son.

Capt. D. L. Jones, of the Royal Mail Steam Packet Co., arrived in Montreal, Oct. 29, from England on the steamship Ausonia, accompanied by his niece, and proceeded to Victoria, B.C.

John Thomas Kelly has been appointed Superintendent Engineer, Canadian Pacific Steamships Ltd. at Antwerp, Belgium, succeeding F. E. Hook, who has retired from the service, as mentioned in Canadian Railway and Marine World for November, having reached the age limit. Mr. Kelly joined the C.P.R. service in May, 1913, as Chief Engineer of the s.s. St. George, which was bought for the Bay of Fundy service. After the outbreak of war the ship was requisitioned by the British Government, went across the Atlantic and was used as a troop and hospital ship between the Eng-

lish and French ports, Mr. Kelly continuing as Chief Engineer until the ship was disposed of in Dec., 1919. His services were then utilized as acting Assistant Superintendent Engineer in London and Antwerp, until July, 1921, when he was appointed Chief Engineer of the ex-German s.s. Tirpitz, which was renamed the Empress of Australia, which position he held until the end of Jan., 1923, when he returned to England from the Pacific, and was employed relieving superintendent engineers until his present appointment.

Hon. E. Lapointe, Minister of Marine and Fisheries, returned to Ottawa early in November from a trip to the Pacific coast, during which he attended to official business, and made a number of political speeches.

Fraser Macdonald, St. Lawrence River pilot, Prescott, Ont., is retiring from active service, and will move to Buffalo, N.Y.

Dr. W. L. McDougald, President, Montreal Harbor Commission, and Mrs. McDougald, sailed from New York, Nov. 3, for Europe.

J. B. Metcalfe, European Traffic Agent, Canada Steamship Lines, returned to London, Eng., recently from Canada.

Capt. James Moore, who died at the house of his son, Capt. Edward Moore, at Amherst, N.S., Nov. 13, aged 103, is said to have been the oldest man in Cumberland County.

Lt.-Col. W. Grant Morden, formerly a member of the Canada Steamship Lines' advisory committee, in London, Eng., is a candidate at the pending general election, for re-election to represent Brentford and Chiswick in the British House of Commons.

Capt. A. J. Mulcahy, St. John, who has been acting as Lloyds Agent for New Brunswick, since the retirement of C. McLaughlan at the beginning of the year, has been appointed to the position.

Capt. Martin Murphy, formerly a Great Lakes mariner, died Nov. 6, aged 77, at Elgin, Ont., where he had lived in retirement for some years.

Capt. C. D. Neurotos, Marine Superintendent, C.P.R., British Columbia Coast Service, Victoria, is reported to be acting as Manager, during the absence of Capt. J. W. Troup in Great Britain.

F. J. Norsworthy, Joint Manager, White Star Line, Liverpool, Eng., arrived in Montreal Nov. 7, on a trip of inspection of the company's principal agencies in Canada and the United States.

Capt. E. J. O'Neill, a lake mariner, died at his home at Bridgeburg, Ont., Nov. 20, aged 54.

Capt. Parry, of the Canadian Pacific Ocean Steamships s.s. Montrose, is reported to be retiring.

Capt. G. Pyke, of the Pyke Towing & Salvage Co., Kingston, Ont., has, a press report states, been asked by a New York salvage company to salvage a gold laden steamship sunk off the Mexican coast in 1862, and it said that he will make the attempt during the winter of 1924-25.

Frank Russell, for many years associated with marine interests in Vancouver, B.C., is reported to have been appointed Manager of the Ballantyne pier there.

H. M. Ruttan, who was in the service of James Richardson & Sons, Ltd., ship owners and grain dealers, Kingston, Ont., for 41 years, latterly as Treasurer, died Nov. 17.

G. E. Tanguay, President, Quebec & Levis Ferry Co., who died at Quebec, Nov. 6, was a practicing architect, and also the Quebec Government's chief architect.

J. L. Weller, formerly Chief Engineer, Welland Ship Canal, now President, Concrete Pipe & Products Co., Hamilton, Ont., Mrs. Weller and their two daughters, have left to spend the winter at Pinehurst, North Carolina.

Halfdan Wilhelmsen, who is said to be the second largest individual ship owner in the world, died at Christiania, Norway, Nov. 18.

J. Wilkinson, Manager, Midland Shipbuilding Co., Midland, Ont., who went to St. John, N.B., for the opening of the St. John Drydock & Shipbuilding Company's drydock on Oct. 29, remained there to superintend the repairing of the Norwegian steamship Kong Shavn, which went ashore on Briar Island, in the Bay of Fundy, a few days before.

Mrs. Winter has applied to the British Columbia Supreme Court for letters of administration in connection with the estate of Capt. Winter, master of the Canadian Government Mercantile Marine s.s. Canadian Raider, who disappeared March 24, 1920.

The s.s. Kong Shavn Disaster.

The Norwegian s.s. M. H. Kong Shavn grounded on the southwest ledge of Brier Island, N.S., Oct. 25, but was refloated with the rising tide, leaking badly. The pumps were kept going, and she reached St. John, N.B., under her own steam the same evening, and on Oct. 29 was the first ship to enter the St. John Drydock & Shipbuilding Co.'s dock, where a survey was held by Capt. Halverson, New York, for the underwriters, and Capt. Johansen for the Norwegian Lloyds' Classification Society. The survey showed that to put her in condition 104 plates would have to be taken off the bottom, and replaced, 70 new plates being required for this purpose; about 120 floors and frames to be renewed and part of tank top to be dealt with; a new stern frame to be fitted, and rudder shafting to be examined from crank to tail shaft, and replaced; pumps, steering gear and seacocks to be overhauled; and hull painted to load water line. H. H. McLean, Norwegian Consul, with Capt. Locke of the Danish steamship Winniconnie, and Capt. Mulcahy held a court under the Norwegian law, Nov. 16, and made a declaration of facts relating to the stranding. The owners subsequently abandoned the ship to the underwriters, and it was decided to sell her by auction at St. John, on Nov. 22. The Kong Shavn was built in Japan in 1919, is screw driven by triple expansion engines, supplied by steam from 2 boilers by forced draft at 180 lb. pressure, and makes 9 knots on a coal consumption of 16 tons; she is 1,177 tons net, 2,032 tons gross; and has cargo carrying capacity of 3,050 tons with full bunkers, or 960 standards deal carrying capacity. Brier Island is the second island south of Digby Neck, in the Bay of Fundy, and west of the Nova Scotia mainland. It has a white group flashing light, and a diaphone horn for use in foggy weather.

A press report states that the Kong Shavn was sold to F. O. Carson, of the New Brunswick Iron & Wrecking Co., for \$13,900, subject to the underwriters' approval.

Sault Ste. Marie and Suez Canals Traffic Compared.

It is more or less generally known that the tonnage passing through the Canadian and U.S. canals at Sault Ste. Marie is greater than that passing through the Suez Canal, but the magnitude of the difference is not, we venture to say, fully realized. Statistics of the Suez Canal operation during the first 6 months of this year show that 2,336 ship passages were recorded, totalling 11,489,000 net tons, compared with 2,130 passages in the first half of 1922, totalling 10,087,000 net tons. Eastbound cargo through the Suez Canal in the first half of 1923 was 3,752,000 d.w. tons, and westbound cargo 7,533,000 d.w. tons, a total of 11,285,000 d.w. tons. The total for the same period in 1922 was 10,651,000 d.w. tons, the increase being accounted for in good part by the increased development in the Persian oil fields.

In May and June of this year there passed through the Canadian and U.S. Sault Ste. Marie canals 5,639 ships, with a net tonnage of 17,997,057. Eastbound freight cargo was 17,978,796 short tons, and westbound 6,416,402 short tons, a total east and westbound of 24,395,198 short tons. It will thus be seen that the traffic through the Sault Ste. Marie canals in May and June was greater than through the Suez Canal in the first 6 months of the year.

Statistics of Sault Ste. Marie canals traffic, given elsewhere in this issue, show that in October there were 3,319 ship passages, the net tonnage being 10,101,507, that eastbound freight was 10,531,375 short tons, westbound freight 2,471,302 short tons, and total freight 13,002,677 short tons. By comparing the figures with those for the Suez Canal as given above, it will be seen that in the single month of October more ships

passed through the Sault Ste. Marie canals than through the Suez Canal in the first half of the year; that the net tonnage of the ships was almost as great, and that the cargo tonnage passing through the Sault Ste. Marie canals in October was greater than that passing through the Suez Canal in the half year. Considerations of this nature are necessary for an adequate realization of the traffic through the Sault Ste. Marie canals, and the magnitude of the Great Lakes shipping industry.

Difficulties of Unloading Whiskey in Newfoundland.

A St. John's, Nfld., press dispatch of Nov. 5 told the following lurid story:—"The Canada Steamships s.s. Manoa got away from this port tonight for Montreal after almost a day's delay due to research activities by the longshoremen who were unloading her cargo, from Montreal, of 7,000 cases of whiskey. Some time after operations were started on this section of the cargo the laborers in the hold showed signs of a liveliness that could not at all be ascribed to fumes from the liquor. Symptoms of giddiness were also displayed on the deck and adjoining pier. Presently some Sherlock Holmes made the discovery that cases had fallen open and bottles uncorked and that the laborers were making frantic efforts to prevent waste. When some of the men started carrying goods into doors that did not exist, and others walked over sides of the pier, that were certainly there, it was decided to suspend operations. Longshoremen turned to on Sunday, but started right in on their salvage work again. Whiskey cases mysteriously opened and displayed their contents. The jingle of breaking bottles was heard on the Sabbath eve and the odor of Canadian rye tainted the air.

Again closure had to be applied and the unloading squad for the second time moved their tortuous ways homeward. The final instalment of the liquor was removed from the Manoa this morning. Agents for the ship do not anticipate difficulty in recruiting laborers for discharging cargo so long as Ontario continues forwarding consignments of old mellow rye here via Montreal."

Public Works Marine Contracts Awarded.

The Dominion Public Works Department has awarded contracts as follows: Sept. 24, construction of freight shed, office room and shelter on wharf, at Chicoutimi, Que., A. Pedneault, Chicoutimi, Que., \$13,555.70; Sept. 26, dredging on both sides of wharf at Berthier, Que., Lachance Limitee, Quebec, Que., class B, 60c a cu. yd., scow measure; Sept. 29, extension to southern breakwater at Belle River, P.E.I., W. Compton and A. J. Ross, Flat River, P.E.I., unit prices; Oct. 1, reconstruction of portion of wharf at Lotbiniere, Que., J. E. Lowrey and John Mulhall, Ottawa, Ont., unit prices; Oct. 8, extension to breakwater, Battery Point, N.S., Reid Construction Co., Granville Ferry, N.S., 12¼c a cu. ft. of crib-work complete; Oct. 9, reconstruction of wharf in concrete, Lanoraie, Que., F. A. Grothe & Fils, Montreal, unit prices; Oct. 10, dredging harbor, Cobourg, Ont., Frontenac Dredging Co., Toronto, class B, 65c a cu. yd., scow measure; Oct. 13, dredging harbor, Collingwood, Ont., C. S. Boone Dredging & Construction Co., Toronto, Ont., class A, \$8.50 a cu. yd., scow measure, and class B, 75c cu. yd., place measure; Oct. 22, dredging channel at St. Michel de Bellechasse, Que., National Dock & Dredging Corporation, Levis, Que., class A, \$4 cu. yd., and class B, 55c cu. yd., scow measure.

Ships Registered in Canada in August and September, 1923.

In compiling the following lists of ships registered, steamboats and motor boats operated by engines of less than 10 h.p., are eliminated, as also are sailing ships of less than 100 tons.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, h.p. etc.	Owner or Managing Owner
August Registrations.										
150835	Cedarbay (1)	Montreal	La Seyne, France.....1919	218.8	34.3	12.4	1239	640	102 Sc.	Cedarbay Steamship Co., Montreal.
150848	Felicia	Montreal	Sorel, Que.....1923	84.5	24.0	11.1	196	14	54 Sc.	Sincennes McNaughton Line, Montreal.
106605	Jolly Inez (2)	Montreal	Sunderland, Eng.....1896	253.0	44.0	19.7	1850	1150	203 Sc.	H. W. Cowan, Montreal.
143804	Laura and Marion (3)	Weymouth	Bristol, Me., U.S.A.....1867	62.0	20.0	6.9	53	35	13 Sc.	W. Trolan, Belliveau Cove, N.S.
134055	Loyola (3)	La Have	La Have, N.S.....1914	83.4	23.4	9.7	99	85	30 Sc.	M. A. Nickerson, et al., Clarks Harbor, N.S.
150845	Sprucebay (4)	Montreal	Bordeaux, France.....1920	218.8	34.3	12.3	1238	646	100 Sc.	Sprucebay Steamship Co., Montreal.
September Registrations.										
151064	Almara	New Westminster	Tacoma, Wash., U.S.A.....1914	76.4	18.5	7.3	97	41	13 Sc.	White Rock Tug Co., White Rock, B.C.
150849	Ashbay (5)	Montreal	St. Nazaire, France.....1919	218.6	34.2	13.2	1223	643	77 Sc.	Ashbay Steamship Co., Montreal.
103907	Czar	Vancouver	Victoria, B.C.....1897	97.0	21.5	10.7	148	47	18 Sc.	Czar Towing Co., Vancouver, B.C.
144285	Franklin (6)	Ottawa	Paisley, G. B.....1919	135.7	29.0	13.6	468	20	116 Sc.	British Admiralty, London, Eng.
151587	Glenrig	Midland	Cleveland, Ohio.....(1890)	326.0	40.0	21.2	2723	1538	191 Sc.	Great Lakes Transportation Co., Midland, Ont.
114447	J. H. Plummer (7)	Montreal	Low Walker-on-Tyne, G.B.....1903	246.4	36.6	21.7	1626	988	144 Sc.	Kirkwood Line, Montreal.
150834	Maplebay (8)	Montreal	Bordeaux, France.....1920	218.1	34.1	12.3	1238	654	94 Sc.	Maplebay Steamship Co., Montreal.
151001	Michael, W.	Chatham, N.B.	South Nelson, N.B.....1923	62.0	11.0	7.0	62	42	19 Sc.	W. M. Sullivan Co., South Nelson, N.B.

(1) Foreign name Vernon. (2) Formerly Vickerstown and Turret Chief. (3) Formerly a sailing ship. (4) Foreign name Soutier. (5) Foreign name Tourneur. (6) Formerly St. Finbarr. (7) Foreign name Van Eyck. (8) Foreign name Sotteville and Greeur.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner
151062	C.R.M. No. 3	Vancouver	Barge—Chd	New Westminster.....1923	89.6	34.1	9.2	238	238	Campbell River Mills, White Rock, B.C.
151063	S.L.C. No. 4	New Westminster	Barge—Chd	New Westminster.....1923	90.5	32.1	8.3	206	206	Straits Lumber Co., Red Cap, B.C.
150994	K. 41	Vancouver	Scow—Chd	Vancouver, B.C.....1923	90.4	30.0	7.8	178	178	S. S. McKeen, Vancouver, B.C.

Longshoremen's Strike at Vancouver and Victoria.

Longshoremen employed on the Vancouver waterfront struck for higher wages, Oct. 8, and those working at Victoria subsequently asked for higher wages also. On Oct. 11, it was announced that the C.P.R. had placed an embargo on grain shipments to Vancouver, but it was ascertained by the marine interests that this embargo was provisional and would apply only in case of the port becoming blocked as a result of the strike. The British Columbia Shipping Federation, an incorporated body, which comprises 23 of the largest firms engaged in the marine business on the Pacific coast, took all necessary steps to safeguard shippers' interests and we were advised recently that it was able to secure sufficient men to prevent any blocking of the port, and that the loading and unloading of ships was being proceeded with in a practically normal manner. The Federation stated through the press that it was able to take care of all shipments of grain to Vancouver and had not only been able to do so, but previous records for loading at the elevator had been broken. Over 1,000 men were at work through the Federation's membership at the end of October, and all ships were being worked without delay.

Several efforts were made by local interests to bring about a settlement, but without effect, and the Minister of Labor advised the men, on Nov. 7, to return to work, when a board of conciliation would be established. F. E. Harrison, representing the Labor Department, was in Vancouver, Nov. 7, and had several interviews with officials of the Shipping Federation and of the International Longshoremen's Union, but could not succeed in establishing a basis of negotiation. The British Columbia Deputy Minister of Labor arrived in Vancouver, Nov. 8, when it was reported that there were over 1,400 men, all citizens of Vancouver or other British Columbia places, employed by the shipping companies, and that the work was being done satisfactorily. The number of longshoremen on strike was reported to be about 800.

At Victoria, a body of independent waterfront workers has been formed, to which the local shippers will, it is reported, give their support. A sufficient number of non-union men are available for loading and unloading all ships arriving at and departing from the port.

Montreal Harbor Improvements.

During this year the Montreal Harbor Commission has made a series of improvements to its property, on a very extensive scale, to maintain and increase the port's efficiency. The most important work of improvement has been the construction of another elevator, no. 3, near the Tarte pier, at the eastern end of the harbor. It has a capacity of 2,000,000 bush. and provision has been made for the addition of other units up to 14,000,000 bush. With the completion of the unloading jetty next year, this addition to the facilities will have cost \$2,850,000. The commission bought the G.T.R. elevator at Windmill Point, in March, and added to its 2,150,000 bush. capacity, a section with space for 1,350,000 bush. additional. The unloading, loading and general working facilities at this elevator have been improved and added to, so that it is now capable of unloading 262 cars a day, in addition to taking in

150,000 bush. a day from lake ships, and its capacity for loading outgoing ships has been increased from 450,000 bush. a day to about six times that figure. The cost of these improvements has been \$750,000.

The extending of the piers was commenced in 1919, and this year the extensions of the Alexander and King Edward piers have been completed. The extension of each of these was 300 x 300 ft. and 60 ft. high from the bottom of the river to the floor of the pier, each extension costing about \$450,000. Considerable improvements were also made on other wharves, about 750 ft. of new work having been completed at a cost of about \$300,000. Sheds 26 and 27 have been erected on the Tarte pier, adjoining shed 25, each 450 ft. long, and estimated to cost, when completely equipped, \$275,000.

Mechanical shops for the commission's purposes, have been provided, at a cost, with equipment, of \$150,000. The roadways on the harbor property have been improved, the lighting facilities added to, and the railway facilities increased by laying additional tracks to the elevators and the wharf extensions. In addition to all this work on shore, the commission began the work of providing a new basin between the Bickerdike pier and the guard piers. The dredging is reported to be well in hand, and when completed, will give a new basin 4,000 x 700 ft. and 35 ft. deep.

The total wharfage space of the port is 43,415 lin. ft., of which 1,398 is for ships of under 20 ft. draught, 15,090 for ships of less than 30 ft. draught, and 26,927 for ships of 30 ft. or over. There are berths for 28 ships 500 ft. long drawing 30 ft.; 36 berths for ships 400 ft. long drawing from 25 to 30 ft.; 17 berths for ships 300 ft. long drawing 20 ft., and 39 berths for ships 200 ft. long drawing 10 ft.

Vancouver Elevator Construction.

We are officially advised that plans submitted by the Vancouver Harbor Commission have been approved by the Minister of Marine, for the construction of a wharf and the dredging of a basin to be leased to Woodward & Co., Ltd., of Winnipeg, who are building a grain elevator in Vancouver, and for the purchase of the waterfront property from the company on which the elevator and the wharf will stand. The elevator, however, will be built and operated by Woodward & Co. Under the Vancouver Harbor Advances Act, the commissioners will be entitled to apply for advances on loan up to \$225,000 as this work progresses.

Woodward & Co.'s elevator is, we are

officially advised, located immediately east of the sugar refinery. The substructure was built by driving piles to bed-rock, gravel fill and reinforced concrete mattress being superimposed thereon. The cofferdam used during construction is left in place, with a gravel fill between the wall of the cofferdam and the elevator, and gravel fill on the outside of the cofferdam as protection against wash. The elevator warehouse is of timber, metal clad. There are 2 main receiving legs, each of 15,000 bush. an hour capacity, either or both of which can be used for shipping. There are 4 receiving pits in the track shed; the track shed is carried up a second story, providing a warehouse for the operating of sacking machines. The cleaning equipment consists of 4 monitor separators on the ground floor. There are 4 cleaning legs to take care of the cleaned grain from each of these machines, and a screening leg to take care of the by-product from them. On a distributing floor are 3 disc separators which will rehandle the by-product from the monitors, and there are two Fairbanks 2,000 bush. scales. The storage annex to the plant consists of 18 concrete tanks with 500,000 bush. capacity each. The workhouse is designed to add further cleaners, so that it can serve 1,000,000 bush. of storage. The dock is 1,655 ft. long, and the elevator is located midway on the structure, to permit 40 loads to be placed on the head track, and 40 empties on the tail track. A conveyor belt extends from the elevator to the outer end of the pier. The grain from the conveyor is transferred to steamships from the conveyor belt by a movable leg. The structure carrying this loading leg is mounted on rails and can be moved to any point on the wharf necessary to reach any hatch of the ship loading. The elevator was designed and built by Dominion Construction Co., Vancouver, work being started in March. The structure was expected to be completed by Nov. 30.

Canada Shipping Act Changes Asked.

—During his recent visit to Vancouver, B.C., the Minister of Marine and Fisheries received a deputation from the Canadian Merchant Service Guild, and discussed a number of matters affecting the interests of marine men, in regard to which revision of the Canada Shipping Act was considered desirable. These included the provision that complainants must prosecute for violations of the act, appeals from wreck commissioners' decisions, inspection of hulls at same time as ships' machinery, and that in preparing amendments to the act, practical marine men from the Atlantic and the Pacific coasts and the Great Lakes form an advisory board.

Ships Added to and Deducted From Canadian Register During August and September, 1923.

Added.	No.	Steam.—Tonnage—		No.	Sailing.—Tonnage—	
		Gross	Net		Gross	Net
Built in British possessions.....	2	258	56	8	888	888
Purchased from foreigners.....	5	4,955	2,594	.....	.....	.....
Transferred from United Kingdom.....	3	3,944	2,658	.....	.....	.....
Transferred from British possessions.....	.....	.....	.....	2	123	115
Registered anew.....	3	2,907	1,590	1	74	74
Totals.....	13	12,064	6,898	11	1,085	1,077
Deducted.						
Wrecked or otherwise lost.....	2	1,019	598	3	1,414	1,383
Broken up or unfit for use.....	3	1,112	751	2	157	157
Transferred to British possessions.....	1	346	199	2	496	461
Sold to foreigners.....	.....	.....	.....	1	491	449
Registered anew.....	3	2,711	1,698	7	349	332
Totals.....	9	5,188	3,246	15	2,907	2,782

New C.P.R. Steamships for British Columbia.

During his recent visit to the Pacific coast, E. W. Beatty, President, C.P.R., announced that the company would build two additional steamships for its British Columbia coast service. We are officially advised that they will be for the triangular service between Victoria and Vancouver, B.C., and Seattle, Wash., and will be somewhat similar to the s.s. Princess Louise, but larger and faster, and that plans are being prepared, and tenders will be invited from shipbuilders in Great Britain. The Esquimalt Board of Trade endeavored to secure the co-operation of other public bodies in an effort to have the ships built in British Columbia, but this was not possible. Captain J. W. Troup, Manager, B.C. Coast Service, arrived in Montreal, Nov. 7, from Victoria, and was in consultation with E. W. Beatty, President, and other C.P.R. officials, respecting the placing of the orders for the ships. He is reported to have said it was intended originally to have had them built on the Pacific coast, but it was not found to be practicable. The engines necessary could not be built in Canada, and it was not practicable to build the hulls in Canada and the engines elsewhere. Captain and Mrs. Troup sailed on the Empress of France, Nov. 10, for Liverpool.

Canal Traffic Statistics.

The Dominion Bureau of Statistics, Transportation Branch, has issued the following summary of canal statistics for September:—

Sault Ste. Marie—Heavy iron ore shipments, viz., 9,480,891 tons, against 6,658,148 tons last year, accounted for practically all of the 1,788,824 tons increase in traffic through the Canadian and United States locks. Wheat fell off 14,885,743 bush., and other grains 7,366,433 bush. The movement of grain to the country elevators was about a week later this year, but the heavy movement to Fort William and Port Arthur was about two weeks later than last year. Of the 20,261,922 bush. of Canadian grain from Fort William and Port Arthur, consisting of 17,123,761 of wheat, 1,624,578 of barley, 1,005,449 of rye, 387,816 of oats, and 120,318 of flax, 12,269,845 were destined to Canadian ports and 7,992,077 to U.S. ports. Canadian ships carried 15,-

229,205, or over 75%; U.S. ships 4,736,066, or 23%, and Norwegian ships 296,651, or 2%.

Welland.—Wheat shipments increased 14%, or 36,317 tons; barley increased 9,949 tons and rye 21,076 tons, but corn decreased 44,313 tons and oats 11,961 tons. Soft coal shipments increased 23,334 tons, and sand 21,175 tons, while pulpwood declined 6,372 tons, and total traffic increased 45,673 tons, or 9% over last year.

St. Lawrence.—Canadian steamships increased 124,920 net tons, while U.S. steamships decreased 60,371 net tons. Passenger traffic was heavier than last year by 1,581 passengers, but freight traffic decreased 11,102 tons. There were decreases in corn of 46,372 tons; oats, 12,937 tons; flour, 4,653 tons; lumber, 3,826 tons; anthracite coal, 1,503 tons, and bituminous coal, 21,878 tons. Barley, rye and wheat increased 14,922 tons, 19,818 tons and 16,634 tons, respectively.

International Fishermen's Trophy Races.

The third contest for the international fishermen's trophy was arranged to be sailed off Halifax, the first race to be Oct. 29. The defender was the Lunenburg, N.S., schooner Bluenose, which won the trophy in 1922, the challenger being the specially built schooner Columbia of Gloucester, Mass. Bluenose won the opening contest in 4 hr. 43 min. 42 sec. elapsed time, beating the Columbia by 3 minutes. In the second race the wind fell away to such an extent that the course could not be sailed within the time limit, and the race was declared off, the Columbia being in the lead by about 4 minutes. The schooners again met in the contest Nov. 1, when Bluenose made the course about 2 minutes ahead of Columbia. A protest was entered by Columbia that Bluenose had passed on the wrong side of one of the buoys, in contravention of the general racing directions, and the committee awarded the race to the challenger. The captain of Bluenose, shortly afterwards, sailed his vessel back to Lunenburg, saying he was through. The Columbia's captain declined to sail the course alone in the third race, and the committee decided to retain the cup, and to divide the prize money as expenses between the two contestants. Is international racing worth while?

Dominion Quarantine Regulations and Stations.

An order in council was passed May 9, approving revised quarantine regulations under the Revised Statutes of Canada 1906, chap. 74, sec. 8. These have been put into force by the Governor-General's proclamation, dated Sept. 12, and published in the Canada Gazette, Oct. 20.

The whole of the Canadian quarantine service is controlled by the Minister of Health, and is administered under him by the Health Department. The organized quarantine stations in Canada are: Grosse Island, St. Lawrence River, with Father Point as the inspecting base, and Quebec and Montreal harbors as substations; Halifax, N.S., the harbor and Lawlors Island; Sydney, N.S., North Sydney, the harbor and Point Edward; Louisburg, N.S., and the harbor; St. John, N.B., the harbor and Partridge Isle; Victoria, B.C., the harbor and William Head, with Vancouver and the harbor as a substation. Each of these organized stations is in charge of a medical quarantine officer, and substations are in charge of the chief or senior immigration medical officer. All other maritime ports are designated unorganized maritime quarantine stations, the local collector or sub-collector of customs being quarantine officer. The regulations specify the diseases for which quarantine is declared, and cover the disinfection of ships, isolation of sufferers on board, the cleaning or destruction of clothes and outfit, and the preventing of rats coming on board from infected ports. It is provided that costs incurred in connection with such quarantining of ships' personnel other than the crew will constitute a charge upon the ship from which such persons are removed, according to a scale of fees approved by the Minister of Health. The fee payable to a quarantine medical officer for each medical inspection is \$10.

Pacific Salvage Co.'s Operations.

The Pacific Salvage Co.'s wrecking ship *Algerine*, while on her way to the assistance of the stranded s.s. *Kennecott*, on one of the Queen Charlotte Islands group, went ashore on Brodie Rock, Principe Channel, between Banks Island and Pitt Island, Oct. 13, at 5.50 p.m. Brodie Rock is, we are advised, submerged at half tide, and is shown on charts as being one mile from shore, but reports state that it is a mile and a half off shore. It was a very dark night and raining hard at the time of the stranding. The *Algerine* was refloated Oct. 14, at 4 a.m., and was towed by the tug *Nanoose* to Esquimalt, where she was put on the ways on Oct. 23 for examination. The survey showed very extensive damage. The company is reported to have transferred the *Algerine's* wrecking equipment to the C.P.R. s.s. *Tees*, which will be used for salvage work for some time.

The company's tug *Hercules* was sent on to the stranded s.s. *Kennecott*, following the *Algerine's* stranding. The *Kennecott* was reported, Oct. 23, to have broken up. Capt. John Johnson, the master, who had remained with the ship, returned south on the *Hercules*, and was transferred subsequently to the Union Steamship Co.'s *Venture*, from which he disappeared, and it is believed he was drowned.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during October:—

Articles	Canadian Canal	U.S. Canal	Total
Lumber.....Eastbound	M. ft. b.m. 3,520	18,021	21,541
Flour....."	Barrels 812,830	863,880	1,676,710
Wheat....."	Bushels 6,012,731	47,880,574	53,893,305
Grain, other than wheat....."	Bushels 3,343,522	6,588,378	9,931,900
Copper....."	Short tons 1,758	7,823	9,581
Iron Ore....."	Short tons.....	8,460,932	8,460,932
Pig Iron....."	Short tons 100	2,968	3,068
Stone....."	Short tons 1,700	2,580	4,280
General Merchandise....."	Short tons 4,104	9,039	13,143
Passengers....."	Number 424	27	451
Coal, Soft.....Westbound	Short tons 31,365	1,999,719	2,031,084
Coal, Hard....."	Short tons.....	200,600	200,600
Iron Ore....."	Short tons.....	13,888	13,888
Manufactured Iron and Steel....."	Short tons 2,783	7,243	10,026
Salt....."	Short tons 1,342	6,417	7,759
Oil....."	Short tons 2,500	16,377	18,877
Stone....."	Short tons.....	97,164	97,164
General Merchandise....."	Short tons 43,461	48,443	91,904
Passengers....."	Number 306	34	340
Summary			
Ship Passages.....	Number 707	2,612	3,319
Registered Tonnage.....	Net 1,133,295	8,968,272	10,101,567
Freight—Eastbound.....	Short tons 343,038	10,188,337	10,531,375
Westbound.....	Short tons 81,451	2,389,851	2,471,302
Total Freight.....	Short tons 424,489	12,578,188	13,002,677

The Inland Water Freight Rates Act's Final Failure.

As stated in Canadian Railway and Marine World for November, pg. 552, the Board of Grain Commissioners, presumably under the Dominion Government's authority, practically authorized complete evasion of the text and spirit of the Inland Water Freight Rates Act, 1923, by issuing the following notice: "To all concerned.—You are hereby notified that the Board of Grain Commissioners is prepared to accept as a compliance with the Inland Water Freight Rates Act, 1923, sec. 3, either the filing with the Board of tariffs by the ship

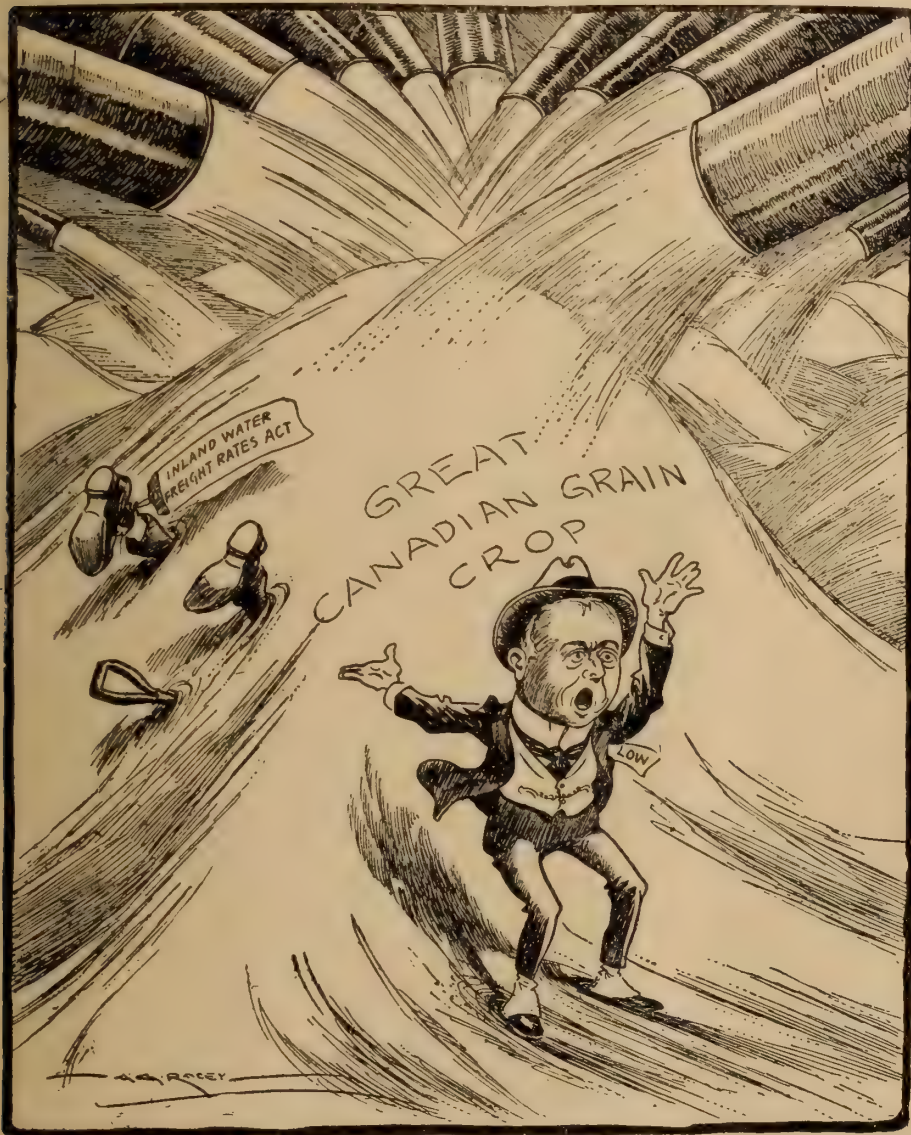
shippers before loading, of copies or contracts for space, as this, so far as the ship is concerned, restores and preserves our right of contract, and places no obligation on the ship. It would, of course, not affect the reasonableness of the rates, because we assume that before the shipper definitely closes his contract with the ship he has due approval of the Government. With this understanding we see no objection to United States ships taking Canadian grain as in previous years."

The first result of the Board of Grain Commissioners' notice, which was natur-

ject of discussion being the ruling by which filing of rates by shippers would be accepted in place of filing by ship owners. The U.S. ship owners pointed out that if they evaded the act in the manner indicated in the Board's notification of Oct. 19, there was nothing to prevent private individuals or competitive interests starting legal proceedings against them under the act. They therefore demanded that, before they would accept the invitation to go ahead and violate the Canadian law, as extended to them by the Board of Grain Commissioners and the Government, they must have assurances as follows: That should the Canadian shipper fail to register with the Board of Grain Commissioners a copy of his charter of any U.S. ship at the time that charter was made, he would indemnify the U.S. ship owner for any loss which might arise from the non-filing of such charter; also that, having filed the charter at the time it was made, the Canadian shipper would undertake to indemnify the U.S. owners, through the Board of Grain Commissioners, for any loss which might occur through any proceedings which might be taken against the ship.

Messrs. Boyd and Snow proceeded immediately to Winnipeg and, on Oct. 29, called a meeting of interested shippers and brokers, to acquaint them with the U.S. ship owners' demands. The shippers, at this meeting, expressed themselves as willing to indemnify the U.S. ship owners against loss, particularly when Mr. Boyd, as representing the Board of Grain Commissioners, and presumably the Dominion Government, announced that he would give the Secretary of the Winnipeg Grain Exchange, for the shippers' protection, a guarantee of indemnification against legal proceedings or claims for damages which might be instituted by private parties in connection with the chartering of U.S. ships and the filing of rates by shippers instead of by ship owners. As a result of the shippers' willingness to protect the U.S. ship owners under these conditions, the following provision was drawn up, to be included in all U.S. ship charters:

"This charter is made with the understanding that the Board of Grain Commissioners of Canada, with approval of the Canadian Government, has duly ruled that the Inland Water Freight Rates Act of Canada will be so complied with as to authorize the shipment of grain from Canadian ports, if the shipper shall, before loading, file with said Board copies of charters of contracts for space entered into for grain shipments. And it is agreed, that the shipper shall, and will, on his own behalf, and not as representing the vessel owner (the vessel owner assuming no responsibility therefor), promptly, upon the execution hereof and before any loading takes place, file copies of charter or contract for space as required by the Board of Grain Commissioners of Canada, so as to render all shipments herein provided to be made fully authorized by Canadian authority, —so that such vessel employed hereunder may, in every case, freely enter the port or ports of shipment and receive its cargo, and that clearance may be obtained and the vessel may leave port, without prevention, hindrance or liability because of or under said Inland Water Freight Rates Act of Canada; and that the shipper shall, and will, indemnify and save and keep the vessel owner



The Inland Water Freight Rates Act, 1923, Muddle.

Minister of Trade and Commerce (noting work of new grain shoveler): "Help! Help! His work is most unsatisfactory! He's causing a blockade! Help!" Reproduced from Montreal Star.

owner, or the filing by the shippers, before loading, of copies of charters or contracts for space." As further stated in our November issue, the U.S. ship owners appeared satisfied to come in to the Canadian grain trade providing the shippers filed the statements, as evidenced by a telegram sent on Oct. 22 by the U.S. ship owners' committee chairman to the Board of Grain Commissioners Chairman, which was in part as follows: "The vessel owners here represented will decline to file such tariffs. We can have no objection to filing by the

ally regarded by all as a complete confession, by the Dominion Government, of the legislation's futility, and which, authorizing action directly contrary to the act's intent and purpose, had a most undesirable influence in bringing Parliament and its statutes into contempt, was a precipitate decline in lake grain rates, the rate from Fort William dropping about 2c to all ports.

On Oct. 25, Chairman Boyd and Commissioner Snow of the Board of Grain Commissioners were in Cleveland in consultation with U.S. ship owners, the sub-

harmless from all loss or damage resulting from any failure to so file this charter; or, having so filed the same with the Board of Grain Commissioners, in case any liability shall be asserted against the vessel, her owner, agents or servants, by reason of any shipment or proposed shipment hereunder, the shipper shall, and will, through the Board of Grain Commissioners, or otherwise, indemnify, save and keep harmless therefrom the vessel, her owner, agents and servants. And in consideration of the foregoing on the shipper's part, the vessel owner agrees to perform his part of the charter to carry the cargo as above provided."

By Oct. 31, the situation was that the Dominion Government had finally found a way to allow U.S. ship owners to vio-

late the law, Canadian grain shippers guaranteeing to protect the U.S. ship owners in that violation, the Board of Grain Commissioners guaranteeing to protect the shippers, and the Dominion Government, in effect, guaranteeing to protect the Board of Grain Commissioners.

The bringing about of this state of affairs just about concluded the brief and meteoric career of the Inland Water Freight Rates Act, 1923, so far as its operation in the 1923 grain shipping situation was concerned, and this coincided very closely with well-informed expectation. With the Government's abject surrender—the abjectness heightened by the cheap and transparent camouflage employed—which might have been avoided if a frank admission concerning the

act's impracticability had been made, competition supplemented the Inland Water Freight Rates Act as the controlling feature in the lakes grain shipping situation, rates continued their decline from the point reached in the abrupt drop following the giving of full permission to evade the act, until by the middle of November, 3c was the ruling rate to Buffalo and Georgian Bay ports, Canadian farmers ceased to experience the huge losses which the act was inflicting on them, members of the grain trade were enabled to make contracts with assurance that lack of transportation would not prevent them carrying them out, and another bungling attempt by a Government to interfere with the full and free flow of trade and commerce came to an inglorious conclusion.

Wreck Commissioners' Enquiries and Judgments.

Grounding of s.s. Canadian Sapper.

Held at Montreal, Oct. 2, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. J. O. Grey and C. Lapierre, into the grounding of Canadian Government Merchant Marine s.s. Canadian Sapper, off Red Island, in the St. Lawrence River, Aug. 29, with no apparent damage. Capt. A. Blouin, of the Canadian Sapper, stated that he was bound from Newfoundland to Montreal, light, and had taken on a pilot at Father Point, and having been on deck for 3 days previously, and the weather being clear, he left the ship in charge of the pilot, Rodrigue Lachance, with the express command to run no risk and to anchor if fog came on. The order book showed that it was his wish to be called if the weather became hazy or foggy, and the night orders ended with a request to be called if wanted. Some minutes before the casualty he was called by second officer Neil MacDonald, on account of fog, and he dressed immediately, taking about 4 minutes to leave for the bridge, when the telegraph was put at half speed, the ship striking shortly after. The course was s.w. by w. $\frac{1}{4}$ w., and a deviation of 7 to 8 deg. easterly. He said there was a light breeze, but this did not accord with the log book. The ship remained fast for about 4 hours and floated off with the rising tide, apparently undamaged. He helped the pilot to make a report. The pilot stated that he had been a pilot for 6 years, and had not appeared previously before a court of enquiry. He made the lightship at Red Island within $1\frac{1}{2}$ cables, and altered the course when the lightship was seen on the port bow, proceeding at full speed until the fog thickened, when speed was reduced and the captain was called. It was ebb tide, and he had run 25 minutes when the ship grounded. He could not tell exactly as to the captain's orders, or if he ordered anchoring when the fog was thick, but he stated that there was thick fog all the time from leaving the lightship on the starboard beam until the grounding. The second officer, Neil MacDonald, stated that fog came on at 8.40 a.m., the ship striking at 8.54, and that half speed was put on at 8.48. There was no order for a cast, and there was a light breeze from the southwest. The third officer, D. Squires, stated that he saw all of the lightship, and objects were visible $2\frac{1}{2}$ miles, that a light southwest wind was blowing, that the lightship was seen $1\frac{1}{2}$ points on the port bow, and the course was changed to s.s.w., until the lightship was abeam. He

thought there was a 5-mile ebb flowing. He was relieved by the second officer and left the bridge at 8.32. The wheelman stated that the course had been changed 5 or 6 times and that the telegraph was rung but once. The chief engineer, T. H. Angell, stated that at 8.40 the ship was going full speed, at 8.44 half speed was given, the ship grounded later and a stop order was received, and no other. The court held that as to the circumstances preceding the grounding, many contradictory statements of a minor nature were made. It considered that the captain was justified in taking a rest when the weather appeared to be, and was, clear, and that he took the necessary steps upon leaving the bridge to caution the pilot, his night orders being very explicit. The time taken for him to reach the bridge would have been open to criticism, if more definite information had been given him by the second officer as to the passing of the lightship. There was no apprehension of danger in his mind, and evidently, not in the second officer's mind. Hence the 4 minutes taken to reach the bridge was excusable, and no blame can be attached to the captain for the casualty. The second officer, it would seem, by the entries in the log and the inconsistencies in the evidence, did not follow to the letter the captain's instructions, as found in the night order book, but it appears that the ship was for some time enveloped in fog before a decision to call the captain was reached, which, in the court's view, constituted a disobedience of orders. The pilot also disregarded the captain's orders to anchor when foggy, and to take no chances. As his course had been given to pass in the South Traverse, in accordance with the company's wishes, the company having forbidden the navigation of the north channel, the finding of the lightship on his port bow was sufficient to indicate to him that the deviation given him fell short of accuracy. His course from the lightship, after bringing it on the starboard beam, was considered by the court as too fine, in view of the conditions prevailing. It was not proved that the pilot saw the buoy when the ship grounded, and which he stated was on his port. The pilot should have anchored, thereby meeting the captain's prudent request, when the lightship was left on a s.w. by w. course, with fog, either prevailing, or thickening. Capt. Blouin was therefore exonerated from blame for the casualty, second officer MacDonald was reprimanded severely and advised that

if he appeared before the court again and be found wanting, his certificate would be dealt with. Pilot Lachance, seeing that it was his first appearance before a court of enquiry, was reprimanded severely for disregarding the captain's orders to anchor, and take no chances, and was cautioned that if, on a future appearance, he is found in default, his license would be dealt with.

S.s. Siberian Prince Stranding.

Held at Victoria, B.C., Oct. 4-6, by Capt. John D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. B. C. Combs and Harry Mowatt, into the stranding of the British s.s. Siberian Prince on Bentinck Island, near Race Rocks lighthouse, B.C., on July 28, about 1.44 a.m. The court having carefully heard, on the one part, evidence of a convincing and unreserved character, substantiated as it was, by other expert evidence, of an unbiased and impartial nature, finds, for the reasons stated in an annex, that the stranding of the Siberian Prince during a dense fog, was caused solely through the agency of two factors, the one being a strong northerly set of the spring flood tide, and the other the inaudibility of the fog alarm established on the Race Rocks. There can be no less doubt of the efficiency of the fog sounding apparatus (it being clearly established as being of the most modern type) than there can be of the fact that it was in operation, both before and after the vessel stranded, but nevertheless for some reason, which the court is not prepared to explain, there can be little question, that it was never heard by those on board the ship. The court, therefore, in view of the foregoing, and being of the opinion that the ship was being navigated with every care and attention, a good and proper course being steered and attended to, due allowance made for the set of the tide, speed reduced, a careful and efficient lookout kept, whistle blowing, log streamed and frequently read, soundings taken, stellar observations to determine the compass deviation obtained, returns to the master of the ship, Robt. Milliken, his certificate of competency as master, no. 034836, and absolves him from all blame for the stranding of the ship. No possible blame, in the court's opinion, can be attached to Wm. Anderson, second officer, who was on duty at the time of the casualty, and who impressed the court as being a most capable and efficient officer, or to any other of the deck or engine room officers or other ratings of the crew.

Steamboats Archibald and W. J. Guest Collision.

Held at Selkirk, Man., Oct. 5, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Herbert Barker and Hugh Cochrane, as nautical assessors, into collision between the steamboats Archibald and W. J. Guest, on the Red River, on Oct. 5, at 10.45 p.m., resulting in the death of two of the Archibald's crew. The court having carefully weighed the evidence adduced, and for the reasons given in the report, found M. McLeod, master of the Archibald, in default for violating the International Rules of the Road, articles 27, 28 and 29, which, the court is of opinion, govern the navigation of Lake Winnipeg and its tributaries. With respect to W. P. Simpson, master of the W. J. Guest, the court found that he was carrying on board his boat, in contravention of the Canada Shipping Act, a number of passengers, and also violated articles 27, 28 and 29 of the rules; and, if his testimony that the weather was misty, and he could see no further than 100 yards, was correct, he also violated article 15. The onus for this sad accident, which was attended with loss of life, must be borne to a greater extent by the W. J. Guest, as there seems to have been neglect in keeping a proper look out, especially in view of the fact that the master had on board other lives than those of his crew. In view of the above, the court suspended Capt. Simpson's certificate for one year, Oct. 29, 1923, to Oct. 29, 1924. The court ordered Capt. McLeod to defray costs of the investigation, amounting to \$300, payable to the Marine and Fisheries Department at Ottawa, on Nov. 30, 1923.

The Manchester Liners Canadian Services.

The directors of Manchester Liners Ltd. report, presented at the recent annual meeting, showed a net profit of £65,812 15s 10d, after paying interest on the 5% preference shares, which, added to the surplus from the previous year, made £107,296 1s 6d available for disposal. The Chairman, Sir Frederick Lewis, in moving the adoption of the report, said, in part:—"As mentioned in the report, the steamships employed in the Canadian service have been partially refrigerated, and it is expected that this departure will lead to a greater carrying of the commodities which require such space and which have not hitherto come direct. The increase in quantity of this particular class of cargo has been of good proportions. This departure is in accordance with the directors' policy in keeping your company up-to-date in every respect. As many shareholders are aware, the embargo on the importation of Canadian store cattle, which has been a source of grievance with our Canadian cousins for many years past, was removed in April last, and up to the close of our trading year we obtained substantial shipments. In my remarks last year respecting cattle shipments, I mentioned that for a variety of reasons, which we could not control, we had, up to that time, been compelled to agree to Birkenhead delivery, but that when the embargo, the removal of which had then been decided upon, became operative, we hoped we should be able to get shipments to Manchester. I am glad to be able to say these anticipations proved correct and that all the cattle carried by our ships from April to June 30, numbering 4,039, were for delivery at this port."

Trend in Canaller Construction.

A naval architect has written Canadian Railway and Marine World as follows: "There are many who think that finality has practically been reached in canaller design and construction, and that no major changes are to be looked for in the near future. I do not by any means subscribe to this view. Necessity, which in this case may be termed competition, is the mother of invention, and we shall undoubtedly see very considerable improvements over present types, or I miss my guess.

"It is a well known fact that the useful life of warships is very short, they becoming obsolete long before physical deterioration sets in. The same principle applies to all ships built for a special trade, or to suit special conditions of navigation. On this account it is almost fatal, from the point of view of successful competition, to build a ship which is not at least in the van of the latest developments in marine architecture or engineering. From a physical aspect, the life of a steel ship in fresh water, given ordinary care in upkeep, may be assumed to be at least 35 years, but there is a grave likelihood that if, when a ship is built, owners are content merely to repeat a type which has been successful in the past, she will be to a greater or less degree obsolete, long before her natural life has expired, and at a serious disadvantage, commercially speaking, with ships built, say, 15 or 20 years later. It is questionable if this consideration alone is not sufficient to justify an executive in accepting some degree of chance in giving a proposed improvement a trial, provided, of course, he is advised by a competent authority that the prospect of a successful issue is reasonably assured. It is often a case of 'nothing venture, nothing win.'

"Leaving aside the package freight business, which is not a big factor, we have three principal bulk trades on the St. Lawrence canals system, grain, coal, and pulpwood. The latest type of canaller is generally very well adapted to grain and coal transportation, loading and discharging being effected in very short order, though little credit is due the ships, the speed of handling being almost entirely due to the exceptional shore devices which have been developed. When, however, one considers the pulpwood trade, and this is a movement likely to grow, rather than diminish, the proposition seems to be a little beyond existing shore facilities, and it is assured that if improvement is to be effected, it must be accomplished by development in ship design. In this connection it is noteworthy that transportation of special bulk cargoes, as distinct from general cargoes, has in the past invariably developed a special type of ship, and just as surely as the oil business has developed the tanker; the coal trade, the collier; the meat and fruit trades, the refrigerator ship; passenger traffic, the liners, etc., just so surely the pulpwood business is now attaining the importance and magnitude to exercise a very decided influence on canaller design. Possibly what will prove of the greatest difficulty will be to find the best compromise to suit equally all three of these major cargoes. It is obvious that if it is possible to evolve a type of ship which will handle pulpwood cargoes with the same facility and economy with which grain and coal cargoes are moved, and without impairing the ship's handiness in the

grain and coal trades, a very great advance will have been made in the general efficiency and economy of the canaller type of vessel. This problem presents a very fascinating sphere for investigation and experiment.

"Another factor which will soon have to be taken into consideration by interests purposing building ships for local waters is, what influence will the completion of the new Welland Canal have on the St. Lawrence canals traffic. The upper laker will come to the eastern end of Lake Ontario, instead of Lake Erie, canalling will be very considerably reduced for the smaller type of ship, and its navigation, except for the Gulf trade, will be confined to much more sheltered waters than at present. Some are of the opinion that few more of the existing type of canaller will be built, and that instead it would be better to build a straight canal barge of the fullest dimensions and form, with accommodation for the minimum crew, and with machinery only sufficiently powerful to propel it in the canals at the restricted speed prescribed by the regulations. These barges to be handled in the small intervening lakes and river stretches between canals, by tugs of adequate power to obtain the accelerated speeds possible in these stretches. In this way the carrying capacities of the individual units could be considerably increased and their cost reduced.

"At the risk of appearing to present an interested viewpoint, it may here be remarked that the trend in some quarters to arrange for the building of new tonnage through brokers, who have merely a superficial or talking knowledge of design, or directly with shipbuilders 4,000 miles away, who have no firsthand knowledge of operating conditions, is an error in judgment, which is undoubtedly putting a curb on the evolution of the best type of ship.

"These remarks have been confined to the question of general design and operating conditions. There are, however, many questions of detail, just as important in the aggregate, which give food for reflection, such as the adoption of the oil engine, the use of oil-fired boilers, protection against canal damage, ship equipment, etc., and which all go to indicate that we are a long way off finality in the development of the best type of ship for inland water navigation."

Tide Tables.—The Dominion Marine and Fisheries Department, Tidal and Current Survey, has issued tide tables and information on currents for 1924 for Canadian eastern coasts, including St. Lawrence River and Gulf, the Atlantic coast, Bay of Fundy, Northumberland and Cabot Straits, also for Canadian Pacific coast, including the Fuca and Georgia Straits and the northern coast, with data for slack water in the navigable passes.

Yarrow & Co., shipbuilders, Glasgow, Scotland, are reported to have been given an order to build a large shallow draft river steamboat for the Anglo-Saxon Petroleum Co., for the Yangtse-Kiang River, in China, which will necessitate the re-opening of their Scotstoun yard, which has been closed since 1921. It is said that the date of resumption of work will depend on the settlement of the protracted boilermakers' strike.

Toronto Harbor Commission's Chairman Resigns.

R. Home Smith, Chairman, Toronto Harbor Commission, has resigned after serving on the Commission for 12 years. His term would have expired on Dec. 31. At a dinner given by the Harbor Commissioners to members of the Toronto City Council and others on Oct. 30, at which he announced his resignation, he stated that he and his colleagues had not had the undivided support of the citizens, the press and the city council, and that he had no desire to continue under such conditions. Other harbor commissioners present were R. J. Fleming, ex-General Manager, Toronto Ry. Co.; T. L. Church, M.P. for North Toronto; and R. S. Gourlay. Messrs. Fleming and Gourlay, in brief speeches, left the impression that it was their desire to resign from the commission also, consequent on Mr. Smith's resignation, and Mr. Church stated that if his three colleagues resigned, he would also. In a statement made prior to the announcement of his resignation, Mr. Smith said that if the harbor undertaking is to be successful, the commissioners must be given authority to sell reclaimed land (not that actually on the waterfront, but closely adjacent thereto) to industrial corporations. The situation has been that the commission has been empowered to lease land only.

Since the last municipal elections in Toronto, at the end of 1922, when a proposal to bring hydro radial railways into the city from the west along the lake-front was defeated, there has been a very noticeable hostility to the harbor commission in certain quarters, on account, presumably, of its opposition to that proposal, and it is freely stated that it was on account of that attitude, and of criticism of extreme and undesirable type by a section of the local daily press, that Mr. Smith resigned.

The C.P.R.'s Steamship Empress of Australia in the Earthquake in Japan.

The C.P.R. has issued, in a 24-page booklet, the official report of Capt. S. Robinson, R.N.R., commander of the company's s.s. Empress of Australia, on the earthquake at Yokohama, Sept. 1, and the services rendered subsequently. It contains two illustrations, an auto-graphed portrait of the author, and a view of the Empress of Australia. The report is written in simple and terse language—that of a man of action—and its simplicity and directness is a tribute to the writer's modesty, as his actions during the fearful experience were a tribute to his resource and courage. The incidents of the disaster as they were brought under his notice from noon on Sept. 1, when, as the steamship was preparing to leave the dock at Yokohama, the first shock of earthquake took place, until Sept. 12, when after encountering innumerable difficulties, including a fouled propeller, a sea of burning oil, and serving as a hospital and relief ship for the earthquake sufferers, the Empress of Australia left the scene of the disaster for Vancouver. There were several occasions when the ship could have got away safely, but in the words of Capt. Robinson's narrative:—"Mr. Boulter, the British Consul, said he wished us to stay in port as there was no other ship in the harbor suitable for taking care of

the refugees who were coming in all the time from the districts near Yokohama. I told him, Mr. Rankin and Mr. Fitzgerald" (of the C.P.R. staff) "agreeing, that I considered, and I was sure my company would consider it my duty to stay as long as it was necessary, in order to save life and rescue and relieve the distressed, and if he, or some one else in authority, was not here I should stay on my own responsibility the same as I would in a disaster at sea."

Capt. Robinson said in regard to the C.P.R.'s staff in Yokohama: "I was very glad to have James Rankin, General Agent, and M. Fitzgerald, Special Representative, on board; their tact and sound good sense were a great help at all times. I should also like to mention the help given to our Purser's staff by E. Hopes, Passenger Agent, who stayed on the ship until we arrived at Kobe, and worked very hard."

The report concludes with an expression of strong admiration and appreciation of the work and conduct of all the officers and crew; of a tribute to the British Consul, and a tribute to the captain and crew of the tank steamer Iris, which towed the Empress of Australia out to safety after her propeller had got foul of an anchor chain, which was finally removed by divers from a Japanese and a British warship. Appended to the report are letters addressed to Captain Robinson by the refugees, passengers on the ship, and the United States Relief Committee, in recognition and appreciation of his skilful handling of the many situations which presented themselves.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Babcock and Wilcox, and Goldie and McCulloch, Ltd.—Babcock and Wilcox, of London, Eng., Babcock and Wilcox Co. of New York, and Goldie and McCulloch of Galt, Ont., have organized a Canadian company, under the name of Babcock-Wilcox and Goldie and McCulloch Ltd., with head office and works at Galt, an authorized capital of \$3,000,000 and branch offices in Montreal, Toronto, Winnipeg and Vancouver. The directors of the new company are: R. O. McCulloch, President; A. R. Goldie, Vice President, both of Galt; A. G. Pratt, New York, Chairman of the Board; A. W. Atwater, K.C., Montreal; W. D. Hoxie and E. H. Wells, New York, and Sir James Kemnal, London, Eng. H. W. Weller, heretofore Manager of Babcock and Wilcox Ltd., Montreal, has been appointed Vice President there in charge of eastern sales. Western sales will be handled from the head office in Galt, with the exception of British Columbia, which will be handled by C. C. Moore and Co., Vancouver. The new company has acquired Babcock and Wilcox Ltd. Canadian business, and Goldie and McCulloch Co.'s business, except the latter's vault, safe and safety deposit box manufacturing. The new company will manufacture boilers, superheaters, economizers, stokers, boilers, boiler accessories, engines, pumps, turbines, condensers, etc., at Galt, and Goldie and McCulloch Co. will continue

to manufacture vaults, safes and safety deposit boxes there.

Canadian Vickers Ltd., Montreal, has taken over the Phoenix Bridge & Iron Works Ltd. plant there, and has entered the structural steel field, both at its own plant at Maisonneuve, and at the Phoenix Co.'s shop, and will fabricate bridges, structural steel and plate work of all descriptions. Canadian Vickers Ltd. has for some time past been doing a general engineering and manufacturing business in boilers, engines, mine machinery, pressure stills, tanks, etc., which will be carried on and probably enlarged. Canadian Vickers Ltd. organization is in charge of A. R. Gillham, Managing Director; P. L. Miller being General Manager in direct charge of marine and aviation work; and E. S. Mattice, Chief Engineer in direct charge of structural steel and industrial machinery.

Robert W. Hunt & Co., Ltd., consulting and inspecting engineer, chemist and metallurgist, Montreal, has appointed A. L. Harkness, B.A.Sc., as Chief Engineer. His record is as follows:—May 1906, graduated in civil engineering, with honors, from School of Practical Science, Toronto; May 1906 to Oct. 1907, draftsman, Dominion Bridge Co., Montreal; May 1908, graduated (B.A.Sc.), with honors, from Toronto University Faculty of applied science; May 1908 to May 1909, draftsman, Dominion Bridge Co., Montreal; March 1909 to May 1910, structural designer and estimator, Dominion Bridge Co., Montreal; May 1910 to Oct. 1910, on St. Lawrence Bridge Co.'s staff, preparing tender for Quebec Bridge; Oct. 1910 to April 1911, structural designer and estimator, Dominion Bridge Co., Montreal; April 1911 to Sept. 1919, on St. Lawrence Bridge Co.'s staff on design of Quebec Bridge; and from Aug. 1914, as Assistant Engineer to Engineer of Construction; Sept. 1919 to Jan. 1920, with Essellstyn, Murphy & Hanford, Detroit, Mich., on design of reinforcing concrete subway approach to Belle Isle Bridge; Jan. 1920 to Sept. 1920, with Smith, Hinchman & Grylls, Detroit, Mich., designing structural steel for Marysville Power House, Detroit Edison Co., also designing structural framework of other buildings in both reinforced concrete and steel; Sept. 1920 to March 1921, with an engineering firm placing orders and supervising shipments of materials for large power house for municipal council, Shanghai, China; March 1921 to July 1921, with Ross & Macdonald, architects, Montreal, as structural designer; July 1921 to April 1922, with Canadian Concrete Steel Co., on design of reinforced concrete frames for McGill medical building and Rosemount apartments, Montreal, also making preliminary designs and estimates for other buildings; April 1922 to March 1923, with H. C. Johnston & Co., general contractors; March 1923 to May 1923, with John S. Metcalfe Co., as structural designer; May 1923 to Oct. 1923, checking reinforced concrete design and supervising construction of Drummond Court apartments, Montreal. He is an associate member of the Engineering Institute of Canada, and a member of the Quebec Professional Engineers Corporation.

M. C. McElligott, Preston, Ont., proprietor of Canadian Cleveland Fare Box Co., has been appointed exclusive Canadian Agent for Damon-Chapman Turnstile Co., of Rochester, N.Y., and also for Sattley Coin Handling Machine Co., Detroit, Mich., manufacturers of coin counting and sorting machines.

Dake Engine Co., Grand Haven, Mich., manufacturers of steering gears, mooring hoists, capstans, anchor windlasses, gang plank hoists, drill hoists, spud lifters, centrifugal pumping sets, cargo hoists, etc., announces that the increase in its Canadian business, since it opened a branch office in Toronto two years ago, is such that it has removed to larger quarters at 502 Kent Building, from 45 Adelaide St. East. Capt. Wm. J. Stitt is Canadian Sales Manager.

Templeton, Kenly & Co. Ltd., Chicago, Ill., which, prior to the Great War, operated its own plant for the manufacture of Simplex jacks, at 179 Van Horne St., Toronto, and which surrendered the plant and facilities for war work, and subsequently maintained an office at 131 Front St. West, Toronto, under the direction of Arthur C. Lewis, until he went overseas with the 3rd Battalion, is arranging for the manufacture of Simplex jacks in Canada, under the direction of Mr. Lewis, who is now President, Templeton, Kenly & Co., Ltd., a Canadian corporation.

Guy Tombs, of Guy Tombs Ltd., Montreal, has been elected President, Pickfords Colonial Inc., which is a subsidiary of Hayes Wharf Ltd., of London, Eng., and which owns and operates docks, warehouses, lighters, trucks, etc., in London, particularly on the River Thames, having been engaged in transporting goods and passengers for many years. Another subsidiary has headquarters in New York, and Guy Tombs Ltd. will be represented there at 11 Broadway.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries, unless otherwise stated:—

American Association of Port Authorities—T. S. McChesney, New Orleans Port Commission, New Orleans, La.

American Railway Association, Mechanical Division, V. R. Haworthorne, 431 South Dearborn St., Chicago, Ill.

Bureau of Explosives—A. H. McMullen, Inspector, lines east of Port Arthur, 354 New Union Station, Toronto.—D. W. McNabb, Inspector, lines west of Port Arthur, C.P.R. station, Winnipeg.

Canadian Car Demurrage Bureau, Eastern Lines—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal. Western Lines—F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Electric Railway Association—Eustace Smith, Jr., 35 Yonge Street, Toronto.

Canadian Freight Association—Eastern Lines, G. C. Ransom, Chairman, 909 Shaughnessy Building, Montreal.—Western Lines, F. W. Thompson, Chairman, 805 Boyd Bldg., Winnipeg.

Canadian Industrial Traffic League—H. W. Blahout, 950 Woodbine Ave., Toronto.

Canadian Passenger Association—Eastern Lines, G. H. Webster, 54 Beaver Hall Hill, Montreal.—Western Lines, E. J. Stone, 306 Union Station, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club—W. A. Booth, 53 Rushbrooke St., Montreal. Meetings at Montreal 2nd Tuesday, each month, except June, July and August, at 8.30 p.m.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, K.C., Counsel, Kingston, Ont.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 84 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield Street, Montreal.

Express Traffic Association of Canada—C. N. Ham, Chairman, 137 McGill Street, Montreal.

Great Lakes and St. Lawrence River Rate Com-

mittee—A. E. Storey, 310 Canadian National Rys. General Office, Montreal.

Hydro Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee—James Morrison, Canadian National Rys., Montreal.

Quebec Transportation Club—A. F. Dion, 131 Dalhousie Street, Quebec, Que.

Railway Association of Canada—C. P. Riddell, General Secretary, 263 St. James Street, Montreal.

Western Operating Committee, E. J. Stone, 306 Union Station, Winnipeg.

Shipping Federation of British Columbia—Capt. J. R. Stewart, 837 Hastings St. West, Vancouver.

Shipping Federation of Canada—Thomas Robb, Manager, 42 St. Sacramento Street, Montreal.

Transportation Club of Toronto—W. J. Hotrum, 595 Runnymede Road, Toronto.

Transportation Club of Vancouver—C. A. Dorfner, 450 Hastings Street West, Vancouver, B.C.

Winnipeg Traffic Club—A. J. Barber, 114 Cado-min Bldg., Winnipeg, Man.

Transportation Meetings, Etc., in 1923 and 1924.

The names of persons given below are those of the Secretaries, unless stated otherwise:—

Dec. 4.—National Association of Railway and Utilities Commissioners, Miami, Florida. J. B. Walker, 49 Lafayette St., New York, N.Y.

Dec. 6 and 7.—American Railway Development Association, Chicago (semi-annual meeting). W. H. Hill, Agricultural Agent, New York Central Rd., Chicago.

Dec. 10 to 12.—American Association of Port Authorities, New Orleans, La. T. S. McChesney,

New Orleans.

Jan. 15 to 17, 1924.—American Wood Preservers Association, Kansas City, Mo. P. R. Hicks, 1146 Otis Building, Chicago, Ill.

Jan. 17, 18.—National Association of Railway Tie Producers, Kansas City, Mo. J. T. Penny, T. J. Moss Tie Co., St. Louis, Mo.

March 11 to 13.—American Railway Association, Division IV, Engineering, Chicago, Ill. E. H. Fritch, 431 South Dearborn St., Chicago.

March 13, 14.—American Railway Association, Division IV, Signal Section, Chicago, Ill. H. S. Balliet, 30 Desey St., New York, N.Y.

April.—American Railway Association, Division VII, Freight Claims, New Orleans, La. L. Pilcher, 431 South Dearborn St., Chicago.

May.—Association of Railway Claims Agents, West Baden, Ind. H. D. Morris, Northern Pacific Ry., St. Paul, Minn.

May 14 to 16.—American Railway Development Association, Savannah, Ga. (annual meeting). W. H. Hill, Agricultural Agent, New York Central Rd., Chicago, Ill.

May 20 to 23.—Master Boiler Makers' Association, Chicago, Ill. H. D. Vought, 26 Cortland St., New York, N.Y.

May 26-29.—International Railway Fuel Association, Chicago. J. B. Hutchison, 6000 Michigan Ave., Chicago, Ill.

June 3.—American Association of General Baggage Agents, Montreal. E. L. Duncan, 332 South Michigan Ave., Chicago, Ill.

June 11-18.—American Railway Association, Mechanical Division, Atlantic City, N.J. V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

June 18 to 20.—American Association of Railroad Superintendents, Buffalo, N.Y. J. Rothschild, 400 Union Station, St. Louis, Mo.

Sept. 16-18.—Roadmasters' and Maintenance of Way Association, New York, N.Y. P. J. McDrews, C. & N.W. Ry., Sterling, Ill.

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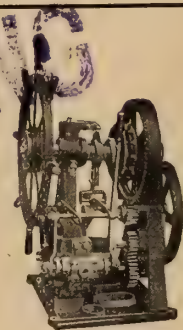
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Notice is hereby given that a dividend of six per cent. on the paid-up capital stock of the Company for the half-year ended Nov. 30, 1923, has been declared payable Dec. 1, 1923, to the shareholders on record as of Nov. 30, 1923.

G. T. CHISHOLM, Secretary.
Toronto, Nov. 22, 1923.

NOTICE.

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758 issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the fact that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.



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At a meeting of the Board of Directors held today, a dividend of two and one-half per cent. on the Common Stock for the quarter ended 30th September last, was declared from railway revenues and Special Income, payable 31st December next, to Shareholders of record at three p.m. on 30th November instant.

By order of the Board,

ERNEST ALEXANDER,
Secretary.

Montreal, 13th November, 1923.

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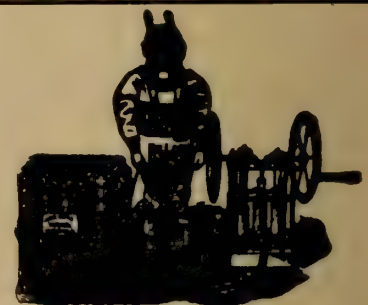
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THE Canadian Pacific Railway, through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In the Reference Libraries maintained at Montreal, Chicago and New York are complete data on natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added. No charge or obligation attaches to this service. Business organizations are invited to make use of it.

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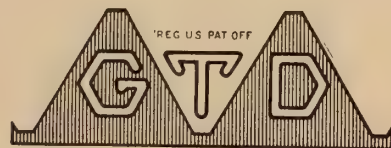
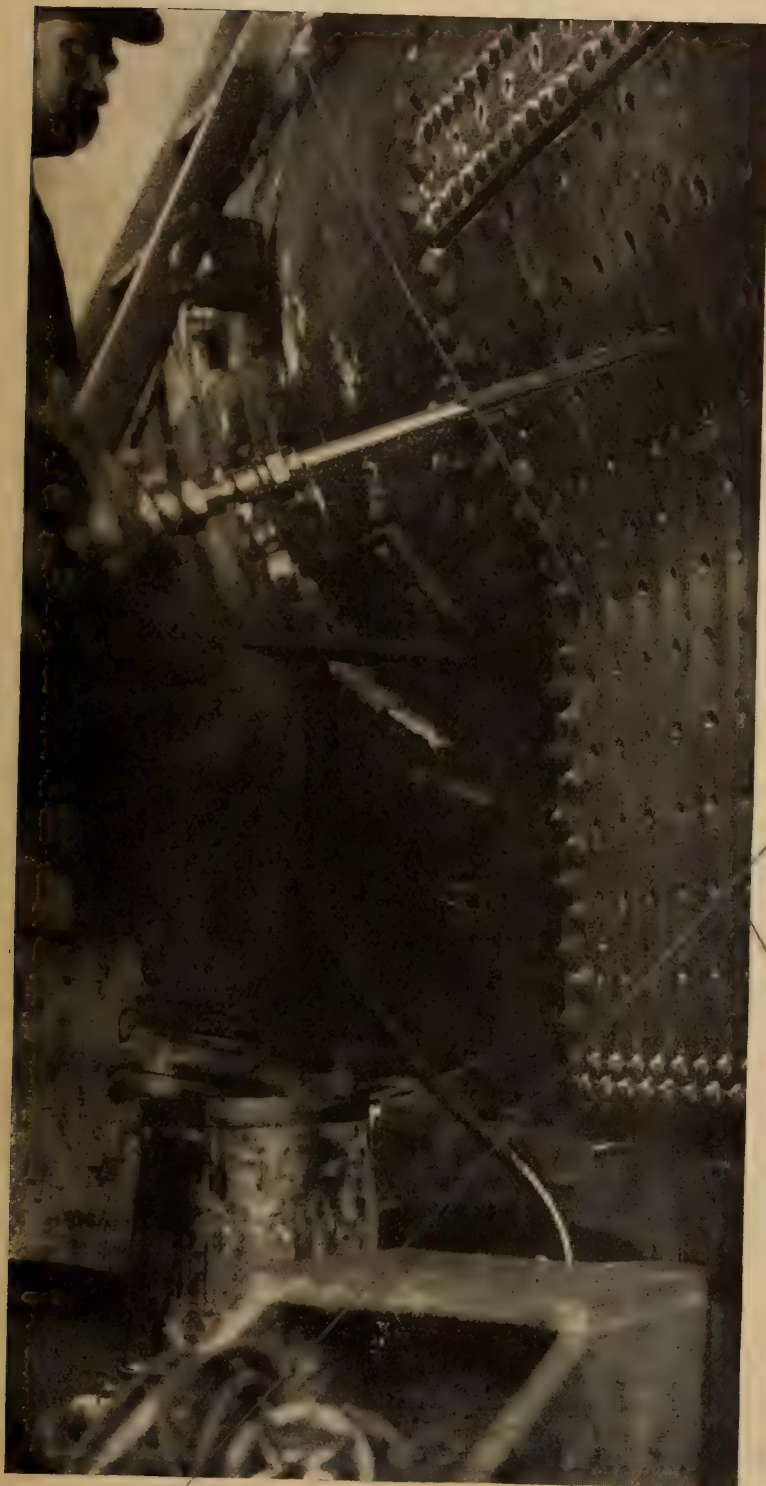
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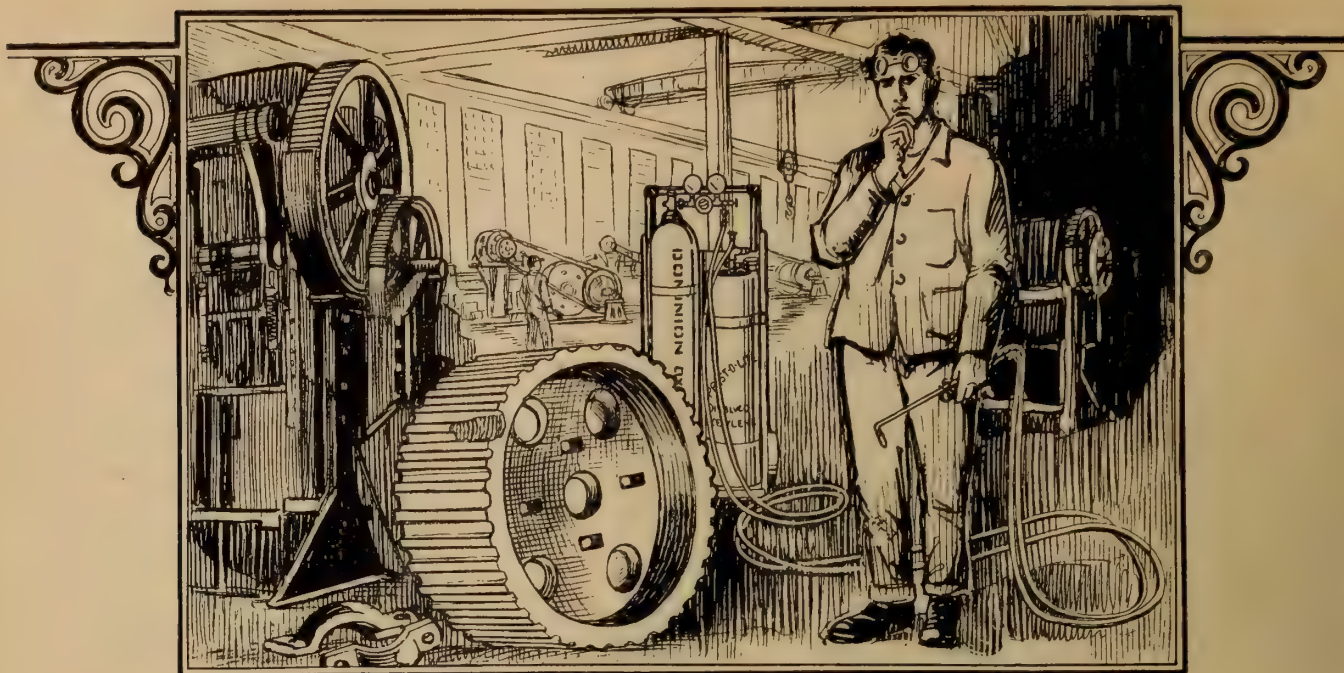
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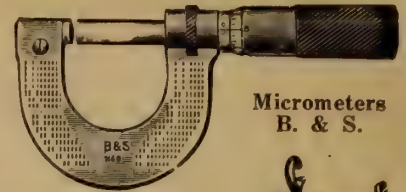
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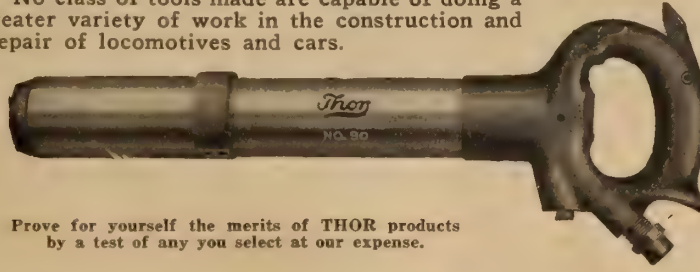
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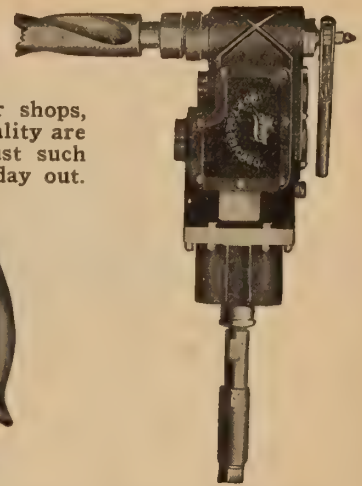
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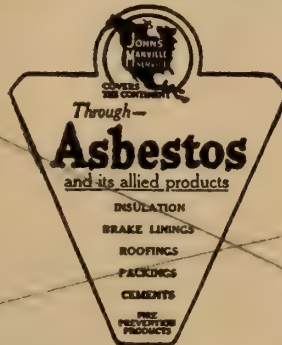
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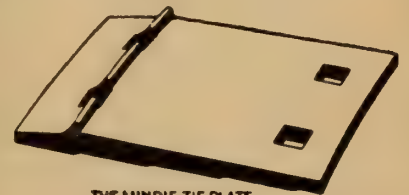
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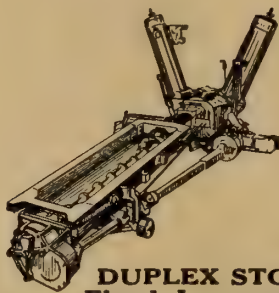
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This letter may not mean very much to-day, but it meant a great deal in 1881, when accidents due to imperfect mine ventilation were taking a frightful toll of lives.

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Lighter Strathbuoy—Capacity, 700 tons.

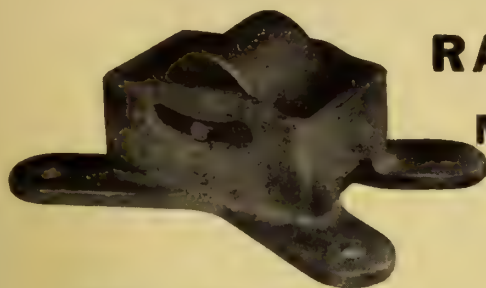
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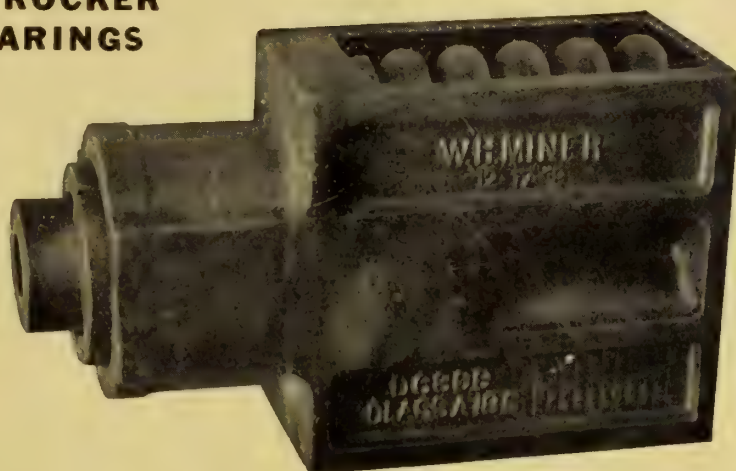
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on our part in the manufacture of Hunt-Spiller Gun Iron is reflected in the product we present, which will produce corresponding results in its application on your locomotives.

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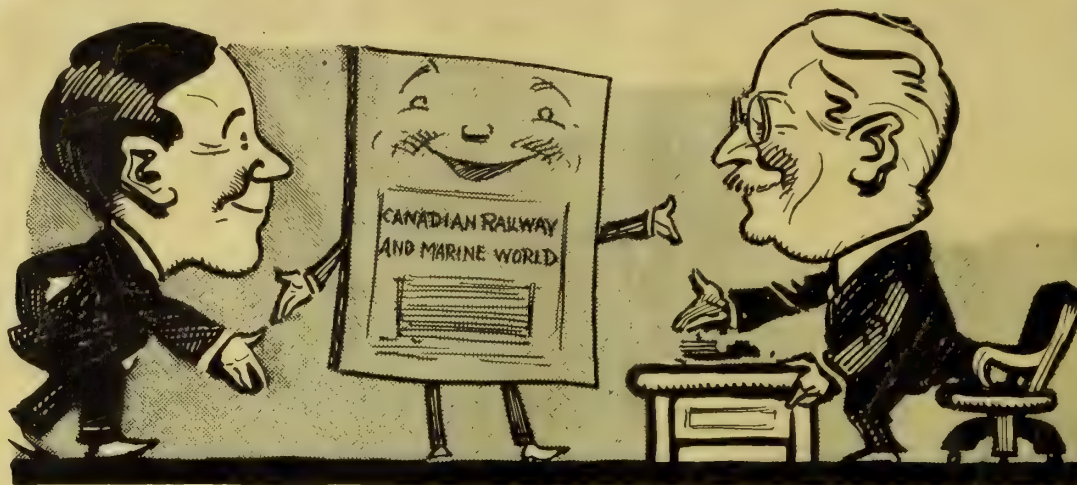
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But, a better plan than that, because more direct and more all-inclu-

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We say this advisedly, at the suggestion of more than one busy official; for bear in mind that the man who bears on his shoulders the responsibility of recommending, specifying or buying, equipment or materials feels the need of honest information—is hungry for facts and weary of time-eating interviews with salesmen.

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